

# DICOM Conformance Statement

Product Name: *syngo* SC2000  
Workplace

Release: VB20

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## 1 CONFORMANCE STATEMENT OVERVIEW

The **syngo® SC2000™ Workplace** supports the following DICOM Application Entities:

- Verification
  - o Verification AE
- Transfer
  - o Storage AE
  - o Storage Commitment AE
- Query / Retrieve
  - o Query AE
  - o Retrieve AE

Table 1-1:  
Network Services

| SOP Classes                                        | Service Class User (SCU) | Service Class Provider (SCP) |
|----------------------------------------------------|--------------------------|------------------------------|
| <b>VERIFICATION</b>                                |                          |                              |
| <b>Verification AE</b>                             |                          |                              |
| Verification                                       | Yes                      | Yes                          |
| <b>TRANSFER</b>                                    |                          |                              |
| <b>Storage AE</b>                                  |                          |                              |
| Ultrasound Image Storage                           | Yes                      | Yes                          |
| Ultrasound Multi-frame Image Storage               | Yes                      | Yes                          |
| Secondary Capture Image Storage                    | Yes                      | Yes                          |
| Comprehensive SR                                   | Yes                      | Yes                          |
| Raw Data Storage                                   | Yes                      | Yes                          |
| <b>Storage Commitment AE</b>                       |                          |                              |
| Storage Commitment Push Model                      | Yes                      | No                           |
| <b>QUERY / RETRIEVE</b>                            |                          |                              |
| <b>Query AE</b>                                    |                          |                              |
| Study Root Query/Retrieve Information Model – FIND | Yes                      | No                           |
| <b>Retrieve AE</b>                                 |                          |                              |
| Study Root Query/Retrieve Information Model – MOVE | Yes                      | No                           |

**Table 1-2:  
UID Values**

| SOP Class Name                                     | SOP Class UID                 | Category         |
|----------------------------------------------------|-------------------------------|------------------|
| <b>Verification AE</b>                             |                               |                  |
| Verification                                       | 1.2.840.10008.1.1             | Verification     |
| <b>Storage AE</b>                                  |                               |                  |
| Ultrasound Image Storage                           | 1.2.840.10008.5.1.4.1.1.6.1   | Transfer         |
| Ultrasound Multi-frame Image Storage               | 1.2.840.10008.5.1.4.1.1.3.1   | Transfer         |
| Secondary Capture Image Storage                    | 1.2.840.10008.5.1.4.1.1.7     | Transfer         |
| Comprehensive SR                                   | 1.2.840.10008.5.1.4.1.1.88.33 | Transfer         |
| Raw Data Storage                                   | 1.2.840.10008.5.1.4.1.1.66    | Transfer         |
| <b>Storage Commitment AE</b>                       |                               |                  |
| Storage Commitment Push Model                      | 1.2.840.10008.1.20.1          | Transfer         |
| <b>Query AE</b>                                    |                               |                  |
| Study Root Query/Retrieve Information Model – FIND | 1.2.840.10008.5.1.4.1.2.2.1   | Query / Retrieve |
| <b>Retrieve AE</b>                                 |                               |                  |
| Study Root Query/Retrieve Information Model – MOVE | 1.2.840.10008.5.1.4.1.2.2.2   | Query / Retrieve |

**Table 1-3:  
Media Services**

| Media Storage Application Profile | Write Files (FSC or FSU) | Read Files (FSR) |
|-----------------------------------|--------------------------|------------------|
| DVD—Recordable                    |                          |                  |
| STD-US-ID-SF-DVD                  | Yes                      | Yes              |
| STD-US-ID-MF-DVD                  | Yes                      |                  |
| Compact Disk—Recordable           |                          |                  |
| STD-US-ID-SF-CDR                  | Yes                      | Yes              |
| STD-US-ID-MF-CDR                  | Yes                      |                  |

## 2 TABLE OF CONTENTS

|         |                                                              |    |
|---------|--------------------------------------------------------------|----|
| 1       | CONFORMANCE STATEMENT OVERVIEW.....                          | 2  |
| 2       | TABLE OF CONTENTS.....                                       | 4  |
| 3       | INTRODUCTION .....                                           | 9  |
| 3.1     | Audience.....                                                | 9  |
| 3.2     | Remarks.....                                                 | 9  |
| 3.3     | Terms and Definitions .....                                  | 10 |
| 3.4     | Basics of DICOM Communication .....                          | 12 |
| 3.5     | Abbreviations .....                                          | 13 |
| 3.6     | References.....                                              | 13 |
| 4       | NETWORKING .....                                             | 14 |
| 4.1     | Implementation Model.....                                    | 14 |
| 4.1.1   | Application Data Flow .....                                  | 14 |
| 4.1.2   | Functional Definition of AE's .....                          | 15 |
| 4.1.2.1 | Verification AE.....                                         | 15 |
| 4.1.2.2 | Storage AE.....                                              | 16 |
| 4.1.2.3 | Storage Commitment AE.....                                   | 16 |
| 4.1.2.4 | Query/Retrieve AE .....                                      | 16 |
| 4.1.3   | Sequencing of Real-World Activities.....                     | 17 |
| 4.2     | AE Specifications .....                                      | 18 |
| 4.2.1   | Storage AE.....                                              | 18 |
| 4.2.1.1 | SOP Classes.....                                             | 18 |
| 4.2.1.2 | Association Policies.....                                    | 19 |
| 4.2.1.3 | Association Initiation Policy (Storage SCU).....             | 20 |
| 4.2.1.4 | Association Acceptance Policy .....                          | 22 |
| 4.2.2   | Storage Commitment AE .....                                  | 23 |
| 4.2.2.1 | SOP Classes.....                                             | 23 |
| 4.2.2.2 | Association Policies.....                                    | 23 |
| 4.2.2.3 | Association Initiation Policy (Storage Commitment SCU) ..... | 24 |
| 4.2.2.4 | Association Acceptance Policy .....                          | 26 |
| 4.2.3   | Query AE.....                                                | 26 |
| 4.2.3.1 | SOP Classes.....                                             | 26 |
| 4.2.3.2 | Association Policies.....                                    | 27 |
| 4.2.3.3 | Association Initiation Policy (Query SCU) .....              | 27 |
| 4.2.3.4 | Association Acceptance Policy .....                          | 29 |
| 4.2.4   | Retrieve AE .....                                            | 29 |
| 4.2.4.1 | SOP Classes.....                                             | 29 |
| 4.2.4.2 | Association Policies.....                                    | 29 |
| 4.2.4.3 | Association Initiation Policy .....                          | 30 |
| 4.2.4.4 | Association Acceptance Policy .....                          | 31 |
| 4.3     | Network Interfaces .....                                     | 31 |
| 4.3.1   | Physical Network Interface.....                              | 31 |
| 4.3.2   | Additional Protocols.....                                    | 31 |
| 4.3.3   | IPv4 and IPv6 Support.....                                   | 31 |
| 4.4     | Configuration.....                                           | 31 |

|         |                                                                  |    |
|---------|------------------------------------------------------------------|----|
| 4.4.1   | Local Host - TCP/IP and General .....                            | 32 |
| 4.4.1.1 | DICOM Storage Configuration .....                                | 32 |
| 5       | MEDIA INTERCHANGE .....                                          | 33 |
| 5.1     | Implementation Models .....                                      | 33 |
| 5.1.1   | Application Data Flow Diagram .....                              | 33 |
| 5.1.2   | Functional definitions of AEs .....                              | 34 |
| 5.1.3   | Sequencing of Real-World Activities .....                        | 34 |
| 5.1.4   | File Meta Information for Implementation Class and Version ..... | 34 |
| 5.2     | AE Specifications .....                                          | 34 |
| 5.2.1   | Media Storage AE Specification .....                             | 34 |
| 5.2.2   | Implementation Identifying Information .....                     | 35 |
| 5.3     | Media Storage Application Profile .....                          | 35 |
| 5.3.1   | DICOMDIR Keys .....                                              | 35 |
| 5.3.2   | Compliance to STD-GEN-CDR .....                                  | 37 |
| 5.3.3   | Compliance to STD-US-SC-MF-CDR .....                             | 37 |
| 5.3.4   | Compliance to STD-US-ID-MF-CDR .....                             | 38 |
| 6       | SUPPORT OF CHARACTER SETS .....                                  | 38 |
| 6.1     | Character Sets for <i>syngo</i> SC2000 Workplace .....           | 38 |
| 7       | SECURITY .....                                                   | 38 |
| 7.1     | Security Profiles .....                                          | 38 |
| 7.2     | Association Level Security .....                                 | 38 |
| 7.3     | Application Level Security .....                                 | 38 |
| 8       | ANNEXES .....                                                    | 39 |
| 8.1     | IOD Contents .....                                               | 39 |
| 8.1.1   | Created SOP Instances .....                                      | 39 |
| 8.1.1.1 | US Image IOD Attributes .....                                    | 39 |
| 8.1.1.2 | US Multi-frame Image IOD Attributes .....                        | 42 |
| 8.1.1.3 | Secondary Capture Image IOD Attributes .....                     | 45 |
| 8.1.1.4 | Comprehensive SR IOD Attributes .....                            | 47 |
| 8.1.1.5 | Raw Data IOD Attributes .....                                    | 50 |
| 8.1.1.6 | Query: C-Find .....                                              | 54 |
| 9       | APPENDICES .....                                                 | 57 |
| 9.1     | Appendix A: Echocardiography Structured Report .....             | 57 |
| 9.1.1   | Patient Characteristics .....                                    | 58 |
| 9.1.2   | Left Ventricle .....                                             | 58 |
| 9.1.3   | Right Ventricle .....                                            | 69 |
| 9.1.4   | Left Atrium .....                                                | 72 |
| 9.1.5   | Right Atrium .....                                               | 77 |
| 9.1.6   | Aortic Valve .....                                               | 78 |
| 9.1.7   | Mitral Valve .....                                               | 81 |
| 9.1.8   | Pulmonic Valve .....                                             | 85 |
| 9.1.9   | Tricuspid Valve .....                                            | 87 |
| 9.1.10  | Aorta .....                                                      | 89 |
| 9.1.11  | Pulmonary Artery .....                                           | 91 |
| 9.1.12  | Vena Cava .....                                                  | 92 |
| 9.1.13  | Pulmonary Venous Structure .....                                 | 94 |

|          |                                                                    |     |
|----------|--------------------------------------------------------------------|-----|
| 9.1.14   | Cardiac Shunt Study.....                                           | 96  |
| 9.1.15   | Private Section: Coronary Artery.....                              | 98  |
| 9.1.16   | Private Section: Stress Echo.....                                  | 98  |
| 9.1.16.1 | Stress Echo and LVA .....                                          | 100 |
| 9.1.17   | Private Section: Clinical Application Package.....                 | 102 |
| 9.1.17.1 | CAP: Left Ventricular Analysis.....                                | 103 |
| 9.1.17.2 | CAP: Right Ventricular Analysis.....                               | 104 |
| 9.1.17.3 | CAP: Velocity Vector Imaging.....                                  | 105 |
| 9.1.17.4 | CAP: 3D PISA.....                                                  | 117 |
| 9.1.17.5 | CAP: Valves Analysis.....                                          | 118 |
| 9.1.17.6 | CAP: Flow Analysis .....                                           | 124 |
| 9.2      | Appendix B: Vascular Structured Report.....                        | 126 |
| 9.2.1    | Patient Characteristics .....                                      | 127 |
| 9.2.2    | Artery of Neck (Left Extracranial Arteries, Carotid Ratios) .....  | 128 |
| 9.2.3    | Artery of Neck (Right Extracranial Arteries, Carotid Ratios) ..... | 129 |
| 9.2.4    | Artery of Lower Extremity (Left Side).....                         | 130 |
| 9.2.5    | Artery of Lower Extremity (Right Side) .....                       | 132 |
| 9.2.6    | Vein of Lower Extremity (Left Side) .....                          | 134 |
| 9.2.7    | Vein of Lower Extremity (Right Side).....                          | 134 |
| 9.2.8    | Artery of Upper Extremity (Left Side).....                         | 134 |
| 9.2.9    | Artery of Upper Extremity (Right Side) .....                       | 136 |
| 9.2.10   | Vascular Structure of Kidney (Left Side).....                      | 137 |
| 9.2.11   | Vascular Structure of Kidney (Right Side) .....                    | 139 |
| 9.2.12   | Artery of Abdomen (Unilateral).....                                | 140 |
| 9.2.13   | Vein of Abdomen (Unilateral) .....                                 | 143 |
| 9.2.14   | Vascular Graft 1.....                                              | 145 |
| 9.2.15   | Vascular Graft 2.....                                              | 146 |
| 9.2.16   | Private Section: Transplant.....                                   | 146 |
| 9.2.16.1 | Liver Transplant .....                                             | 147 |
| 9.2.16.2 | Kidney Transplant .....                                            | 148 |
| 9.3      | Appendix C: Supported Units in Structured Reports.....             | 150 |

## LIST OF TABLES

|                                                                                                |    |
|------------------------------------------------------------------------------------------------|----|
| Table 1-1: Network Services .....                                                              | 2  |
| Table 1-2: UID Values .....                                                                    | 3  |
| Table 1-3: Media Services .....                                                                | 3  |
| Table 4-1: SOP Classes for Storage AE.....                                                     | 18 |
| Table 4-2: DICOM Application Context.....                                                      | 19 |
| Table 4-3: Number of Associations as an Association Initiator for Storage AE .....             | 19 |
| Table 4-4: Number of Associations as an Association Acceptor for Storage AE.....               | 19 |
| Table 4-5: Asynchronous Nature as an Association Initiator for Storage AE .....                | 19 |
| Table 4-6: DICOM Implementation Class and Version for Storage AE.....                          | 19 |
| Table 4-7: Proposed Presentation Contexts for Storage AE .....                                 | 20 |
| Table 4-8: Photometric Interpretation .....                                                    | 21 |
| Table 4-9: DICOM Command Response Status Handling Behavior.....                                | 21 |
| Table 4-10: DICOM Command Communication Failure Behavior .....                                 | 21 |
| Table 4-11: Storage C-STORE Response Status.....                                               | 23 |
| Table 4-12: SOP Classes for Storage Commitment AE .....                                        | 23 |
| Table 4-13: DICOM Application Context.....                                                     | 23 |
| Table 4-14: Number of Associations as an Association Initiator for Storage Commitment AE ..... | 24 |
| Table 4-15: Number of Associations as an Association Acceptor for Storage Commitment AE .....  | 24 |
| Table 4-16: Asynchronous Nature as an Association Initiator for Storage Commitment AE.....     | 24 |
| Table 4-17: DICOM Implementation Class and Version for Storage Commitment AE .....             | 24 |
| Table 4-18: Proposed Presentation Contexts for Storage Commitment AE.....                      | 25 |
| Table 4-19: DICOM Command Response Status Handling Behavior.....                               | 25 |
| Table 4-20: DICOM Command Communication Failure Behavior .....                                 | 25 |
| Table 4-21: Proposed Presentation Contexts for Storage Commitment AE.....                      | 26 |
| Table 4-22: DICOM Command Response Status Handling Behavior.....                               | 26 |
| Table 4-23: SOP Classes for Query AE .....                                                     | 26 |
| Table 4-24: DICOM Application Context.....                                                     | 27 |
| Table 4-25: Number of Associations as an Association Initiator for Query AE.....               | 27 |
| Table 4-26: Number of Associations as an Association Acceptor for Query AE.....                | 27 |
| Table 4-27: Asynchronous Nature as an Association Initiator for Query AE .....                 | 27 |
| Table 4-28: DICOM Implementation Class and Version for Query AE.....                           | 27 |
| Table 4-29: Proposed Presentation Contexts for Query AE.....                                   | 28 |
| Table 4-30: DICOM Command Response Status Handling Behavior.....                               | 28 |
| Table 4-31: DICOM Command Communication Failure Behavior .....                                 | 28 |
| Table 4-32: SOP Classes for Retrieve AE.....                                                   | 29 |
| Table 4-33: DICOM Application Context.....                                                     | 29 |
| Table 4-34: Number of Associations as an Association Initiator for Retrieve AE .....           | 29 |
| Table 4-35: Number of Associations as an Association Acceptor for Retrieve AE .....            | 29 |
| Table 4-36: Asynchronous Nature as an Association Initiator for Retrieve AE.....               | 30 |
| Table 4-37: DICOM Implementation Class and Version for Retrieve AE .....                       | 30 |
| Table 4-38: Proposed Presentation Contexts for Retrieve AE and Activity MOVE SCU .....         | 30 |
| Table 4-39: DICOM Command Response Status Handling Behavior.....                               | 31 |
| Table 4-40: DICOM Command Communication Failure Behavior .....                                 | 31 |
| Table 5-1: Implementation Class/Version Name – Media Interchange .....                         | 34 |
| Table 5-2: Application Profiles, Activities, and Roles for DICOM Exchange Media.....           | 34 |
| Table 5-3: DICOM Implementation Class and Version for Media Storage AE .....                   | 35 |
| Table 5-4: DICOMDIR Keys.....                                                                  | 35 |
| Table 5-5: STD-GEN-CDR Supported SOP Classes .....                                             | 37 |
| Table 5-6: STD-US-SC-MF-CDR Supported SOP Classes.....                                         | 37 |
| Table 5-7: STD-US-MF-CDR Supported SOP Classes.....                                            | 38 |

**LIST OF FIGURES**

Figure 4-1. Functional Overview ..... 14

Figure 4-2. Functional Overview (Continued) ..... 15

Figure 4-3. Sequence Diagram for Real-World Activities ..... 17

Figure 4-4. Sequence Diagram for Real-World Activities (continued)..... 18

Figure 5-1. Media Application Data Flow Diagram..... 33

### 3 INTRODUCTION

This document describes the conformance to the ACR-NEMA DICOM 3.0 Standard by the *syngo*® SC2000™ Workplace, version VB20 from Siemens Healthineers. It shall establish the conformance specifications for this system only, and does not apply to other products offered by Siemens Healthineers or its affiliates.

The *syngo* SC2000 Workplace is a device used to review SC2000-generated ultrasound studies. These studies can be sent using DICOM standard protocols and definitions to other DICOM compliant devices that support SOP classes as defined in Table 4-1: SOP Classes for Storage AE in this document.

The DICOM standard provides a well-defined set of structures and protocols that allow inter-operability of a wide variety of medical imaging devices. The *syngo* SC2000 Workplace provides support for essential services related to ultrasound scanning and connectivity to DICOM compliant devices. *Syngo* SC2000 Workplaces will not support all features supported by the DICOM standard. This document clearly states the DICOM services and data classes that are supported by the applications included with the *syngo* SC2000 Workplace. The intent of this document is to allow users and other vendors who also conform to the DICOM standard to exchange information within the specific context of those elements of the DICOM standard that the *syngo* SC2000 Workplace supports.

This document is written with respect to the adopted portions of the DICOM standard, Version 3. The following sections of this document follow the outline specified in the DICOM Standard NEMA publication PS3.2.<sup>1</sup>

#### 3.1 Audience

This document is written for the people that need to understand how the *syngo* SC2000 Workplace will integrate into their healthcare facility. This includes both those responsible for overall imaging network policy and architecture, as well as integrators who need to have a detailed understanding of the DICOM features of the product. This document contains some basic DICOM definitions so that any reader may understand how this product implements DICOM features. However, integrators are expected to fully understand all the DICOM terminology, how the tables in this document relate to the product's functionality, and how that functionality integrates with other devices that support compatible DICOM features.

#### 3.2 Remarks

The scope of this DICOM Conformance Statement is to facilitate integration between the *syngo* SC2000 Workplace and other DICOM products. The Conformance Statement should be read and understood in conjunction with the DICOM Standard.

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 as SCU and SCP, respectively.

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

The scope of this Conformance Statement is to facilitate communication with Siemens and other vendors' Medical equipment. The Conformance Statement should be read and understood in conjunction with the DICOM 3.0 Standard [1]. However, by itself it is not guaranteed to ensure the desired interoperability and a successful interconnectivity.

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<sup>1</sup> Source: DICOM® Standards Publication Part 2, © NEMA. The DICOM Standard is under continuous maintenance. The current official version is available at <http://dicom.nema.org>.

The user should be aware of the following important issues:

- The comparison of different conformance statements is the first step towards assessing interconnectivity.
- Test procedures should be defined and tests should be performed by the user to validate the connectivity desired. DICOM itself and the conformance parts do not specify this.
- The standard will evolve to meet the users' future requirements. Siemens is actively involved in developing the standard further and therefore reserves the right to make changes to its products or to discontinue its delivery.

Siemens reserves the right to modify the design and specifications contained herein without prior notice. Please contact your local Siemens representative for the most recent product information.

### 3.3 Terms and Definitions

Informal definitions are provided for the following terms used in this Conformance Statement. The DICOM Standard is the authoritative source for formal definition of these terms.

**Abstract Syntax** – The information agreed to be exchanged between applications, generally equivalent to a Service/Object Pair (SOP) Class. Examples: Verification SOP Class, Modality Worklist Information Model Find SOP Class, Computed Radiography Image Storage SOP Class.

**ACUSON SC2000™ system** – The volume imaging ultrasound system used with the syngo SC2000 Workplace; also referred to as the SC2000.

**Application Entity (AE)** – An end point of a DICOM information exchange, including the DICOM network or media interface software; i.e., the software that sends or receives DICOM information objects or messages. A single device may have multiple Application Entities.

**Application Entity Title** – The externally known name of an *Application Entity*, used to identify a DICOM application to other DICOM applications on the network.

**Application Context** – The specification of the type of communication used between *Application Entities*. Example: DICOM network protocol.

**Association** – A network communication channel set up between *Application Entities*.

**Attribute** – A unit of information in an object definition; a data element identified by a *tag*. The information may be a complex data structure (Sequence), itself composed of lower level data elements. Examples: Patient ID (0010,0020), Accession Number (0008,0050), Photometric Interpretation (0028,0004), Procedure Code Sequence (0008,1032).

**Attribute Macro** - A set of Attributes that are described in a single table that is referenced by multiple Module or other tables.

**Information Object Definition (IOD)** – A data abstraction of a class of similar Real-World Objects which defines the nature and attributes relevant to the class of Real-World objects represented. Examples: MR Image IOD, CT Image IOD, Print Job IOD.

**Integrating the Healthcare Enterprise (IHE)** – An initiative sponsored by the Radiological Society of North America (RSNA) to document and demonstrate standards-based methods of sharing information in support of optimal patient care. For additional information, see [www.rsna.org/ihe](http://www.rsna.org/ihe).

**Functional Group** - A set of logically related Attributes that are likely to vary together. May be used in Multi-frame IODs to describe parameters which change on a per frame basis.

**Joint Photographic Experts Group (JPEG)** – Joint Photographic Experts Group, The group was organized in 1986, issuing a standard in 1992, which was approved in 1994 as ISO 10918-1. The JPEG standard is used by DICOM applications.

**Media Application Profile** – The specification of DICOM information objects and encoding exchanged on removable media (e.g., CDs), see DICOM PS3.11.

**Module** – A set of *Attributes* within an *Information Object Definition* that are logically related to each other. Example: Patient Module includes (among others) Patient Name, Patient ID, Patient Birth Date, and Patient Sex.

**Negotiation** – First phase of *Association* establishment that allows *Application Entities* to agree on the types of data to be exchanged and how that data will be encoded.

**Picture Archiving and Communications Systems (PACS)** – A DICOM server that accepts medical images from another DICOM system and stores the images for later retrieval.

**Presentation Context** – The set of DICOM network services used over an *Association*, as negotiated between *Application Entities*; includes *Abstract Syntaxes* and *Transfer Syntaxes*.

**Protocol Data Unit (PDU)** – A packet (piece) of a DICOM message sent across the network. It contains protocol control information and user data. Devices must specify the maximum size packet they can receive for DICOM messages.

**Request (RQ)** – A request from one DICOM AE for service from another DICOM AE.

**Response (RSP)** – A response from one DICOM AE to the request for service from another DICOM AE.

**Security Profile** – A set of mechanisms, such as encryption, user authentication, or digital signatures, used by an *Application Entity* to ensure confidentiality, integrity, and/or availability of exchanged DICOM data.

**Service Class Provider (SCP)** – The role of an *Application Entity* that provides a DICOM network service; typically, a server that performs operations requested by another *Application Entity* (*Service Class User*). Examples: Picture Archiving and Communication System (image storage SCP, and image query/retrieve SCP), Radiology Information System (modality worklist SCP).

**Service Class User (SCU)** – The role of an *Application Entity* that uses a DICOM network service; typically, a client. Examples: imaging modality (image storage SCU, and modality worklist SCU), imaging workstation (image query/retrieve SCU).

**Service/Object Pair (SOP) Class** – The specification of the network or media transfer (service) of a particular type of data (object); the fundamental unit of DICOM interoperability specification. Examples: Ultrasound Image Storage Service, Basic Grayscale Print Management.

**Service/Object Pair (SOP) Instance** – An information object; a specific occurrence of information exchanged in a *SOP Class*. Examples: a specific x-ray image.

**Structured Report (SR)** – A DICOM object which contains measurement, calculations, diagnoses, image references, and other non-image information concerning a patient exam.

**syngo® SC2000™ Workplace** – The workplace of this conformance statement that is used with the ACUSON SC2000 volume imaging ultrasound system; also referred to as the SC2000 Workplace.

**Tag** – A 32-bit identifier for a data element, represented as a pair of four digit hexadecimal numbers, the “group” and the “element”. If the “group” number is odd, the tag is for a private (manufacturer-specific) data element. Examples: (0010,0020) [Patient ID], (07FE,0010) [Pixel Data], (0019,0210) [private data element].

**Transfer Syntax** – The encoding used for exchange of DICOM information objects and messages. Examples: *JPEG compressed (images)*, little endian explicit value representation.

**Unique Identifier (UID)** – A globally unique “dotted decimal” string that identifies a specific object or a class of objects; an ISO-8824 Object Identifier. Examples: Study Instance UID, SOP Class UID, SOP Instance UID.

**Value Representation (VR)** – The format type of an individual DICOM data element, such as text, an integer, a person’s name, or a code. DICOM information objects can be transmitted with either explicit identification of the type of each data element (Explicit VR), or without explicit identification (Implicit VR); with Implicit VR, the receiving application must use a DICOM data dictionary to look up the format of each data element.

### 3.4 Basics of DICOM Communication

This section describes terminology used in this Conformance Statement for the non-specialist. The key terms used in the Conformance Statement are highlighted in *italics* below. This section is not a substitute for training about DICOM, and it makes many simplifications about the meanings of DICOM terms.

Two *Application Entities* (devices) that want to communicate with each other over a network using DICOM protocol must first agree on several things during an initial network “handshake”. One of the two devices must initiate an *Association* (a connection to the other device), and ask if specific services, information, and encoding can be supported by the other device (*Negotiation*).

DICOM specifies a number of network services and types of information objects, each of which is called an *Abstract Syntax* for the Negotiation. DICOM also specifies a variety of methods for encoding data, denoted *Transfer Syntaxes*. The Negotiation allows the initiating Application Entity to propose combinations of Abstract Syntax and Transfer Syntax to be used on the Association; these combinations are called *Presentation Contexts*. The receiving Application Entity accepts the Presentation Contexts it supports.

For each Presentation Context, the Association Negotiation also allows the devices to agree on *Roles* – which one is the *Service Class User* (SCU - client) and which is the *Service Class Provider* (SCP - server). Normally the device initiating the connection is the SCU, i.e., the client system calls the server, but not always.

The Association Negotiation finally enables exchange of maximum network packet (*PDU*) size, security information, and network service options (called *Extended Negotiation* information).

The Application Entities, having negotiated the Association parameters, may now commence exchanging data. Common data exchanges include queries for worklists and lists of stored images, transfer of image objects and analyses (structured reports), and sending images to film printers. Each exchangeable unit of data is formatted by the sender in accordance with the appropriate *Information Object Definition*, and sent using the negotiated Transfer Syntax. There is a Default Transfer Syntax that all systems must accept, but it may not be the most efficient for some use cases. Each transfer is explicitly acknowledged by the receiver with a *Response Status* indicating success, failure, or that query or retrieve operations are still in process.

Two Application Entities may also communicate with each other by exchanging media (such as a CD-R). Since there is no Association Negotiation possible, they both use a *Media Application Profile* that specifies “pre-negotiated” exchange media format, Abstract Syntax, and Transfer Syntax.

### 3.5 Abbreviations

|       |                                                    |
|-------|----------------------------------------------------|
| ACR   | American College of Radiology                      |
| AE    | DICOM Application Entity                           |
| AET   | DICOM Application Entity Title                     |
| ASCII | American Standard Code for Information Interchange |
| DB    | Database                                           |
| DCS   | DICOM Conformance Statement                        |
| DSA   | Digital Subtraction Angiography                    |
| IIDC  | Image-Intensifier Distortion Correction            |
| IOD   | DICOM Information Object Definition                |
| ISO   | International Standard Organization                |
| MPPS  | Modality Performed Procedure Step                  |
| MWL   | Modality Worklist                                  |
| NEMA  | National Electrical Manufacturers Association      |
| O     | Optional Key Attribute                             |
| PDU   | DICOM Protocol Data Unit                           |
| R     | Required Key Attribute                             |
| RIS   | Radiology Information System                       |
| SC    | Storage Commitment                                 |
| SCU   | DICOM Service Class User (DICOM client)            |
| SCP   | DICOM Service Class Provider (DICOM server)        |
| SOP   | DICOM Service-Object Pair                          |
| SR    | Structured Report                                  |
| U     | Unique Key Attribute                               |
| US    | Ultrasound                                         |

### 3.6 References

- [1] DICOM® Standards Publication, PS 3.1-2008 – PS 3.18-2008, © NEMA. The DICOM Standard is under continuous maintenance. The current official version is available at <http://dicom.nema.org>.
- [2] IHE Cardiology Technical Framework, Vol. I – II, [http://www.ihe.net/Technical\\_Framework](http://www.ihe.net/Technical_Framework).

## 4 NETWORKING

This section contains the *syngo* SC2000 Workplace networking related services.

### 4.1 Implementation Model

SC2000 Workplace users can review SC2000 system studies directly from the system hard drive. Studies can also be transferred to DICOM workstations and archive servers on a network. Storage Commitment can be used to insure that patient images and data is safely committed. Measurements from Cardiac exams can be exported as DICOM SR Objects. Measurements from Cardiac exams can be exported as DICOM SR Objects.

SC2000 Workplace Real World Activities are indicated by “Real World Activity” names while “SC2000 Workplace AE” indicates the invoked Application Entity. Similarly, the activities associated with service providers are indicated as “Real World Service Activity.”

#### 4.1.1 Application Data Flow

Figure 4-1 and Figure 4-2 provide a functional overview of the SC2000 Workplace's Application Entities (AE). Relationships are shown between user-invoked activities (in the circles at the left of the AEs) and the associated real-world activities provided by DICOM service providers (in the circles at the right of the AEs).

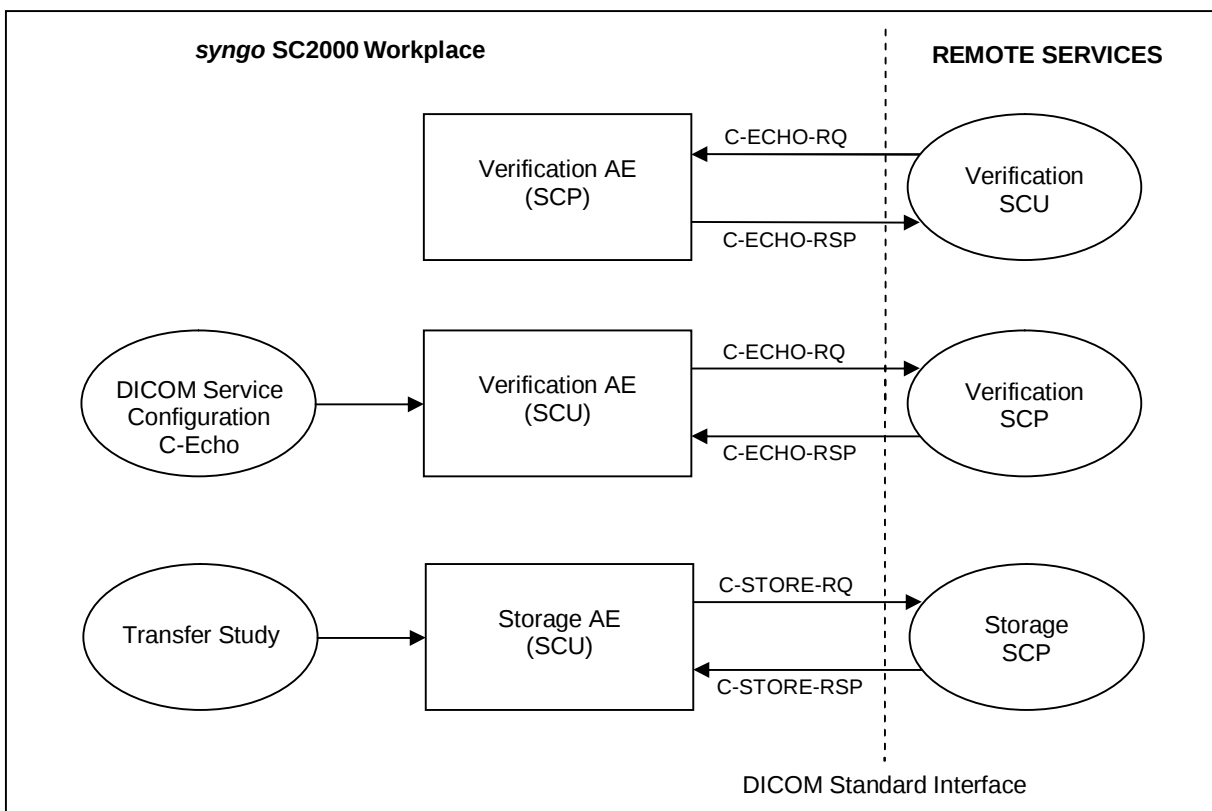


Figure 4-1. Functional Overview

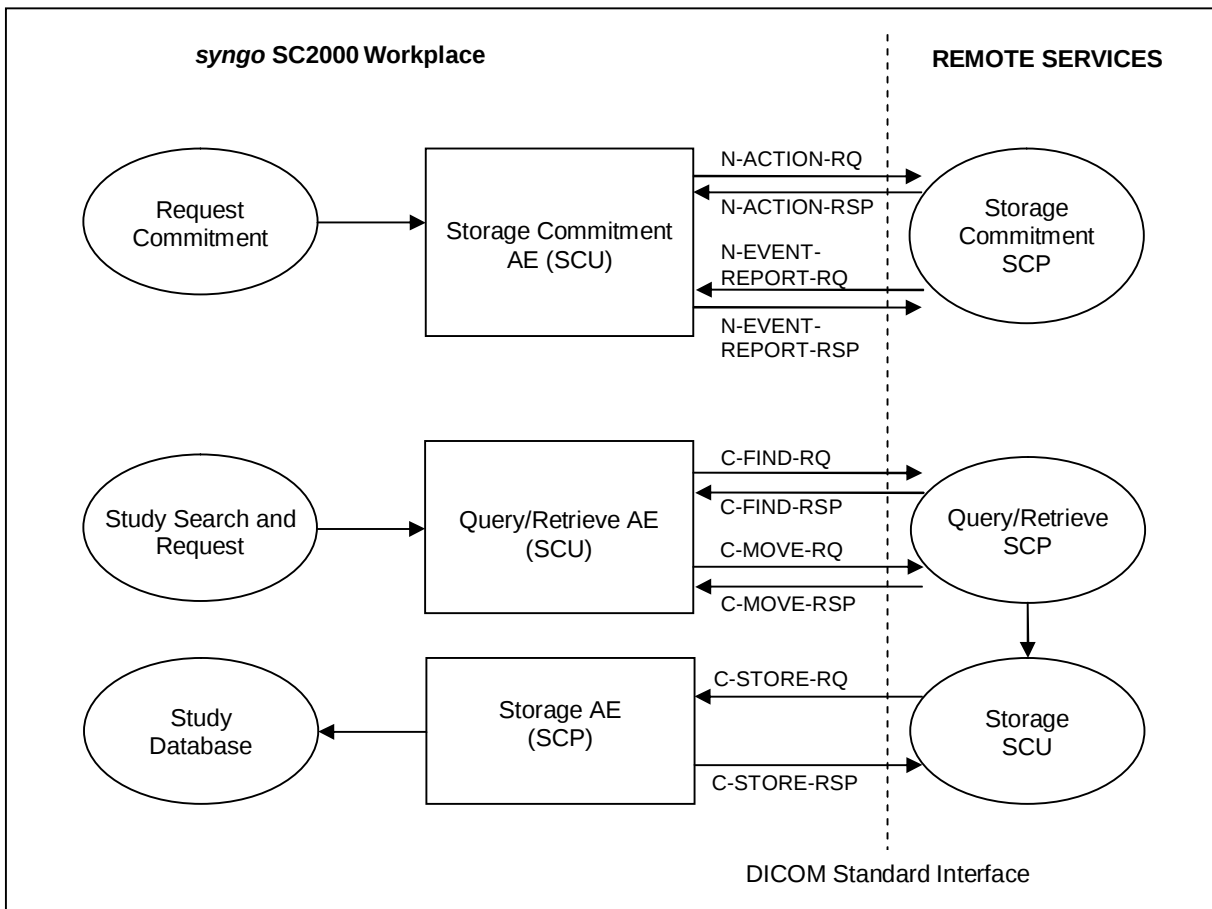


Figure 4-2. Functional Overview (Continued)

## 4.1.2 Functional Definition of AE's

The SCP components of the SC2000 Workplace operate as background server processes. They exist as soon as the system is powered up and wait for association requests. Upon accepting an association with a negotiated Presentation Context they start to receive and process the request described in the following sections.

### 4.1.2.1 Verification AE

The DICOM verification service can be used for diagnostic purposes. When used as a diagnostic tool, Verification will return the following messages to the user:

- C-Echo discovery result: Succeeded
- C-Echo discover result: Failed

Verification is available for each service configuration accessed through the Network/Printing pages of User Configuration:

- Store Configuration
- Storage Commitment Configuration
- Query Retrieve Configuration

The SC2000 Workplace supports the Verification service as a SCP and SCU. As a SCU, Verification is activated when the C-Echo button is selected on a service configuration page.

#### **4.1.2.2 Storage AE**

The SC2000 Workplace acts as SCU and SCP for the C-STORE DICOM network service.

As an SCU, the SC2000 Workplace Storage Application Entity originates associations for transfer of DICOM Ultrasound single frame images, multi-frame images, raw data objects, and Comprehensive Structured Reports to remote Application Entities.

The system supports automatic and manual storage of captured objects. Manual transfers can be initiated through the export dialog on the Data View UI. If configured for automatic transfer, the system can either transfer objects “in progress” or “on study close”:

- The system automatically stores an image as soon as it is captured and saved to the local disk while the study is currently open and in-progress.
- The system automatically stores all the images belonging to the current study as it closes.

The “in-progress” method distributes the network load over time. The “on study close” method lets the user store studies more accurately in the server. During review of a study, undesired images may be deleted before the study is closed.

In the event of a network failure during a background store, the Storage SCU maintains a queue of failed C-STORE requests. These are periodically retried subsequent to the end of the study. The queue is also retried upon power cycling of the SC2000 Workplace.

The storage request consists of data describing the composite image objects selected for storage and the destination AET. An association is negotiated with the destination AE and the image data is transferred using the C-STORE DIMSE Service. The transfer status is reported to the initiator of the Storage request.

As an SCP, the SC2000 Workplace Application Entity accepts storage requests from configured DICOM nodes and stores received objects into the local database. The C-STORE DIMSE service is used for storing the images.

#### **4.1.2.3 Storage Commitment AE**

The SC2000 Workplace serves as a SCU for the DICOM Storage Commitment service. Upon successful completion of a storage job, the system uses the N-ACTION DIMSE Service to request storage commitment from a DICOM storage SCP. This can either be the same as the storage destination or storage commitment can be requested from a different server depending on the system configuration.

The user configures Storage Commitment from the Networking/Printing pages of the User Configuration. The SC2000 Workplace requests commitment of images and structured reports and, upon successful acknowledgement from the storage server, marks the study on the system hard drive as “Archived” (AD). Storage Commitment Request is always sent in an additional Association.

#### **4.1.2.4 Query/Retrieve AE**

The query/retrieve service class defines an application-level class of services which facilitates the management of images and patient data against the well-defined information model of DICOM and allows a DICOM AE to retrieve images from a remote DICOM node or to request a remote DICOM AE to initiate a transfer of images to another DICOM AE. The SC2000 Workplace DICOM query/retrieve application supports the query/retrieve services as an SCU.

The Query SCU initiates a C-FIND request to the remote SCP and is invoked directly by the user, using the query parameters entered in the Data View UI. The remote SCP returns a list of responses with defined data, which are displayed to the user. The user can decide to start retrieval or to issue another query.

The SC2000 Workplace supports

- the Study Root Query Model.

As the Move SCU, the system initiates a C-MOVE request to the remote Retrieve SCP. The remote Retrieve SCP in turn starts C-STORE suboperations to the Storage SCP.

### 4.1.3 Sequencing of Real-World Activities

This section describes the sequencing of Real-World Activities performed by the Application Entities using a UML sequence diagram. Real-World Activities are depicted as vertical bars and arrows show the events exchanged between them.

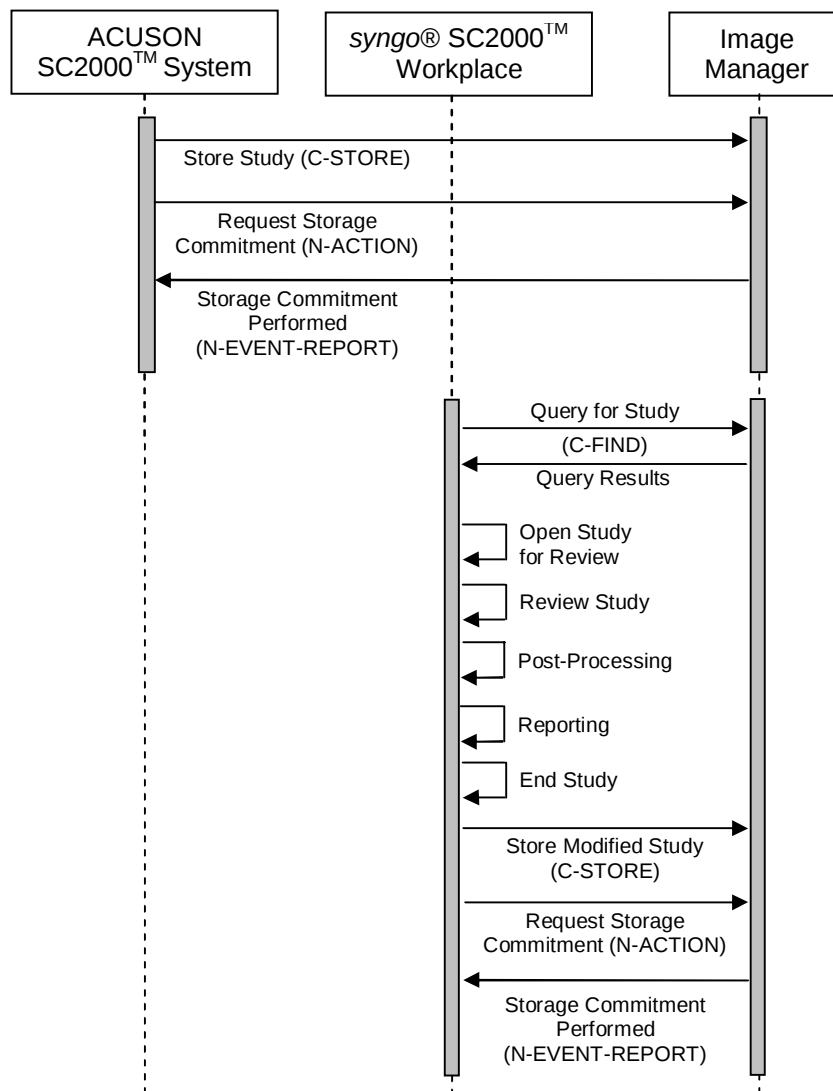
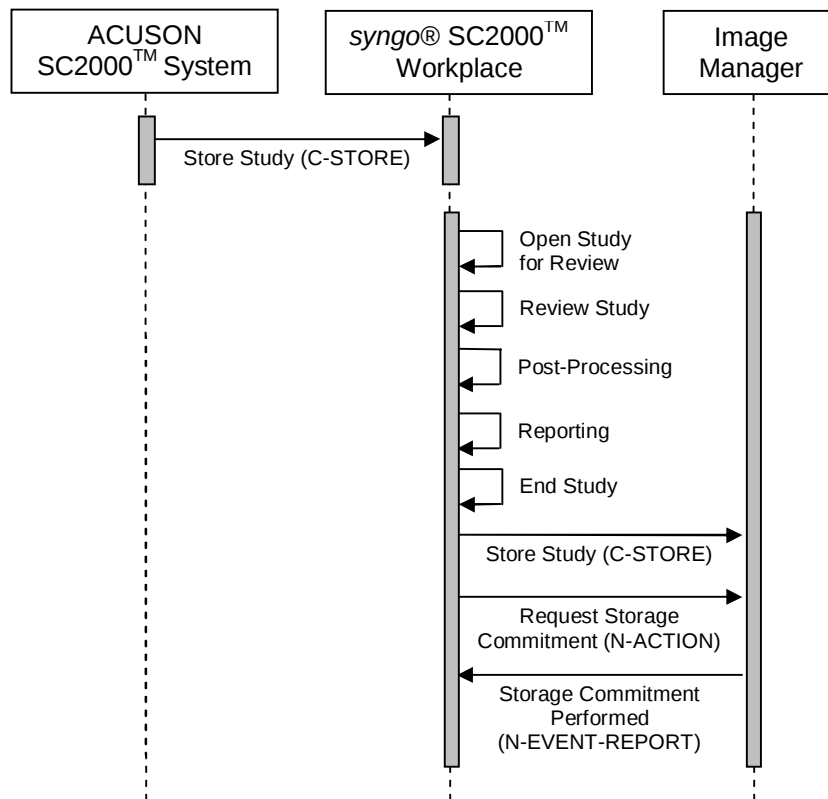


Figure 4-3. Sequence Diagram for Real-World Activities



**Figure 4-4. Sequence Diagram for Real-World Activities (continued)**

## 4.2 AE Specifications

### 4.2.1 Storage AE

#### 4.2.1.1 SOP Classes

**Table 4-1:  
SOP Classes for Storage AE**

| SOP Class Name                       | SOP Class UID                 | User of Service (SCU) | Provider of Service (SCP) |
|--------------------------------------|-------------------------------|-----------------------|---------------------------|
| <b>Supported Storage SOP Classes</b> |                               |                       |                           |
| Ultrasound Image Storage             | 1.2.840.10008.5.1.4.1.1.6.1   | Yes                   | Yes                       |
| Ultrasound Multi-frame Image Storage | 1.2.840.10008.5.1.4.1.1.3.1   | Yes                   | Yes                       |
| Secondary Capture Image Storage      | 1.2.840.10008.5.1.4.1.1.7     | Yes                   | Yes                       |
| Comprehensive SR                     | 1.2.840.10008.5.1.4.1.1.88.33 | Yes                   | Yes                       |
| Raw Data Storage                     | 1.2.840.10008.5.1.4.1.1.66    | Yes                   | Yes                       |

#### 4.2.1.2 Association Policies

##### 4.2.1.2.1 General

**Table 4-2:**  
**DICOM Application Context**

|                                 |                       |
|---------------------------------|-----------------------|
| <b>Application Context Name</b> | 1.2.840.10008.3.1.1.1 |
|---------------------------------|-----------------------|

##### 4.2.1.2.2 Number of Associations

**Table 4-3:**  
**Number of Associations as an Association Initiator for Storage AE**

|                                                    |    |
|----------------------------------------------------|----|
| <b>Maximum number of simultaneous associations</b> | 10 |
|----------------------------------------------------|----|

**Table 4-4:**  
**Number of Associations as an Association Acceptor for Storage AE**

|                                                    |                                             |
|----------------------------------------------------|---------------------------------------------|
| <b>Maximum number of simultaneous associations</b> | Configurable between 1 and 4,<br>default: 4 |
|----------------------------------------------------|---------------------------------------------|

##### 4.2.1.2.3 Asynchronous Nature

The SC2000 Workplace supports asynchronous communication (multiple outstanding transactions over a single association). On the SCU side, the Window size proposed is infinite. On the SCP side, any non-infinite maximum size will be accepted.

**Table 4-5:**  
**Asynchronous Nature as an Association Initiator for Storage AE**

|                                                                |          |
|----------------------------------------------------------------|----------|
| <b>Maximum number of outstanding asynchronous transactions</b> | Infinite |
|----------------------------------------------------------------|----------|

##### 4.2.1.2.4 Implementation Identifying Information

**Table 4-6:**  
**DICOM Implementation Class and Version for Storage AE**

|                                    |                               |
|------------------------------------|-------------------------------|
| <b>Implementation Class UID</b>    | 1.3.12.2.1107.5.99.3.20080101 |
| <b>Implementation Version Name</b> | SIEMENS                       |

**4.2.1.3 Association Initiation Policy (Storage SCU)**

The SC2000 Workplace initiates associations while processing the service operations and internal messages as shown below.

| Operation or Real-World Activity | Association for |
|----------------------------------|-----------------|
| Send Instance                    | C-STORE, C-ECHO |

**4.2.1.3.1 Activity “Send To”****4.2.1.3.1.1 Description and Sequencing of Activities**

Storage of a DICOM object is either triggered by a C-MOVE request initiated by an external DICOM AE to the SC2000 Workplace or internally in the SC2000 Workplace.

If an association to a remote Application Entity could successfully be established, each image will be transferred one after another via the same open association.

The automatic retry mechanism is configurable. The user can configure the number of retries as well as the time interval between two retries.

Retry is done if:

- The network connection has been lost from the SCU perspective. In this case, retry is performed as soon as the network connection is available again.
- The partner is not reachable for other reasons (e.g. partner node has broken down). For this case, a (global, configurable) timeout has been implemented after which retry is performed.

**4.2.1.3.1.2 Proposed Presentation Contexts**

For all supported images (see SOP Classes in Table 4-1: SOP Classes for Storage AE), the following Transfer Syntaxes are supported.

**Table 4-7:**  
**Proposed Presentation Contexts for Storage AE**

| Abstract Syntax                                       |                               | Transfer Syntax           |                        |
|-------------------------------------------------------|-------------------------------|---------------------------|------------------------|
| Name                                                  | UID                           | Name List                 | UID List               |
| Ultrasound Image Storage                              | 1.2.840.10008.5.1.4.1.1.6.1   | Implicit VR Little Endian | 1.2.840.10008.1.2      |
|                                                       |                               | Explicit VR Little Endian | 1.2.840.10008.1.2.1    |
|                                                       |                               | Explicit VR Big Endian    | 1.2.840.10008.1.2.2    |
|                                                       |                               | JPEG Lossless             | 1.2.840.10008.1.2.4.70 |
| Secondary Capture Image Storage                       | 1.2.840.10008.5.1.4.1.1.7     | Implicit VR Little Endian | 1.2.840.10008.1.2      |
|                                                       |                               | Explicit VR Little Endian | 1.2.840.10008.1.2.1    |
| Ultrasound Multi-frame Image Storage (Clips)          | 1.2.840.10008.5.1.4.1.1.3.1   | JPEG Lossy (Baseline)     | 1.2.840.10008.1.2.4.50 |
|                                                       |                               | Implicit VR Little Endian | 1.2.840.10008.1.2      |
|                                                       |                               | Explicit VR Little Endian | 1.2.840.10008.1.2.1    |
| Ultrasound Raw Data Storage (3D volumetric data sets) | 1.2.840.10008.5.1.4.1.1.66    | Implicit VR Little Endian | 1.2.840.10008.1.2      |
|                                                       |                               | Explicit VR Little Endian | 1.2.840.10008.1.2.1    |
| Comprehensive SR                                      | 1.2.840.10008.5.1.4.1.1.88.33 | Implicit VR Little Endian | 1.2.840.10008.1.2      |
|                                                       |                               | Explicit VR Little Endian | 1.2.840.10008.1.2.1    |

**4.2.1.3.1.3 Photometric Interpretation**

Photometric Interpretation (color mode of the pixel image data) is not a negotiable parameter in DICOM 3.0. The Photometric Interpretation Attribute (0028,0004) is set depending on the transfer syntax and the system configuration.

**Table 4-8:  
Photometric Interpretation**

| SOP Class                                    |                             | Transfer Syntax           |                        | Photometric Interpretation |
|----------------------------------------------|-----------------------------|---------------------------|------------------------|----------------------------|
| Name                                         | UID                         | Name List                 | UID List               |                            |
| Ultrasound Image Storage                     | 1.2.840.10008.5.1.4.1.1.6.1 | Implicit VR Little Endian | 1.2.840.10008.1.2      | RGB                        |
|                                              |                             | Explicit VR Little Endian | 1.2.840.10008.1.2.1    |                            |
|                                              |                             | JPEG Lossless             | 1.2.840.10008.1.2.4.70 |                            |
| Secondary Capture Image Storage              | 1.2.840.10008.5.1.4.1.1.7   | Implicit VR Little Endian | 1.2.840.10008.1.2      | RGB                        |
|                                              |                             | Explicit VR Little Endian | 1.2.840.10008.1.2.1    |                            |
| Ultrasound Multi-frame Image Storage (Clips) | 1.2.840.10008.5.1.4.1.1.3.1 | JPEG Lossy (Baseline)     | 1.2.840.10008.1.2.4.50 | YBR_FULL_422               |
|                                              |                             | Implicit VR Little Endian | 1.2.840.10008.1.2      | RGB                        |

**4.2.1.3.1.4 SOP Specific Conformance to SOP Classes**

The SC2000 Workplace will not add or change private attributes, even if case objects are compressed or the image header is updated according to IHE [2] Patient Information Reconciliation.

Refer to section 8.1.1, Created SOP Instances, for a detailed list of attributes.

**Table 4-9:  
DICOM Command Response Status Handling Behavior**

| Service Status | Further Meaning                              | Error Code         | Behavior                                                                                                 |
|----------------|----------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------|
| Error          | Sending partially or completely failed       | Any none null Code | Failure reported to user and storage job is cancelled.<br>(percentage of transferred instances is shown) |
| Success        | Image is successfully stored on file system. | 0000               | Success reported to user                                                                                 |

**Table 4-10:  
DICOM Command Communication Failure Behavior**

| Exception           | Behavior                                                                                                                       |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Timeout             | Failure reported to user (Timeout configurable; default 30s). The system retries according to the configured retry parameters. |
| Association Aborted | Failure reported to user and the storage job is cancelled.                                                                     |

#### 4.2.1.4 Association Acceptance Policy

The SC2000 Workplace attempts to accept a new association for

- DIMSE C-STORE

service operations.

Generally, associations are accepted if all of the following conditions are true:

- The "called AET" matches one of the configured Application Entity Titles of the SC2000 Workplace.
- The "calling AET" is allowed to connect to SC2000 Workplace. This check can be disabled.
- The maximum number of incoming associations is not reached.
- At least one Proposed Presentation Context is supported.

If a Proposed Presentation Context contains more than one Transfer Syntax, the one in the following priority list is chosen (if applicable for the SOP class):

- 1) Explicit Value Representation Little Endian
- 2) Implicit Value Representation Little Endian
- 3) Explicit Value Representation Big Endian
- 4) JPEG Baseline (Process 1)
- 5) JPEG Extended (Process 2 & 4)
- 6) JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14)
- 7) JPEG 2000 Image Compression (Lossless Only)
- 8) JPEG 2000 Image Compression
- 9) RLE Lossless

##### 4.2.1.4.1 Activity "Receive Instances"

###### 4.2.1.4.1.1 Description and Sequencing of Activities

The SC2000 Workplace receiving process will accept an association, receive any images transmitted on that association and store the images on disk. It will store some header attributes in the database in order to allow clients to query these attributes.

###### 4.2.1.4.1.2 Accepted Presentation Contexts

|                        |                                                                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.2.840.10008.1.2.2    | Explicit Value Representation Big Endian                                                                                                              |
| 1.2.840.10008.1.2.1    | Explicit Value Representation Little Endian                                                                                                           |
| 1.2.840.10008.1.2      | Implicit Value Representation Little Endian: Default Transfer Syntax for DICOM                                                                        |
| 1.2.840.10008.1.2.4.50 | JPEG Baseline (Process 1): Default Transfer Syntax for Lossy JPEG 8 Bit Image Compression                                                             |
| 1.2.840.10008.1.2.4.70 | JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1]): Default Transfer Syntax for Lossless JPEG Image Compression |

###### 4.2.1.4.1.3 SOP Specific Conformance to SOP Classes

In case of a successful C-STORE operation, the image has successfully been written on disk either in Explicit Little Endian format or in the compression format received.

The Storage AE of the SC2000 Workplace returns the status "success" when the data is stored to disk and a minimal image header validation has been performed.

The following header attributes must be available and filled:

- Patient Name,
- Study Instance UID,
- Series Instance UID and
- SOP Instance UID

**Table 4-11:**  
**Storage C-STORE Response Status**

| Service Status | Further Meaning | Error Code | Reason                                                                                                  |
|----------------|-----------------|------------|---------------------------------------------------------------------------------------------------------|
| Success        | Success         | 0x0000     | Image received correctly<br>(success notification is done after receiving, before indexing and storing) |

#### 4.2.1.4.1.4 Other SOP Specific Behavior

- If an image is received that is already stored in the database – identified by the SOP Instance UID – the new image will be ignored. The existing instance is not superseded.
- The Patient Quadruplet (Patient's Name, Patient ID, Date of Birth, Patient Sex) is internally used for unique identification. The Patient ID is specified as a "type 2" attribute by DICOM. Therefore the attribute must be in the message but it may be empty. If the Patient ID is missing, it will be generated and inserted to the index by the SC2000 Workplace for internal purposes.

## 4.2.2 Storage Commitment AE

### 4.2.2.1 SOP Classes

**Table 4-12:**  
**SOP Classes for Storage Commitment AE**

| SOP Class Name                                  | SOP Class UID        | User of Service (SCU) | Provider of Service (SCP) |
|-------------------------------------------------|----------------------|-----------------------|---------------------------|
| <b>Supported Storage Commitment SOP Classes</b> |                      |                       |                           |
| Storage Commitment Push Model                   | 1.2.840.10008.1.20.1 | Yes                   | No                        |

### 4.2.2.2 Association Policies

#### 4.2.2.2.1 General

**Table 4-13:**  
**DICOM Application Context**

|                                 |                       |
|---------------------------------|-----------------------|
| <b>Application Context Name</b> | 1.2.840.10008.3.1.1.1 |
|---------------------------------|-----------------------|

**4.2.2.2.2 Number of Associations**

**Table 4-14:**  
**Number of Associations as an Association Initiator for**  
**Storage Commitment AE**

|                                                    |           |
|----------------------------------------------------|-----------|
| <b>Maximum number of simultaneous associations</b> | Unlimited |
|----------------------------------------------------|-----------|

**Table 4-15:**  
**Number of Associations as an Association Acceptor for**  
**Storage Commitment AE**

|                                                    |                                             |
|----------------------------------------------------|---------------------------------------------|
| <b>Maximum number of simultaneous associations</b> | Configurable between 1 and 4,<br>default: 4 |
|----------------------------------------------------|---------------------------------------------|

**4.2.2.2.3 Asynchronous Nature**

The SC2000 Workplace supports asynchronous communication (multiple outstanding transactions over a single association). On the SCU side the Window size proposed is infinite. On the SCP Side any non-infinite maximum size will be accepted.

**Table 4-16:**  
**Asynchronous Nature as an Association Initiator for**  
**Storage Commitment AE**

|                                                                |          |
|----------------------------------------------------------------|----------|
| <b>Maximum number of outstanding asynchronous transactions</b> | Infinite |
|----------------------------------------------------------------|----------|

**4.2.2.2.4 Implementation Identifying Information**

**Table 4-17:**  
**DICOM Implementation Class and Version for**  
**Storage Commitment AE**

|                                    |                               |
|------------------------------------|-------------------------------|
| <b>Implementation Class UID</b>    | 1.3.12.2.1107.5.99.3.20080101 |
| <b>Implementation Version Name</b> | SIEMENS                       |

**4.2.2.3 Association Initiation Policy (Storage Commitment SCU)**

The SC2000 Workplace initiates associations while processing the service operations and internal messages as shown below.

| <b>Operation or Real-World Activity</b> | <b>Association for</b>     |
|-----------------------------------------|----------------------------|
| Storage Commitment                      | N-ACTION<br>N-EVENT-REPORT |

**4.2.2.3.1 Activity “Send Initial Storage Commitment”****4.2.2.3.1.1 Description and Sequencing of Activities**

After Sending Images to the Archive, the SC2000 Workplace will initiate a Storage Commitment request if configured. The SC2000 Workplace initiates a new association in order to send the N-ACTION-RQ to the SCP.

**4.2.2.3.1.2 Proposed Presentation Contexts**

**Table 4-18:**  
**Proposed Presentation Contexts for Storage Commitment AE**

| Presentation Context Table    |                      |                                                                                  |                                                                 |      |                      |
|-------------------------------|----------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|------|----------------------|
| Abstract Syntax               |                      | Transfer Syntax                                                                  |                                                                 | Role | Extended Negotiation |
| Name                          | UID                  | Name List                                                                        | UID List                                                        |      |                      |
| Storage Commitment Push Model | 1.2.840.10008.1.20.1 | Implicit VR Little Endian<br>Explicit VR Little Endian<br>Explicit VR Big Endian | 1.2.840.10008.1.2<br>1.2.840.10008.1.2.1<br>1.2.840.10008.1.2.2 | SCU  | None                 |

There is no extended negotiation as an SCU.

**4.2.2.3.1.3 SOP Specific Conformance to SOP Classes**

**Table 4-19:**  
**DICOM Command Response Status Handling Behavior**

| Service Status | Further Meaning                   | Error Code         | Behavior                 |
|----------------|-----------------------------------|--------------------|--------------------------|
| Error          | No Retry on Failure               | Any none null Code | Failure reported to user |
| Success        | Storage Commitment Reply noticed. | 0000               | Success reported to user |

**Table 4-20:**  
**DICOM Command Communication Failure Behavior**

| Exception           | Behavior                 |
|---------------------|--------------------------|
| Timeout             | Failure reported to user |
| Association Aborted | Failure reported to user |

**4.2.2.3.2 Activity “Send Reply to Commitment Requests on separate associations”****4.2.2.3.2.1 Description and Sequencing of Activities**

The SC2000 Workplace system accepts the N-EVENT-REPORT-RQ on a separate association from the N-ACTION-RQ.

**4.2.2.3.2.2 Proposed Presentation Contexts****Table 4-21:**  
**Proposed Presentation Contexts for Storage Commitment AE**

| Presentation Context Table    |                      |                                                                                  |                                                                 |      |                      |
|-------------------------------|----------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|------|----------------------|
| Abstract Syntax               |                      | Transfer Syntax                                                                  |                                                                 | Role | Extended Negotiation |
| Name                          | UID                  | Name List                                                                        | UID List                                                        |      |                      |
| Storage Commitment Push Model | 1.2.840.10008.1.20.1 | Implicit VR Little Endian<br>Explicit VR Little Endian<br>Explicit VR Big Endian | 1.2.840.10008.1.2<br>1.2.840.10008.1.2.1<br>1.2.840.10008.1.2.2 | SCP  | None                 |

There is no extended negotiation as an SCU.

**4.2.2.3.2.3 SOP Specific Conformance for SOP Classes****Table 4-22:**  
**DICOM Command Response Status Handling Behavior**

| Service Status | Further Meaning                   | Error Code         | Behavior                                 |
|----------------|-----------------------------------|--------------------|------------------------------------------|
| Error          | Storage Commitment Reply ignored. | Any none null Code | Storage Commitment will not be repeated. |
| Success        | Storage Commitment Reply noticed. | 0000               | Success reported to user.                |

There is no special failure behavior.

**4.2.2.4 Association Acceptance Policy**

Storage Commitment AE does not accept Association requests.

**4.2.3 Query AE****4.2.3.1 SOP Classes**

The SC2000 Workplace provides Standard Conformance to the following DICOM V3.0 SOP Classes as SCP/SCU.

**Table 4-23:**  
**SOP Classes for Query AE**

| SOP Class Name                                     | SOP Class UID               | User of Service (SCU) | Provider of Service (SCP) |
|----------------------------------------------------|-----------------------------|-----------------------|---------------------------|
| <b>Supported Query SOP Classes</b>                 |                             |                       |                           |
| Study Root Query/Retrieve Information Model - FIND | 1.2.840.10008.5.1.4.1.2.2.1 | Yes                   | No                        |

**4.2.3.2 Association Policies****4.2.3.2.1 General****Table 4-24:  
DICOM Application Context**

|                                 |                       |
|---------------------------------|-----------------------|
| <b>Application Context Name</b> | 1.2.840.10008.3.1.1.1 |
|---------------------------------|-----------------------|

**4.2.3.2.2 Number of Associations****Table 4-25:  
Number of Associations as an Association Initiator for Query AE**

|                                                    |           |
|----------------------------------------------------|-----------|
| <b>Maximum number of simultaneous associations</b> | Unlimited |
|----------------------------------------------------|-----------|

**Table 4-26:  
Number of Associations as an Association Acceptor for Query AE**

|                                                    |                                             |
|----------------------------------------------------|---------------------------------------------|
| <b>Maximum number of simultaneous associations</b> | Configurable between 1 and 4,<br>default: 4 |
|----------------------------------------------------|---------------------------------------------|

**4.2.3.2.3 Asynchronous Nature**

The SC2000 Workplace supports asynchronous communication (multiple outstanding transactions over a single association). On the SCU side the Window size proposed is infinite. On the SCP Side any non-infinite maximum size will be accepted.

**Table 4-27:  
Asynchronous Nature as an Association Initiator for Query AE**

|                                                                |          |
|----------------------------------------------------------------|----------|
| <b>Maximum number of outstanding asynchronous transactions</b> | Infinite |
|----------------------------------------------------------------|----------|

**4.2.3.2.4 Implementation Identifying Information****Table 4-28:  
DICOM Implementation Class and Version for Query AE**

|                                    |                               |
|------------------------------------|-------------------------------|
| <b>Implementation Class UID</b>    | 1.3.12.2.1107.5.99.3.20080101 |
| <b>Implementation Version Name</b> | SIEMENS                       |

**4.2.3.3 Association Initiation Policy (Query SCU)**

The SC2000 Workplace will initiate new associations for the following operations as an SCU.

| <b>Operation or Real-World Activity</b> | <b>Association for</b> |
|-----------------------------------------|------------------------|
| Querying a Remote Node                  | C-FIND                 |

**4.2.3.3.1 Activity “Querying a Remote Node”****4.2.3.3.1.1 Description and Sequencing of Activities**

The associated Real-World activity is a C-Find request initiated by the user of the SC2000 Workplace. The user specifies some attributes the system should use to query its database. If the query user successfully establishes an association to the remote Application Entity, it will send a C-Find request (according to the query model) and will then return the results to the application.

**4.2.3.3.1.2 Proposed Presentation Contexts**

The SC2000 Workplace will propose Presentation Contexts as shown in the following table.

**Table 4-29:**  
**Proposed Presentation Contexts for Query AE**

| Presentation Context Table                                |                             |                                                                                  |                                                                 |      |                      |
|-----------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|------|----------------------|
| Abstract Syntax                                           |                             | Transfer Syntax                                                                  |                                                                 | Role | Extended Negotiation |
| Name                                                      | UID                         | Name List                                                                        | UID List                                                        |      |                      |
| Study Root Query/<br>Retrieve Information<br>Model - FIND | 1.2.840.10008.5.1.4.1.2.2.1 | Implicit VR Little Endian<br>Explicit VR Big Endian<br>Explicit VR Little Endian | 1.2.840.10008.1.2<br>1.2.840.10008.1.2.2<br>1.2.840.10008.1.2.1 | SCU  | No                   |

**4.2.3.3.1.3 SOP Specific Conformance to SOP Classes**

Refer to section 8.1.1, Created SOP Instances, for a detailed list of attributes.

The SC2000 Workplace checks for the following status codes in the Query SCP's C-Find-Response.

**Table 4-30:**  
**DICOM Command Response Status Handling Behavior**

| Service Status | Further Meaning                 | Error Code         | Behavior                 |
|----------------|---------------------------------|--------------------|--------------------------|
| Error          | No Auto Retry on failure        | Any none null Code | Failure reported to user |
| Success        | Success logged on the job queue | 0000               | Success reported to user |

**Table 4-31:**  
**DICOM Command Communication Failure Behavior**

| Exception           | Behavior                 |
|---------------------|--------------------------|
| Timeout             | Failure reported to user |
| Association Aborted | Failure reported to user |

The SC2000 Workplace supports the following query levels:

- Study

#### 4.2.3.4 Association Acceptance Policy

Query AE does not accept Association requests.

### 4.2.4 Retrieve AE

#### 4.2.4.1 SOP Classes

This Application Entity provides Standard Conformance to the following SOP Classes.

**Table 4-32:**  
**SOP Classes for Retrieve AE**

| SOP Class Name                                     | SOP Class UID               | User of Service (SCU) | Provider of Service (SCP) |
|----------------------------------------------------|-----------------------------|-----------------------|---------------------------|
| <b>Supported Query/Retrieve SOP Classes</b>        |                             |                       |                           |
| Study Root Query/Retrieve Information Model - MOVE | 1.2.840.10008.5.1.4.1.2.2.2 | Yes                   | No                        |

#### 4.2.4.2 Association Policies

##### 4.2.4.2.1 General

**Table 4-33:**  
**DICOM Application Context**

|                                 |                       |
|---------------------------------|-----------------------|
| <b>Application Context Name</b> | 1.2.840.10008.3.1.1.1 |
|---------------------------------|-----------------------|

##### 4.2.4.2.2 Number of Associations

**Table 4-34:**  
**Number of Associations as an Association Initiator for Retrieve AE**

|                                                    |           |
|----------------------------------------------------|-----------|
| <b>Maximum number of simultaneous associations</b> | Unlimited |
|----------------------------------------------------|-----------|

**Table 4-35:**  
**Number of Associations as an Association Acceptor for Retrieve AE**

|                                                    |                                          |
|----------------------------------------------------|------------------------------------------|
| <b>Maximum number of simultaneous associations</b> | Configurable between 1 and 4, default: 4 |
|----------------------------------------------------|------------------------------------------|

**4.2.4.2.3 Asynchronous Nature**

The SC2000 Workplace supports asynchronous communication (multiple outstanding transactions over a single association). On the SCU side the Window size proposed is infinite. On the SCP Side any non-infinite maximum size will be accepted.

**Table 4-36:**  
**Asynchronous Nature as an Association Initiator for Retrieve AE**

|                                                                |          |
|----------------------------------------------------------------|----------|
| <b>Maximum number of outstanding asynchronous transactions</b> | Infinite |
|----------------------------------------------------------------|----------|

**4.2.4.2.4 Implementation Identifying Information**

**Table 4-37:**  
**DICOM Implementation Class and Version for Retrieve AE**

|                                    |                               |
|------------------------------------|-------------------------------|
| <b>Implementation Class UID</b>    | 1.3.12.2.1107.5.99.3.20080101 |
| <b>Implementation Version Name</b> | SIEMENS                       |

**4.2.4.3 Association Initiation Policy**

The SC2000 Workplace Retrieve AE sends a C-MOVE-RQ to an SCP node to retrieve images.

**4.2.4.3.1 Activity “Move SCU”****4.2.4.3.1.1 Description and Sequencing of Activities**

The C-MOVE-RQs are used to retrieve the referenced instances. The Retrieve AE supports the query model Study Root.

**4.2.4.3.1.2 Accepted Presentation Contexts**

**Table 4-38:**  
**Proposed Presentation Contexts for Retrieve AE and Activity MOVE SCU**

| <b>Presentation Context Table</b>            |                             |                                                                                  |                                                                 |             |                             |
|----------------------------------------------|-----------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------|-----------------------------|
| <b>Abstract Syntax</b>                       |                             | <b>Transfer Syntax</b>                                                           |                                                                 | <b>Role</b> | <b>Extended Negotiation</b> |
| <b>Name</b>                                  | <b>UID</b>                  | <b>Name List</b>                                                                 | <b>UID List</b>                                                 |             |                             |
| Study Root<br>Query/Retrieve Model –<br>MOVE | 1.2.840.10008.5.1.4.1.2.2.2 | Implicit VR Little Endian<br>Explicit VR Little Endian<br>Explicit VR Big Endian | 1.2.840.10008.1.2<br>1.2.840.10008.1.2.1<br>1.2.840.10008.1.2.2 | SCU         | No                          |

There is no extended negotiation as an SCU.

#### 4.2.4.3.1.3 SOP Specific Conformance to Move SCU Classes

At association establishment time, the C-MOVE presentation context shall be negotiated. When the C-MOVE-RQ is processed, the Move Destination attribute (receiver of images) is ignored. However, the Move Destination AE must conform to the DICOM conventions (value representation AE).

**Table 4-39:**  
**DICOM Command Response Status Handling Behavior**

| Service Status | Further Meaning                 | Error Code         | Behavior                                                                |
|----------------|---------------------------------|--------------------|-------------------------------------------------------------------------|
| Error          | No Auto retry on failure        | Any none null Code | Failure reported to user (percentage of transferred instances is shown) |
| Success        | Success logged on the job queue | 0000               | Success reported to user                                                |

**Table 4-40:**  
**DICOM Command Communication Failure Behavior**

| Exception           | Behavior                 |
|---------------------|--------------------------|
| Timeout             | Failure reported to user |
| Association Aborted | Failure reported to user |

#### 4.2.4.4 Association Acceptance Policy

Retrieve AE does not accept Association requests.

### 4.3 Network Interfaces

#### 4.3.1 Physical Network Interface

The SC2000 Workplace is independent from the physical medium over which TCP/IP executes; it inherits this from the OS system upon which it executes.

#### 4.3.2 Additional Protocols

None.

#### 4.3.3 IPv4 and IPv6 Support

IPv4 supported, IPv6 not supported.

### 4.4 Configuration

DICOM and networking parameters can be configured for both the local SC2000 Workplace and remote DICOM Service Class Providers through the User Configuration – Networking/Printing pages.

#### **4.4.1 Local Host - TCP/IP and General**

The SC2000 Workplace's local network parameters are configurable. The following parameters can be configured for the SC2000 Workplace:

- Host Name
- IP address
- Network IP mask
- Router/Gateway IP addresses
- DICOM Storage Application Entity Titles
- Printers

##### **4.4.1.1 DICOM Storage Configuration**

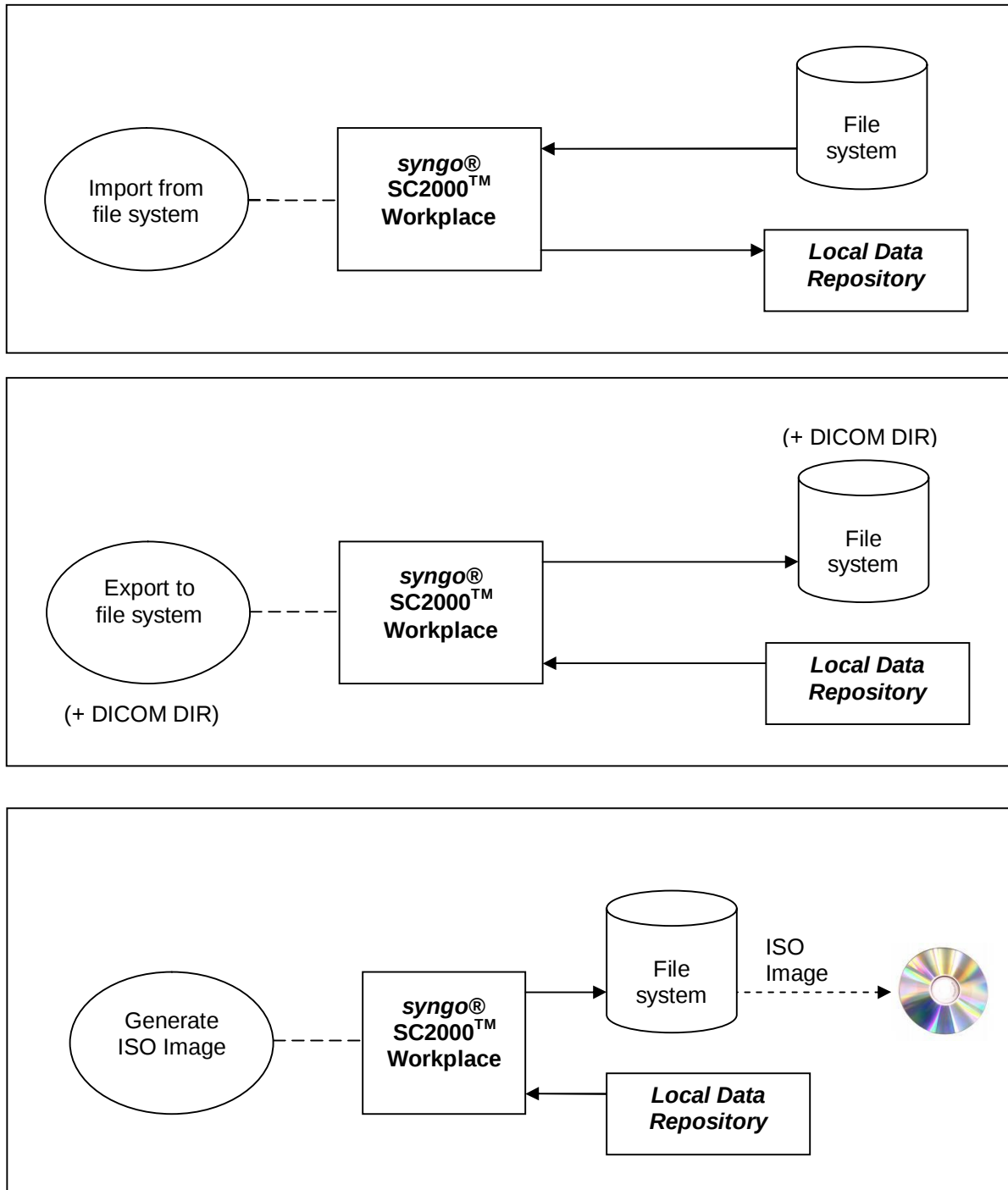
Remote DICOM Storage and Storage Commitment Service Class Providers are configured through the Store Configuration or Storage Commitment Configuration of the User Configuration – Networking/Printing pages. The following parameters can be configured for each device:

- Host name
- IP address
- AET - Application Entity Title
- Port number
- Proposed transfer syntaxes

## 5 MEDIA INTERCHANGE

### 5.1 Implementation Models

#### 5.1.1 Application Data Flow Diagram



**Figure 5-1. Media Application Data Flow Diagram**

The SC2000 Workplace provides the functionality to Import or Export DICOM Instances to and from the File System. During exportation, a DICOMDIR may also be generated. A complete ISO Image ready-to-burn can be generated. All SOP Classes defined in Table 4-1: SOP Classes for Storage AE are supported for the Import/Export functionality.

### 5.1.2 Functional definitions of AEs

The SC2000 Workplace is capable of

- creating a new File-set in the File System (Export to ...)
- importing SOP Instances from the File System onto local storage

### 5.1.3 Sequencing of Real-World Activities

Not applicable.

### 5.1.4 File Meta Information for Implementation Class and Version

**Table 5-1:**  
**Implementation Class/Version Name – Media Interchange**

|                               |                               |
|-------------------------------|-------------------------------|
| File Meta Information Version | 0x0001                        |
| Implementation Class UID      | 1.3.12.2.1107.5.99.3.20080101 |
| Implementation Version Name   | SIEMENS                       |

## 5.2 AE Specifications

### 5.2.1 Media Storage AE Specification

The SC2000 Workplace system Media Storage AE provides conformance to the following DICOM SOP Classes as an FSC. The following specifications apply to the AE.

When configuring an uncompressed Transfer Syntax, the STD-US and STD-GEN application profile classes will be extended to store instances of the following SOP classes in compressed format.

**Table 5-2:**  
**Application Profiles, Activities, and Roles for DICOM Exchange Media**

| Application Profiles Supported                      | Real World Activity | Role    |
|-----------------------------------------------------|---------------------|---------|
| STD-GEN-CDR<br>STD-US-SC-MF-CDR<br>STD-US-ID-MF-CDR | Create CD-R         | FSC/FSU |

## 5.2.2 Implementation Identifying Information

**Table 5-3:**  
**DICOM Implementation Class and Version for Media Storage AE**

|                                    |                            |
|------------------------------------|----------------------------|
| <b>Implementation Class UID</b>    | 1.3.12.2.1107.5.9.20080101 |
| <b>Implementation Version Name</b> | SIEMENS                    |

## 5.3 Media Storage Application Profile

### 5.3.1 DICOMDIR Keys

The DICOMDIR file will contain the following attributes for the levels Patient - Study - Series - Image (valid for all Application profiles described in this section).

**Table 5-4:**  
**DICOMDIR Keys**

| Attribute Name                                                   | Tag         | Type | Notes                                                                                         |
|------------------------------------------------------------------|-------------|------|-----------------------------------------------------------------------------------------------|
| <b>File-Set Identification</b>                                   |             |      |                                                                                               |
| File-set ID                                                      | (0004,1130) | 2    | Volume label of media                                                                         |
| <b>Directory Information</b>                                     |             |      |                                                                                               |
| Offset of the First Directory Record of the Root Directory Entry | (0004,1200) | 1    |                                                                                               |
| Offset of the Last Directory Record of the Root Directory Entity | (0004,1202) | 1    |                                                                                               |
| File-set Consistency Flag                                        | (0004,1212) | 1    | 0000H                                                                                         |
| Directory Record Sequence                                        | (0004,1220) | 2    |                                                                                               |
| > Offset of the Next Directory Record                            | (0004,1400) | 1C   |                                                                                               |
| > Record In-use flag                                             | (0004,1410) | 1C   | FFFFH                                                                                         |
| > Offset of Referenced Lower-Level Directory Entity              | (0004,1420) | 1C   |                                                                                               |
| > Directory Record Type                                          | (0004,1430) | 1C   | PATIENT, STUDY, SERIES, IMAGE, SR DOCUMENT, RAW DATA                                          |
| > Referenced File ID                                             | (0004,1500) | 1C   | contains the filename on media for the Directory Records of Type IMAGE, SR DOCUMENT, RAW DATA |
| > Referenced SOP Class UID in File                               | (0004,1510) | 1C   | for the Directory Records of Type IMAGE, SR DOCUMENT, RAW DATA                                |
| > Referenced SOP Instance UID in File                            | (0004,1511) | 1C   | for the Directory Records of Type IMAGE, SR DOCUMENT, RAW DATA                                |
| > Referenced Transfer Syntax UID in File                         | (0004,1512) | 1C   | for the Directory Records of Type IMAGE, SR DOCUMENT, RAW DATA                                |
| > Record Selection Keys                                          | see below   |      |                                                                                               |

| Attribute Name              | Tag         | Type | Notes                                                           |
|-----------------------------|-------------|------|-----------------------------------------------------------------|
| <b>Patient Keys</b>         |             |      | <b>Directory Record Type<br/>PATIENT</b>                        |
| Specific Character Set      | (0008,0005) | 1C   |                                                                 |
| Patient's Name              | (0010,0010) | 2    |                                                                 |
| Patient ID                  | (0010,0020) | 1    |                                                                 |
| Date Of Birth               | (0010,0030) | 3    |                                                                 |
| Patient's Sex               | (0010,0040) | 3    |                                                                 |
| <b>Study Keys</b>           |             |      | <b>Directory Record Type<br/>STUDY</b>                          |
| Specific Character Set      | (0008,0005) | 1C   |                                                                 |
| Study Date                  | (0008,0020) | 1    |                                                                 |
| Study Time                  | (0008,0030) | 1    |                                                                 |
| Accession Number            | (0008,0050) | 2    |                                                                 |
| Study Description           | (0008,1030) | 2    |                                                                 |
| Study Instance UID          | (0020,000D) | 1C   |                                                                 |
| Study ID                    | (0020,0010) | 1    | Will be generated automatically,<br>if not present. Value = "-" |
| <b>Series Keys</b>          |             |      | <b>Directory Record Type<br/>SERIES</b>                         |
| Specific Character Set      | (0008,0005) | 1C   |                                                                 |
| Series Date                 | (0008,0021) | 3    |                                                                 |
| Series Time                 | (0008,0031) | 3    |                                                                 |
| Modality                    | (0008,0060) | 1    |                                                                 |
| Institution name            | (0008,0080) | 3    |                                                                 |
| Institution Address         | (0008,0081) | 3    |                                                                 |
| Performing Physician's Name | (0008,1050) | 3    |                                                                 |
| Series Instance UID         | (0020,000E) | 1    |                                                                 |
| Series Number               | (0020,0011) | 1    |                                                                 |
| <b>Image Keys</b>           |             |      | <b>Directory Record Type IMAGE</b>                              |
| Specific Character Set      | (0008,0005) | 1C   |                                                                 |
| Image Type                  | (0008,0008) | 3    |                                                                 |
| SOP Class UID               | (0008,0016) | 3    |                                                                 |
| SOP Instance UID            | (0008,0018) | 3    |                                                                 |
| Content Date                | (0008,0023) | 3    |                                                                 |
| Content Time                | (0008,0033) | 3    |                                                                 |
| Acquisition Number          | (0020,0012) | 3    |                                                                 |
| Instance Number             | (0020,0013) | 1    |                                                                 |
| Rows                        | (0028,0010) | 3    |                                                                 |
| Columns                     | (0028,0011) | 3    |                                                                 |
| Image Position Patient      | (0020,0032) | 3    |                                                                 |
| Image Orientation Patient   | (0020,0037) | 3    |                                                                 |
| Frame of Reference UID      | (0020,0052) | 1C   |                                                                 |
| Pixel Spacing               | (0028,0030) | 3    |                                                                 |
| Calibration Image           | (0050,0004) | 3    |                                                                 |

| Attribute Name               | Tag         | Type | Notes                                    |
|------------------------------|-------------|------|------------------------------------------|
| <b>SR Document Keys</b>      |             |      | <b>Directory Record Type SR Document</b> |
| Specific Character Set       | (0008,0005) | 1C   |                                          |
| Content Date                 | (0008,0023) | 1    |                                          |
| Content Time                 | (0008,0033) | 1    |                                          |
| Instance Number              | (0020,0013) | 1    |                                          |
| Verification DateTime        | (0040,A030) | 1C   |                                          |
| Concept Name Code Sequence   | (0040,A043) | 1    |                                          |
| >Include Code Sequence Macro |             |      |                                          |
| Completion Flag              | (0040,A491) | 1    |                                          |
| Verification Flag            | (0040,A493) | 1    |                                          |
| <b>Raw Data Keys</b>         |             |      | <b>Directory Record Type RAW DATA</b>    |
| Specific Character Set       | (0008,0005) | 1C   |                                          |
| Image Type                   | (0008,0008) | 3    |                                          |
| SOP Class UID                | (0008,0016) | 3    |                                          |
| SOP Instance UID             | (0008,0018) | 3    |                                          |
| Content Date                 | (0008,0023) | 3    |                                          |
| Content Time                 | (0008,0033) | 3    |                                          |
| Acquisition Number           | (0020,0012) | 3    |                                          |
| Instance Number              | (0020,0013) | 1    |                                          |

### 5.3.2 Compliance to STD-GEN-CDR

The SC2000 Workplace conforms to the STD-GEN-CDR profile. The following SOP Classes will be supported as an FSC.

**Table 5-5:**  
**STD-GEN-CDR Supported SOP Classes**

| IOD                             | SOP Class UID             | Transfer Syntax and UID   | FSC | FSR | FSU |
|---------------------------------|---------------------------|---------------------------|-----|-----|-----|
| Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7 | Explicit VR Little Endian | Yes | No  | No  |

### 5.3.3 Compliance to STD-US-SC-MF-CDR

For media conforming to the STD-US-SC-MF-CDR profiles the following SOP Classes and transfer syntaxes will be supported as an FSC.

**Table 5-6:**  
**STD-US-SC-MF-CDR Supported SOP Classes**

| IOD                                          | SOP Class UID               | Transfer Syntax and UID                         | FSC | FSR | FSU |
|----------------------------------------------|-----------------------------|-------------------------------------------------|-----|-----|-----|
| Ultrasound Multi-frame Image Storage (Clips) | 1.2.840.10008.5.1.4.1.1.3.1 | JPEG Lossy (Baseline)<br>1.2.840.10008.1.2.4.50 | Yes | No  | No  |

The following Photometric Interpretations are supported by FSC:

- RGB - Ultrasound Image Storage only
- YBR\_FULL\_422 - Ultrasound Multi-frame Image Storage (Clips) only

### 5.3.4 Compliance to STD-US-ID-MF-CDR

For media conforming to the STD-US-ID-MF-CDR profiles the following SOP Classes and transfer syntaxes will be supported as an FSC.

**Table 5-7:**  
**STD-US-MF-CDR Supported SOP Classes**

| IOD              | SOP Class UID              | Transfer Syntax and UID                          | FSC | FSR | FSU |
|------------------|----------------------------|--------------------------------------------------|-----|-----|-----|
| Raw Data Storage | 1.2.840.10008.5.1.4.1.1.66 | Explicit VR Little Endian<br>1.2.840.10008.1.2.1 | Yes | No  | No  |

## 6 SUPPORT OF CHARACTER SETS

### 6.1 Character Sets for syngo SC2000 Workplace

The syngo SC2000 Workplace supports the ISO 8859 Latin 1 (ISO-IR 100) character set.

## 7 SECURITY

### 7.1 Security Profiles

- PS 3.15 Annex F: Network Address Management Profiles: DHCP Client, DNS Client supported
- PS 3.15 Annex G: Time Synchronization Profiles supported

### 7.2 Association Level Security

It is possible to configure whether the DICOM Server will only answer to known AETs or to any AET.

### 7.3 Application Level Security

- For configuration and maintenance, the Service Technician must login with a separate password.

## 8 ANNEXES

## 8.1 IOD Contents

## 8.1.1 Created SOP Instances

## 8.1.1.1 US Image IOD Attributes

| Module            | Attribute                                    | Tag         | Type | Notes                           |
|-------------------|----------------------------------------------|-------------|------|---------------------------------|
| Patient           | Patient's Name                               | (0010,0010) | 2    | Copied from existing study      |
|                   | Patient ID                                   | (0010,0020) | 2    | Copied from existing study      |
|                   | Patient's Birth Date                         | (0010,0030) | 2    | Copied from existing study      |
|                   | Patient's Sex                                | (0010,0040) | 2    | Copied from existing study      |
| General Study     | Study Instance UID                           | (0020,000D) | 1    | Copied from existing study      |
|                   | Study Date                                   | (0008,0020) | 2    | Created                         |
|                   | Study Time                                   | (0008,0030) | 2    | Created                         |
|                   | Referring Physician's Name                   | (0008,0090) | 2    | Copied from existing study      |
|                   | Study ID                                     | (0020,0010) | 2    | Created                         |
|                   | Accession Number                             | (0008,0050) | 2    | Copied from existing study      |
|                   | Study Description                            | (0008,1030) | 3    | Copied from existing study      |
|                   | Referenced Study Sequence                    | (0008,1110) | 3    | Copied from existing study      |
|                   | >Referenced SOP Class UID                    | (0008,1150) | 1C   |                                 |
|                   | >Referenced SOP Instance UID                 | (0008,1155) | 1C   |                                 |
| Patient Study     | Patient's Age                                | (0010,1010) | 3    | Copied from existing study      |
|                   | Patient's Size                               | (0010,1020) | 3    | Copied from existing study      |
|                   | Patient's Weight                             | (0010,1030) | 3    | Copied from existing study      |
| General Series    | Modality                                     | (0008,0060) | 1    | Set to US                       |
|                   | Series Instance UID                          | (0020,000E) | 1    | Created                         |
|                   | Series Number                                | (0020,0011) | 2    | Set to 1...n                    |
|                   | Protocol Name                                | (0018,1030) | 3    | Copied from existing study      |
|                   | Operators' Name                              | (0008,1070) | 3    | Copied from existing study      |
|                   | Referenced Performed Procedure Step Sequence | (0008,1111) | 3    | Copied from existing study      |
|                   | >Referenced SOP Class UID                    | (0008,1150) | 1C   | Copied from existing study      |
|                   | >Referenced SOP Instance UID                 | (0008,1155) | 1C   | Copied from existing study      |
|                   | Request Attributes Sequence                  | (0040,0275) | 3    | Copied from existing study      |
|                   | >Requested Procedure ID                      | (0040,1001) | 1C   |                                 |
|                   | >Requested Procedure Description             | (0032,1060) | 3    |                                 |
|                   | >Scheduled Procedure Step ID                 | (0040,0009) | 1C   |                                 |
|                   | >Scheduled Protocol Code Sequence            | (0040,0008) | 3    |                                 |
|                   | >>Include 'Code Sequence Macro'              |             |      |                                 |
|                   | Performed Protocol Code Sequence             | (0040,0260) | 3    |                                 |
|                   |                                              |             |      |                                 |
| General Equipment | Manufacturer                                 | (0008,0070) | 2    | Set to "SIEMENS"                |
|                   | Institution Name                             | (0008,0080) | 3    | Copied from existing study      |
|                   | Station Name                                 | (0008,1010) | 3    | Set to the computer's host name |
|                   | Institutional Department Name                | (0008,1040) | 3    |                                 |

| Module                | Attribute                      | Tag         | Type | Notes                                         |
|-----------------------|--------------------------------|-------------|------|-----------------------------------------------|
|                       | Manufacturer's Model Name      | (0008,1090) | 3    | Set to "ACUSON SC2000 Workplace"              |
|                       | Device Serial Number           | (0018,1000) | 3    | Set to system serial number                   |
|                       | Software Versions              | (0018,1020) | 3    | Set to "VB20x" where x is a letter            |
| General Image         | Instance Number                | (0020,0013) | 2    | 1...n                                         |
|                       | Patient Orientation            | (0020,0020) | 2C   | Set to zero length                            |
|                       | Content Date                   | (0008,0023) | 2C   | Created                                       |
|                       | Content Time                   | (0008,0033) | 2C   | Created                                       |
|                       | Acquisition Date               | (0008,0022) | 3    | Created                                       |
|                       | Acquisition Time               | (0008,0032) | 3    | Created                                       |
|                       | Derivation Description         | (0008,2111) | 3    |                                               |
| Image Pixel           | Rows                           | (0028,0010) | 1    | Set to 768                                    |
|                       | Columns                        | (0028,0011) | 1    | Set to 1024                                   |
|                       | Pixel Data                     | (7FE0,0010) | 1    |                                               |
| US Region Calibration | Sequence of Ultrasound Regions | (0018,6011) | 1    | One created for each US region displayed      |
|                       | >Region Location Min x0        | (0018,6018) | 1    |                                               |
|                       | >Region Location Min y0        | (0018,601A) | 1    |                                               |
|                       | >Region Location Max x1        | (0018,601C) | 1    |                                               |
|                       | >Region Location Max y1        | (0018,601E) | 1    |                                               |
|                       | >Physical Units X Direction    | (0018,6024) | 1    |                                               |
|                       | >Physical Units Y Direction    | (0018,6026) | 1    |                                               |
|                       | >Physical Delta X              | (0018,602C) | 1    |                                               |
|                       | >Physical Delta Y              | (0018,602E) | 1    |                                               |
|                       | >Reference Pixel x0            | (0018,6020) | 3    |                                               |
|                       | >Reference Pixel y0            | (0018,6022) | 3    |                                               |
|                       | >Ref. Pixel Physical Value X   | (0018,6028) | 3    |                                               |
|                       | >Ref. Pixel Physical Value Y   | (0018,602A) | 3    |                                               |
|                       | >Region Spatial Format         | (0018,6012) | 1    |                                               |
|                       | >Region Data Type              | (0018,6014) | 1    |                                               |
|                       | >Region Flags                  | (0018,6016) | 1    |                                               |
|                       | >Doppler Correction Angle      | (0018,6034) | 3    | Doppler regions only                          |
| US Image              | Samples Per Pixel              | (0028,0002) | 1    | Set to 3.                                     |
|                       | Photometric Interpretation     | (0028,0004) | 1    | See Table 4-8                                 |
|                       | Bits Allocated                 | (0028,0100) | 1    | Set to 8                                      |
|                       | Bits Stored                    | (0028,0101) | 1    | Set to 8                                      |
|                       | High Bit                       | (0028,0102) | 1    | Set to 7                                      |
|                       | Planar Configuration           | (0028,0006) | 1C   | Set to 0 (color-by-pixel)                     |
|                       | Pixel Representation           | (0028,0103) | 1    | Set to 0 (unsigned integer)                   |
|                       | Image Type                     | (0008,0008) | 2    | Normally DERIVED\PRIMARY\INTRACA RDIAC\<nnnn> |
|                       | Lossy Image Compression        | (0028,2110) | 1C   | = 01 if compressed                            |
|                       | R Wave Time Vector             | (0018,6060) | 3    |                                               |
|                       | Heart Rate                     | (0018,1088) | 3    |                                               |

| Module                                                               | Attribute                                  | Tag         | Type | Notes                                                                  |
|----------------------------------------------------------------------|--------------------------------------------|-------------|------|------------------------------------------------------------------------|
|                                                                      | Transducer Data                            | (0018,5010) | 3    | Probe name, copied from existing study                                 |
|                                                                      | Transducer Type                            | (0018,6031) | 3    | Copied from existing study                                             |
|                                                                      | Focus Depth                                | (0018,5012) | 3    | Copied from existing study                                             |
|                                                                      | Mechanical Index                           | (0018,5022) | 3    | Copied from existing study                                             |
| SOP Common                                                           | SOP Class UID                              | (0008,0016) | 1    | 1.2.840.10008.5.1.4.1.1.6.1                                            |
|                                                                      | SOP Instance UID                           | (0008,0018) | 1    | Created                                                                |
|                                                                      | Specific Character Set                     | (0008,0005) | 1C   | Set to ISO_IR 100                                                      |
|                                                                      | Instance Creation Date                     | (0008,0012) | 3    | Created                                                                |
|                                                                      | Instance Creation Time                     | (0008,0013) | 3    | Created                                                                |
| <b>Standard Extended SOP Class - Standard and Private Attributes</b> |                                            |             |      |                                                                        |
| General Study                                                        | Performed Procedure Step ID                | (0040,0253) | 3    | Copied from existing study                                             |
|                                                                      | Performed Procedure Step Start Date        | (0040,0244) | 3    | Copied from existing study                                             |
|                                                                      | Performed Procedure Step Start Time        | (0040,0245) | 3    | Copied from existing study                                             |
|                                                                      | Performed Procedure Step Description       | (0040,0254) | 3    | Copied from existing study                                             |
| Image Pixel                                                          | Pixel Spacing                              | (0028,0030) | 1C   |                                                                        |
| Private                                                              | Private Creator Data Element (Implementor) | (0009,0010) | 3    | Set to "ACUSON:1.2.840.113680.1.0:0 910"                               |
|                                                                      | Custom Field 1                             | (0009,1002) | 3    | Values entered by user on Patient Registration Field : Custom Field 1  |
|                                                                      | Custom Field 2                             | (0009,1003) | 3    | Values entered by user on Patient Registration Field : Custom Field 2  |
|                                                                      | Fetal LMP Date                             | (0009,1007) | 3    | Values entered by user on Patient Registration Field : Fetal LMP Date  |
|                                                                      | Fetal EDD Date                             | (0009,1008) | 3    | Values entered by user on Patient Registration Field : Fetal EDD Date  |
|                                                                      | Fetal Age Weeks                            | (0009,1009) | 3    | Values entered by user on Patient Registration Field : Fetal Age Weeks |
|                                                                      | Fetal Age Days                             | (0009,100A) | 3    | Values entered by user on Patient Registration Field : Fetal Age Days  |
|                                                                      | Fetal Gravida                              | (0009,100B) | 3    | Values entered by user on Patient Registration Field : Fetal Gravida   |
|                                                                      | Fetal Ectopics                             | (0009,100C) | 3    | Values entered by user on Patient Registration Field : Fetal Ectopics  |
|                                                                      | Fetal Aborta                               | (0009,100D) | 3    | Values entered by user on Patient Registration Field : Fetal Aborta    |
|                                                                      | Fetal Para                                 | (0009,100E) | 3    | Values entered by user on Patient Registration Field : Fetal Para      |
|                                                                      | Fetal IVF Date                             | (0009,100F) | 3    | Values entered by user on Patient Registration Field : Fetal IVF Date  |
| Private                                                              | Private Creator Data Element (Implementor) | (0019,0010) | 3    | Set to "SIEMENS Ultrasound SC2000"                                     |

| Module  | Attribute                                                                                                                          | Tag         | Type | Notes                              |
|---------|------------------------------------------------------------------------------------------------------------------------------------|-------------|------|------------------------------------|
|         | B-mode Tint Index (used for routing the image to B&W or Color printer)                                                             | (0019,102D) | 3    | VR is Unsigned Short (US)          |
|         | Doppler Tint Index (used for routing the image to B&W or Color printer)                                                            | (0019,1072) | 3    | VR is Unsigned Short (US)          |
|         | M-mode Tint Index (used for routing the image to B&W or Color printer)                                                             | (0019,1088) | 3    | VR is Unsigned Short (US)          |
| Private | Private Creator Data Element (Implementor)                                                                                         | (0119,0010) | 3    | Set to "SIEMENS Ultrasound SC2000" |
|         | Volume Rate                                                                                                                        | (0119,1013) | 3    |                                    |
| Private | Private Creator Data Element (Implementor)                                                                                         | (0149,0010) | 3    | Set to "SIEMENS Ultrasound SC2000" |
|         | Vector of BROI points used for auto-measurements                                                                                   | (0149,1001) | 3    | VR is Floating Point Double (FD)   |
|         | Min/Max Location: Start/End timestamps of strip stream in Spectral Doppler or M-mode. Used for Spectral Doppler auto-measurements. | (0149,1002) | 3    | VR is Floating Point Double (FD)   |
|         | Visible R-waves: Timestamps of visible R-waves in strip modes. Used for Spectral Doppler auto-measurements.                        | (0149,1003) | 3    | VR is Floating Point Double (FD)   |

### 8.1.1.2 US Multi-frame Image IOD Attributes

| Module         | Attribute                                    | Tag         | Type | Notes                      |
|----------------|----------------------------------------------|-------------|------|----------------------------|
| Patient        | Patient's Name                               | (0010,0010) | 2    | Copied from existing study |
|                | Patient ID                                   | (0010,0020) | 2    | Copied from existing study |
|                | Patient's Birth Date                         | (0010,0030) | 2    | Copied from existing study |
|                | Patient's Sex                                | (0010,0040) | 2    | Copied from existing study |
| General Study  | Study Instance UID                           | (0020,000D) | 1    | Copied from existing study |
|                | Study Date                                   | (0008,0020) | 2    | Created                    |
|                | Study Time                                   | (0008,0030) | 2    | Created                    |
|                | Referring Physician's Name                   | (0008,0090) | 2    | Copied from existing study |
|                | Study ID                                     | (0020,0010) | 2    | Created                    |
|                | Accession Number                             | (0008,0050) | 2    | Copied from existing study |
|                | Study Description                            | (0008,1030) | 3    | Copied from existing study |
|                | Referenced Study Sequence                    | (0008,1110) | 3    | Copied from existing study |
|                | >Referenced SOP Class UID                    | (0008,1150) | 1C   |                            |
|                | >Referenced SOP Instance UID                 | (0008,1155) | 1C   |                            |
| Patient Study  | Patient's Age                                | (0010,1010) | 3    | Copied from existing study |
|                | Patient's Size                               | (0010,1020) | 3    | Copied from existing study |
|                | Patient's Weight                             | (0010,1030) | 3    | Copied from existing study |
| General Series | Modality                                     | (0008,0060) | 1    | Set to US                  |
|                | Series Instance UID                          | (0020,000E) | 1    | Created                    |
|                | Series Number                                | (0020,0011) | 2    | Set to 1...n               |
|                | Protocol Name                                | (0018,1030) | 3    | Copied from existing study |
|                | Operators' Name                              | (0008,1070) | 3    | Copied from existing study |
|                | Referenced Performed Procedure Step Sequence | (0008,1111) | 3    | Copied from existing study |

| Module                | Attribute                         | Tag         | Type | Notes                                    |
|-----------------------|-----------------------------------|-------------|------|------------------------------------------|
|                       | >Referenced SOP Class UID         | (0008,1150) | 1C   | Copied from existing study               |
|                       | >Referenced SOP Instance UID      | (0008,1155) | 1C   | Copied from existing study               |
|                       | Request Attributes Sequence       | (0040,0275) | 3    | Copied from existing study               |
|                       | >Requested Procedure ID           | (0040,1001) | 1C   | Copied from existing study               |
|                       | >Requested Procedure Description  | (0032,1060) | 3    | Copied from existing study               |
|                       | >Scheduled Procedure Step ID      | (0040,0009) | 1C   | Copied from existing study               |
|                       | >Scheduled Protocol Code Sequence | (0040,0008) | 3    | Copied from existing study               |
|                       | >>Include 'Code Sequence Macro'   |             |      |                                          |
|                       | Performed Protocol Code Sequence  | (0040,0260) | 3    | Copied from existing study               |
|                       | >Include 'Code Sequence Macro'    |             |      |                                          |
| General Equipment     | Manufacturer                      | (0008,0070) | 2    | Set to "SIEMENS"                         |
|                       | Institution Name                  | (0008,0080) | 3    | Copied from existing study               |
|                       | Station Name                      | (0008,1010) | 3    | Set to the computer's host name          |
|                       | Institutional Department Name     | (0008,1040) | 3    |                                          |
|                       | Manufacturer's Model Name         | (0008,1090) | 3    | Set to "ACUSON SC2000 Workplace"         |
|                       | Device Serial Number              | (0018,1000) | 3    | Set to system serial number              |
|                       | Software Versions                 | (0018,1020) | 3    | Set to "VB20x" where x is a letter       |
| General Image         | Instance Number                   | (0020,0013) | 2    | 1...n                                    |
|                       | Patient Orientation               | (0020,0020) | 2C   | Set to zero length                       |
|                       | Content Date                      | (0008,0023) | 2C   | Created                                  |
|                       | Content Time                      | (0008,0033) | 2C   | Created                                  |
|                       | Acquisition Date                  | (0008,0022) | 3    | Created                                  |
|                       | Acquisition Time                  | (0008,0032) | 3    | Created                                  |
|                       | Source Image Sequence             | (0008,2112) | 3    |                                          |
|                       | >Referenced SOP Class UID         | (0008,1150) | 1C   |                                          |
|                       | >Referenced SOP Instance UID      | (0008,1155) | 1C   |                                          |
|                       | Lossy Image Compression Ratio     | (0028,2112) | 3    | Only used with JPEG Lossy compression    |
|                       | Lossy Image Compression Method    | (0028,2114) | 3    |                                          |
| Image Pixel           | Rows                              | (0028,0010) | 1    | Set to 768                               |
|                       | Columns                           | (0028,0011) | 1    | Set to 1024                              |
|                       | Pixel Data                        | (7FE0,0010) | 1    |                                          |
| Cine                  | Frame Time Vector                 | (0018,1065) | 1C   | 1 to Number of Frames                    |
| Multi-Frame           | Number of Frames                  | (0028,0008) | 1    |                                          |
| US Region Calibration | Sequence of Ultrasound Regions    | (0018,6011) | 1    | One created for each US region displayed |
|                       | >Region Location Min x0           | (0018,6018) | 1    |                                          |
|                       | >Region Location Min y0           | (0018,601A) | 1    |                                          |
|                       | >Region Location Max x1           | (0018,601C) | 1    |                                          |
|                       | >Region Location Max y1           | (0018,601E) | 1    |                                          |
|                       | >Physical Units X Direction       | (0018,6024) | 1    |                                          |
|                       | >Physical Units Y Direction       | (0018,6026) | 1    |                                          |
|                       | >Physical Delta X                 | (0018,602C) | 1    |                                          |
|                       | >Physical Delta Y                 | (0018,602E) | 1    |                                          |
|                       | >Reference Pixel x0               | (0018,6020) | 3    |                                          |

| Module                                                               | Attribute                            | Tag         | Type | Notes                                                                           |
|----------------------------------------------------------------------|--------------------------------------|-------------|------|---------------------------------------------------------------------------------|
|                                                                      | >Reference Pixel y0                  | (0018,6022) | 3    |                                                                                 |
|                                                                      | >Ref. Pixel Physical Value X         | (0018,6028) | 3    |                                                                                 |
|                                                                      | >Ref. Pixel Physical Value Y         | (0018,602A) | 3    |                                                                                 |
|                                                                      | >Region Spatial Format               | (0018,6012) | 1    |                                                                                 |
|                                                                      | >Region Data Type                    | (0018,6014) | 1    |                                                                                 |
|                                                                      | >Region Flags                        | (0018,6016) | 1    |                                                                                 |
| US Image                                                             | Samples Per Pixel                    | (0028,0002) | 1    | Set to 3<br>Set to 1 if RGB to MONOCHROME2 is Configured for remote destination |
|                                                                      | Photometric Interpretation           | (0028,0004) | 1    | See Table 4-8                                                                   |
|                                                                      | Bits Allocated                       | (0028,0100) | 1    | Set to 8                                                                        |
|                                                                      | Bits Stored                          | (0028,0101) | 1    | Set to 8                                                                        |
|                                                                      | High Bit                             | (0028,0102) | 1    | Set to 7                                                                        |
|                                                                      | Planar Configuration                 | (0028,0006) | 1C   | Set to 0 (color-by-pixel)                                                       |
|                                                                      | Pixel Representation                 | (0028,0103) | 1    | Set to 0 (unsigned integer)                                                     |
|                                                                      | Frame Increment Pointer              | (0028,0009) | 1C   | Sequencing by Frame Time Vector (0018,1065)                                     |
|                                                                      | Image Type                           | (0008,0008) | 2    | Normally DERIVED\PRIMARY\INTRACA RDIAC\<nnnn>                                   |
|                                                                      | Lossy Image Compression              | (0028,2110) | 1C   | Set to 01                                                                       |
|                                                                      | Number of Stages                     | (0008,2124) | 2C   |                                                                                 |
|                                                                      | Number of Views in Stage             | (0008,212A) | 2C   |                                                                                 |
|                                                                      | R Wave Time Vector                   | (0018,6060) | 3    |                                                                                 |
|                                                                      | Stage Name                           | (0008,2120) | 3    |                                                                                 |
|                                                                      | Stage Number                         | (0008,2122) | 3    |                                                                                 |
|                                                                      | View Name                            | (0008,2127) | 3    |                                                                                 |
|                                                                      | View Number                          | (0008,2128) | 3    |                                                                                 |
|                                                                      | Heart Rate                           | (0018,1088) | 3    |                                                                                 |
|                                                                      | Transducer Data                      | (0018,5010) | 3    | Probe name                                                                      |
|                                                                      | Transducer Type                      | (0018,6031) | 3    |                                                                                 |
|                                                                      | Focus Depth                          | (0018,5012) | 3    |                                                                                 |
|                                                                      | Mechanical Index                     | (0018,5022) | 3    |                                                                                 |
| SOP Common                                                           | SOP Class UID                        | (0008,0016) | 1    | 1.2.840.10008.5.1.4.1.1.3.1                                                     |
|                                                                      | SOP Instance UID                     | (0008,0018) | 1    | Created                                                                         |
|                                                                      | Specific Character Set               | (0008,0005) | 1C   | Set to ISO_IR 100                                                               |
|                                                                      | Instance Creation Date               | (0008,0012) | 3    | Created                                                                         |
|                                                                      | Instance Creation Time               | (0008,0013) | 3    | Created                                                                         |
| <b>Standard Extended SOP Class - Standard and Private Attributes</b> |                                      |             |      |                                                                                 |
| General Study                                                        | Performed Procedure Step ID          | (0040,0253) | 3    | Copied from existing study                                                      |
|                                                                      | Performed Procedure Step Start Date  | (0040,0244) | 3    |                                                                                 |
|                                                                      | Performed Procedure Step Start Time  | (0040,0245) | 3    |                                                                                 |
|                                                                      | Performed Procedure Step Description | (0040,0254) | 3    |                                                                                 |
| Image Pixel                                                          | Pixel Spacing                        | (0028,0030) | 1C   |                                                                                 |
| Waveform                                                             | Waveform Sequence                    | (5400,0100) | 3    |                                                                                 |

| Module                  | Attribute                                        | Tag         | Type | Notes                                                                                                           |
|-------------------------|--------------------------------------------------|-------------|------|-----------------------------------------------------------------------------------------------------------------|
|                         | >Acquisition Datetime                            | (0008,002A) | 3    |                                                                                                                 |
|                         | >Trigger Time Offset                             | (0018,1069) | 1C   |                                                                                                                 |
|                         | >Waveform Originality                            | (003A,0004) | 1    | ORIGINAL                                                                                                        |
|                         | >Number of Waveform Channels                     | (003A,0005) | 1    | 1                                                                                                               |
|                         | >Number of Waveform Samples                      | (003A,0010) | 1    |                                                                                                                 |
|                         | >Sampling Frequency                              | (003A,001A) | 1    |                                                                                                                 |
|                         | >Channel Definition Sequence                     | (003A,0200) | 1    |                                                                                                                 |
|                         | >>Channel Source Sequence                        | (003A,0208) | 1    |                                                                                                                 |
|                         | >>>Include 'Code Sequence Macro'                 |             |      |                                                                                                                 |
|                         | >>Channel Sensitivity                            | (003A,0210) | 1C   |                                                                                                                 |
|                         | >>Channel Sensitivity Units Sequence             | (003A,0211) | 1C   |                                                                                                                 |
|                         | >>>Include 'Code Sequence Macro'                 |             |      |                                                                                                                 |
|                         | >>Waveform Bits Stored                           | (003A,021A) | 1    |                                                                                                                 |
|                         | >Waveform Bits Allocated                         | (5400,1004) | 1    |                                                                                                                 |
|                         | >Waveform Sample Interpretation                  | (5400,1006) | 1    |                                                                                                                 |
|                         | >Waveform Data                                   | (5400,1010) | 1    |                                                                                                                 |
| Cardiac Synchronization | Per-frame Functional Groups Sequence             | (5200,9230) | 3    |                                                                                                                 |
|                         | >Cardiac Synchronization Sequence                | (0018,9118) | 1    |                                                                                                                 |
|                         | >>Frame Reference DateTime                       | (0018,9151) | 1C   |                                                                                                                 |
|                         | >>Nominal Cardiac Trigger Delay Time             | (0020,9153) | 1    |                                                                                                                 |
| Private                 | Private Creator Data Element (Implementor)       | (0009,0010) | 3    | Set to "ACUSON:1.2.840.113680.1.0:0 910"                                                                        |
|                         | Custom Field 1                                   | (0009,1002) | 3    | Values entered by user on Patient Registration Field : Custom Field 1                                           |
|                         | Custom Field 2                                   | (0009,1003) | 3    | Values entered by user on Patient Registration Field : Custom Field 2                                           |
| Private                 | Private Creator Data Element (Implementor)       | (0119,0010) | 3    | Set to "SIEMENS Ultrasound SC2000"                                                                              |
|                         | Stage Timer Time                                 | (0119,1011) | 3    |                                                                                                                 |
|                         | Stop Watch Time                                  | (0119,1012) | 3    |                                                                                                                 |
|                         | Volume Rate                                      | (0119,1013) | 3    |                                                                                                                 |
| Private                 | Private Creator Data Element (Implementor)       | (0139,0010) | 3    | Set to "SIEMENS Ultrasound SC2000"                                                                              |
|                         | Physio Capture ROI                               | (0139,1001) | 3    | Indicates whether ECG waveform was within Capture ROI during Stress Echo protocol when Capture ROI was enabled. |
| Private                 | Private Creator Data Element (Implementor)       | (0149,0010) | 3    | Set to "SIEMENS Ultrasound SC2000"                                                                              |
|                         | Vector of BROI points used for auto-measurements | (0149,1001) | 3    | VR is Floating Point Double (FD)                                                                                |

### 8.1.1.3 Secondary Capture Image IOD Attributes

| Module | Attribute | Tag | Type | Notes |
|--------|-----------|-----|------|-------|
|--------|-----------|-----|------|-------|

| Module            | Attribute                                    | Tag         | Type | Notes                              |
|-------------------|----------------------------------------------|-------------|------|------------------------------------|
| Patient           | Patient's Name                               | (0010,0010) | 2    | Copied from existing study         |
|                   | Patient ID                                   | (0010,0020) | 2    | Copied from existing study         |
|                   | Patient's Birth Date                         | (0010,0030) | 2    | Copied from existing study         |
|                   | Patient's Sex                                | (0010,0040) | 2    | Copied from existing study         |
| General Study     | Study Instance UID                           | (0020,000D) | 1    | Copied from existing study         |
|                   | Study Date                                   | (0008,0020) | 2    | Created                            |
|                   | Study Time                                   | (0008,0030) | 2    | Created                            |
|                   | Referring Physician's Name                   | (0008,0090) | 2    | Copied from existing study         |
|                   | Study ID                                     | (0020,0010) | 2    | Created                            |
|                   | Accession Number                             | (0008,0050) | 2    | Copied from existing study         |
|                   | Study Description                            | (0008,1030) | 3    | Copied from existing study         |
|                   | Referenced Study Sequence                    | (0008,1110) | 3    | Copied from existing study         |
|                   | >Referenced SOP Class UID                    | (0008,1150) | 1C   |                                    |
|                   | >Referenced SOP Instance UID                 | (0008,1155) | 1C   |                                    |
| Patient Study     | Patient's Age                                | (0010,1010) | 3    | Copied from existing study         |
|                   | Patient's Size                               | (0010,1020) | 3    | Copied from existing study         |
|                   | Patient's Weight                             | (0010,1030) | 3    | Copied from existing study         |
| General Series    | Modality                                     | (0008,0060) | 3    | Set to US                          |
|                   | Series Instance UID                          | (0020,000E) | 1    | Created                            |
|                   | Series Number                                | (0020,0011) | 2    | Set to 1...n                       |
|                   | Protocol Name                                | (0018,1030) | 3    | Copied from existing study         |
|                   | Operators' Name                              | (0008,1070) | 3    | Copied from existing study         |
|                   | Referenced Performed Procedure Step Sequence | (0008,1111) | 3    | Copied from existing study         |
|                   | >Referenced SOP Class UID                    | (0008,1150) | 1C   | Copied from existing study         |
|                   | >Referenced SOP Instance UID                 | (0008,1155) | 1C   | Copied from existing study         |
|                   | Request Attributes Sequence                  | (0040,0275) | 3    | Copied from existing study         |
|                   | >Requested Procedure ID                      | (0040,1001) | 1C   |                                    |
|                   | >Requested Procedure Description             | (0032,1060) | 3    |                                    |
|                   | >Scheduled Procedure Step ID                 | (0040,0009) | 1C   |                                    |
|                   | >Scheduled Protocol Code Sequence            | (0040,0008) | 3    |                                    |
|                   | >>Include 'Code Sequence Macro'              |             | 1C   |                                    |
| General Equipment | Manufacturer                                 | (0008,0070) | 2    | Set to "SIEMENS"                   |
|                   | Institution Name                             | (0008,0080) | 3    | Copied from existing study         |
|                   | Station Name                                 | (0008,1010) | 3    | Set to the computer's host name    |
|                   | Institutional Department Name                | (0008,1040) | 3    |                                    |
|                   | Manufacturer's Model Name                    | (0008,1090) | 3    | Set to "ACUSON SC2000 Workplace"   |
|                   | Device Serial Number                         | (0018,1000) | 3    | Set to system serial number        |
|                   | Software Versions                            | (0018,1020) | 3    | Set to "VB20x" where x is a letter |
| SC Equipment      | Conversion Type                              | (0008,0064) | 1    | Set to WSD                         |
| General Image     | Instance Number                              | (0020,0013) | 2    | 1...n                              |
|                   | Patient Orientation                          | (0020,0020) | 2C   | Set to zero length                 |
|                   | Content Date                                 | (0008,0023) | 2C   | Created                            |

| Module                                                               | Attribute                                  | Tag         | Type | Notes                                                                 |
|----------------------------------------------------------------------|--------------------------------------------|-------------|------|-----------------------------------------------------------------------|
|                                                                      | Content Time                               | (0008,0033) | 2C   | Created                                                               |
|                                                                      | Image Type                                 | (0008,0008) | 3    | ORIGINAL/PRIMARY                                                      |
|                                                                      | Acquisition Date                           | (0008,0022) | 3    | Created                                                               |
|                                                                      | Acquisition Time                           | (0008,0032) | 3    | Created                                                               |
|                                                                      | Derivation Description                     | (0008,2111) | 3    |                                                                       |
| Image Pixel                                                          | Samples Per Pixel                          | (0028,0002) | 1    | Set to 3                                                              |
|                                                                      | Photometric Interpretation                 | (0028,0004) | 1    | See Table 4-8                                                         |
|                                                                      | Rows                                       | (0028,0010) | 1    | Set to 1050                                                           |
|                                                                      | Columns                                    | (0028,0011) | 1    | Set to 1680                                                           |
|                                                                      | Bits Allocated                             | (0028,0100) | 1    | Set to 8                                                              |
|                                                                      | Bits Stored                                | (0028,0101) | 1    | Set to 8                                                              |
|                                                                      | High Bit                                   | (0028,0102) | 1    | Set to 7                                                              |
|                                                                      | Pixel Representation                       | (0028,0103) | 1    | Set to 0 (unsigned integer)                                           |
|                                                                      | Pixel Data                                 | (7FE0,0010) | 1    |                                                                       |
|                                                                      | Planar Configuration                       | (0028,0006) | 1C   | Set to 0 (color-by-pixel)                                             |
| SOP Common                                                           | SOP Class UID                              | (0008,0016) | 1    | 1.2.840.10008.5.1.4.1.1.7                                             |
|                                                                      | SOP Instance UID                           | (0008,0018) | 1    | Created                                                               |
|                                                                      | Specific Character Set                     | (0008,0005) | 1C   | Set to ISO_IR 100                                                     |
|                                                                      | Instance Creation Date                     | (0008,0012) | 3    | Created                                                               |
|                                                                      | Instance Creation Time                     | (0008,0013) | 3    | Created                                                               |
| <b>Standard Extended SOP Class - Standard and Private Attributes</b> |                                            |             |      |                                                                       |
| General Study                                                        | Performed Procedure Step ID                | (0040,0253) | 3    | Copied from existing study                                            |
|                                                                      | Performed Procedure Step Start Date        | (0040,0244) | 3    | Copied from existing study                                            |
|                                                                      | Performed Procedure Step Start Time        | (0040,0245) | 3    | Copied from existing study                                            |
|                                                                      | Performed Procedure Step Description       | (0040,0254) | 3    | Copied from existing study                                            |
| Private                                                              | Private Creator Data Element (Implementor) | (0009,0010) | 3    | Set to "ACUSON:1.2.840.113680.1.0:0910"                               |
|                                                                      | Custom Field 1                             | (0009,1002) | 3    | Values entered by user on Patient Registration Field : Custom Field 1 |
|                                                                      | Custom Field 2                             | (0009,1003) | 3    | Values entered by user on Patient Registration Field : Custom Field 2 |

#### 8.1.1.4 Comprehensive SR IOD Attributes

| Module Name   | Attribute            | Tag         | Type | Notes                      |
|---------------|----------------------|-------------|------|----------------------------|
| Patient       | Patient's Name       | (0010,0010) | 2    | Copied from existing study |
|               | Patient ID           | (0010,0020) | 2    | Copied from existing study |
|               | Patient's Birth Date | (0010,0030) | 2    | Copied from existing study |
|               | Patient's Sex        | (0010,0040) | 2    | Copied from existing study |
|               | Patient Comments     | (0010,4000) | 3    | Copied from existing study |
| General Study | Study Instance UID   | (0020,000D) | 1    | Copied from existing study |
|               | Study Date           | (0008,0020) | 2    | Created                    |
|               | Study Time           | (0008,0030) | 2    | Created                    |

| Module Name         | Attribute                                    | Tag         | Type | Notes                                                                     |
|---------------------|----------------------------------------------|-------------|------|---------------------------------------------------------------------------|
|                     | Referring Physician's Name                   | (0008,0090) | 2    | Copied from existing study                                                |
|                     | Study ID                                     | (0020,0010) | 2    | Created                                                                   |
|                     | Accession Number                             | (0008,0050) | 2    | Copied from existing study                                                |
|                     | Study Description                            | (0008,1030) | 3    | Copied from existing study                                                |
|                     | Referenced Study Sequence                    | (0008,1110) | 3    | Copied from existing study                                                |
|                     | >Referenced SOP Class UID                    | (0008,1150) | 1C   |                                                                           |
|                     | >Referenced SOP Instance UID                 | (0008,1155) | 1C   |                                                                           |
| Patient Study       | Patient's Age                                | (0010,1010) | 3    | Copied from existing study                                                |
|                     | Patient's Size                               | (0010,1020) | 3    | Copied from existing study                                                |
|                     | Patient's Weight                             | (0010,1030) | 3    | Copied from existing study                                                |
| General Equipment   | Manufacturer                                 | (0008,0070) | 2    | Set to "SIEMENS"                                                          |
|                     | Institution Name                             | (0008,0080) | 3    | Copied from existing study                                                |
|                     | Station Name                                 | (0008,1010) | 3    | Set to the computer's host name                                           |
|                     | Institutional Department Name                | (0008,1040) | 3    |                                                                           |
|                     | Manufacturer's Model Name                    | (0008,1090) | 3    | Set to "ACUSON SC2000"                                                    |
|                     | Device Serial Number                         | (0018,1000) | 3    | Set to system serial number                                               |
|                     | Software Versions                            | (0018,1020) | 3    | Set to "VB20x" where x is a letter                                        |
| SR Document Series  | Modality                                     | (0008,0060) | 1    | Defined term "SR" used                                                    |
|                     | Series Instance UID                          | (0020,000E) | 1    | Uniquely generated by the SC2000                                          |
|                     | Series Number                                | (0020,0011) | 1    | Internally generated; incremented for each new exam within a study        |
|                     | Reference Performed Procedure Step Sequence  | (0008,1111) | 2    |                                                                           |
|                     | >Referenced SOP Class UID                    | (0008,1150) | 1C   |                                                                           |
|                     | >Reference SOP Instance UID                  | (0008,1155) | 1C   |                                                                           |
| SR Document General | Instance Number                              | (0020,0013) | 1    | Internally generated; incremented for each new SR document within a study |
|                     | Completion Flag                              | (0040,A491) | 1    | Defined Term "PARTIAL" used                                               |
|                     | Verification Flag                            | (0040,A493) | 1    | Defined Term "UNVERIFIED" used                                            |
|                     | Content Date                                 | (0008,0023) | 1    | Date of creation                                                          |
|                     | Content Time                                 | (0008,0033) | 1    | Time of creation                                                          |
|                     | Referenced Request Sequence                  | (0040,A370) | 1C   | Copied from existing study                                                |
|                     | >Study Instance UID                          | (0020,000D) | 1    |                                                                           |
|                     | >Referenced Study Sequence                   | (0008,1110) | 2    |                                                                           |
|                     | >>Referenced SOP Class UID                   | (0008,1150) | 1C   |                                                                           |
|                     | >>Reference SOP Instance UID                 | (0008,1155) | 1C   |                                                                           |
|                     | >Accession Number                            | (0008,0050) | 2    |                                                                           |
|                     | >Placer Order Number/Imaging Service Request | (0040,2016) | 2    |                                                                           |
|                     | >Filler Order Number/Imaging Service Request | (0040,2017) | 2    |                                                                           |
|                     | >Requested Procedure ID                      | (0040,1001) | 2    |                                                                           |
|                     | >Requested Procedure Description             | (0032,1060) | 2    |                                                                           |
|                     | >Requested Procedure Code Sequence           | (0032,1064) | 2    |                                                                           |
|                     | >>Include 'Code Sequence Macro'              |             |      |                                                                           |

| Module Name                                                          | Attribute                                  | Tag         | Type | Notes                                                                                                            |
|----------------------------------------------------------------------|--------------------------------------------|-------------|------|------------------------------------------------------------------------------------------------------------------|
|                                                                      | Performed Procedure Code Sequence          | (0040,A372) | 2    |                                                                                                                  |
|                                                                      | >>Include 'Code Sequence Macro'            |             |      |                                                                                                                  |
| SR Document Content                                                  | Value Type                                 | (0040,A040) | 1    | CONTAINER                                                                                                        |
|                                                                      | Concept Name Code Sequence                 | (0040,A043) | 1C   |                                                                                                                  |
|                                                                      | >Code Value                                | (0008,0100) | 1    | Set to "125200" for Adult Echocardiography Procedure Report or "125100" for Vascular Ultrasound Procedure Report |
|                                                                      | >Coding Scheme Designator                  | (0008,0102) | 1    | Set to "DCM"                                                                                                     |
|                                                                      | >Code Meaning                              | (0008,0104) | 1    | Set to "Adult Echocardiography Procedure Report" or "Vascular Ultrasound Procedure Report"                       |
|                                                                      | Continuity of Content                      | (0040,A050) | 1    | SEPARATE                                                                                                         |
|                                                                      | Content Template Sequence                  | (0040,A504) | 1C   | Template ID                                                                                                      |
|                                                                      | >Mapping Resource                          | (0008,0105) | 1    | Set to "DCMR"                                                                                                    |
|                                                                      | >Template Identifier                       | (0040,DB00) | 1    | Set to "5200" for Adult Echocardiography Procedure Report or "5100" for Vascular Ultrasound Procedure Report     |
|                                                                      | Content Sequence                           | (0040,A730) | 1C   | See Appendix for content of "Adult Echocardiography Procedure Report" or "Vascular Ultrasound Procedure Report"  |
| SOP Common                                                           | SOP Class UID                              | (0008,0016) | 1    | 1.2.840.10008.5.1.4.1.1.88.33                                                                                    |
|                                                                      | SOP Instance UID                           | (0008,0018) | 1    | Created                                                                                                          |
|                                                                      | Specific Character Set                     | (0008,0005) | 1C   | Set to ISO_IR 100                                                                                                |
| <b>Standard Extended SOP Class - Standard and Private Attributes</b> |                                            |             |      |                                                                                                                  |
| SR Document Series                                                   | Operators' Name                            | (0008,1070) | 3    | Copied from existing study                                                                                       |
|                                                                      | Performed Procedure Step ID                | (0040,0253) | 3    | Copied from existing study                                                                                       |
|                                                                      | Performed Procedure Step Start Date        | (0040,0244) | 3    | Copied from existing study                                                                                       |
|                                                                      | Performed Procedure Step Start Time        | (0040,0245) | 3    | Copied from existing study                                                                                       |
|                                                                      | Performed Procedure Step Description       | (0040,0254) | 3    | Copied from existing study                                                                                       |
| SR Document General                                                  | Requesting Physician                       | (0032,1032) | 3    | Copied from existing study                                                                                       |
|                                                                      | Requested Procedure ID                     | (0040,1001) | 2    | Copied from existing study                                                                                       |
|                                                                      | Requested Procedure Description            | (0032,1060) | 2    | Copied from existing study                                                                                       |
|                                                                      | Referenced Request Sequence                |             |      | Copied from existing study                                                                                       |
|                                                                      | >Requesting Physician                      | (0032,1032) | 3    |                                                                                                                  |
|                                                                      | >Performed Procedure Code Sequence         | (0040,A372) | 2    |                                                                                                                  |
|                                                                      | >>Include 'Code Sequence Macro'            |             |      |                                                                                                                  |
| Private                                                              | Private Creator Data Element (Implementor) | (0009,0010) | 3    | Set to "ACUSON:1.2.840.113680.1.0:0910"                                                                          |
|                                                                      | Custom Field 1                             | (0009,1002) | 3    | Values entered by user on Patient Registration Field : Custom Field 1                                            |
|                                                                      | Custom Field 2                             | (0009,1003) | 3    | Values entered by user on Patient Registration Field : Custom Field 2                                            |

| Module Name | Attribute                                  | Tag          | Type | Notes                                                                             |
|-------------|--------------------------------------------|--------------|------|-----------------------------------------------------------------------------------|
|             | Indications                                | (0009, 1004) | 3    | Values entered by user on patient registration field: Indications                 |
| Private     | Private Creator Data Element (Implementor) | (0021,0010)  | 3    | Set to "syngoDynamics_Reporting"                                                  |
|             | Private Creator Data Element               | (0021,10AD)  | 3    | Byte stream                                                                       |
| Private     | Private Creator Data Element (Implementor) | (0029,0010)  | 3    | Set to "SIEMENS CSA REPORT"                                                       |
|             | syngo Report Type                          | (0029,1008)  | 3    | Set to "US_ADULT_ECHO" or "US_VASCULAR"                                           |
|             | syngo Report Version                       | (0029,1009)  | 3    | Set to "1.12" for US_ADULT_ECHO or "1.4" for US_VASCULAR                          |
| Private     | Private Creator Data Element (Implementor) | (0077,0010)  | 3    | Set to "SIEMENS SYNGO EVIDENCE DOCUMENT DATA"                                     |
|             | Evidence Document Template Name            | (0077,1010)  | 3    | Set to "SiemensUS_AdultEchoReport" or "SiemensUS_VascularReport"                  |
|             | Evidence Document Template Version         | (0077,1011)  | 3    | Set to "1.12" for SiemensUS_AdultEchoReport or "1.4" for SiemensUS_VascularReport |
|             | Private Creator Data Element               | (0077,1020)  | 3    | Byte stream                                                                       |
|             | Private Creator Data Element               | (0077,1021)  | 3    | Byte stream                                                                       |
|             | Framework Version                          | (0077,1030)  | 3    | Set to "0.1"                                                                      |
|             | Private Creator Data Element               | (0077,1040)  | 3    | Byte stream                                                                       |

### 8.1.1.5 Raw Data IOD Attributes

| Module         | Attribute                    | Tag         | Type | Notes                      |
|----------------|------------------------------|-------------|------|----------------------------|
| Patient        | Patient's Name               | (0010,0010) | 2    | Copied from existing study |
|                | Patient ID                   | (0010,0020) | 2    | Copied from existing study |
|                | Patient's Birth Date         | (0010,0030) | 2    | Copied from existing study |
|                | Patient's Sex                | (0010,0040) | 2    | Copied from existing study |
| General Study  | Study Instance UID           | (0020,000D) | 1    | Copied from existing study |
|                | Study Date                   | (0008,0020) | 2    | Created                    |
|                | Study Time                   | (0008,0030) | 2    | Created                    |
|                | Referring Physician's Name   | (0008,0090) | 2    | Copied from existing study |
|                | Study ID                     | (0020,0010) | 2    | Created                    |
|                | Accession Number             | (0008,0050) | 2    | Copied from existing study |
|                | Study Description            | (0008,1030) | 3    | Copied from existing study |
|                | Referenced Study Sequence    | (0008,1110) | 3    | Copied from existing study |
|                | >Referenced SOP Class UID    | (0008,1150) | 1C   |                            |
|                | >Referenced SOP Instance UID | (0008,1155) | 1C   |                            |
| Patient Study  | Patient's Age                | (0010,1010) | 3    | Copied from existing study |
|                | Patient's Size               | (0010,1020) | 3    | Copied from existing study |
|                | Patient's Weight             | (0010,1030) | 3    | Copied from existing study |
| General Series | Modality                     | (0008,0060) | 1    | Set to US                  |
|                | Series Instance UID          | (0020,000E) | 1    | Created                    |
|                | Series Number                | (0020,0011) | 2    | Set to 1...n               |

| Module              | Attribute                                    | Tag          | Type | Notes                                                                                                                                                                                                              |
|---------------------|----------------------------------------------|--------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | Protocol Name                                | (0018,1030)  | 3    | Copied from existing study                                                                                                                                                                                         |
|                     | Operators' Name                              | (0008,1070)  | 3    | Copied from existing study                                                                                                                                                                                         |
|                     | Referenced Performed Procedure Step Sequence | (0008,1111)  | 3    | Copied from existing study                                                                                                                                                                                         |
|                     | >Referenced SOP Class UID                    | (0008,1150)  | 1C   |                                                                                                                                                                                                                    |
|                     | >Referenced SOP Instance UID                 | (0008,1155)  | 1C   |                                                                                                                                                                                                                    |
|                     | Request Attributes Sequence                  | (0040,0275)  | 3    | Copied from existing study                                                                                                                                                                                         |
|                     | >Requested Procedure ID                      | (0040,1001)  | 1C   |                                                                                                                                                                                                                    |
|                     | >Requested Procedure Description             | (0032,1060)  | 3    |                                                                                                                                                                                                                    |
|                     | >Scheduled Procedure Step ID                 | (0040,0009)  | 1C   |                                                                                                                                                                                                                    |
|                     | >Scheduled Protocol Code Sequence            | (0040,0008)  | 3    |                                                                                                                                                                                                                    |
|                     | >>Include 'Code Sequence Macro'              |              |      |                                                                                                                                                                                                                    |
| General Equipment   | Manufacturer                                 | (0008,0070)  | 2    | Set to "SIEMENS"                                                                                                                                                                                                   |
|                     | Institution Name                             | (0008,0080)  | 3    | Copied from existing study                                                                                                                                                                                         |
|                     | Station Name                                 | (0008,1010)  | 3    | Set to the computer's host name                                                                                                                                                                                    |
|                     | Institutional Department Name                | (0008,1040)  | 3    |                                                                                                                                                                                                                    |
|                     | Manufacturer's Model Name                    | (0008,1090)  | 3    | Set to "ACUSON SC2000"                                                                                                                                                                                             |
|                     | Device Serial Number                         | (0018,1000)  | 3    | Set to system serial number                                                                                                                                                                                        |
|                     | Software Versions                            | (0018,1020)  | 3    | Set to "VB20x" where x is a letter                                                                                                                                                                                 |
| Acquisition Context | Acquisition Context Sequence                 | (0040,0555)  | 2    | Zero length                                                                                                                                                                                                        |
| Raw Data            | Instance Number                              | (0020,0013)  | 2    | A number that identifies the image, system generated, should be sequential in acquisition order                                                                                                                    |
|                     | Content Date                                 | (0008, 0023) | 1    | Date when creation of this object started                                                                                                                                                                          |
|                     | Content Time                                 | (0008, 0033) | 1    | Time when creation of this object started                                                                                                                                                                          |
|                     | Acquisition DateTime                         | (0008,002A)  | 3    | Date and time when acquisition started.                                                                                                                                                                            |
|                     | Creator-Version UID                          | (0008,9123)  | 1    | Unique identification for the equipment and version of the software that has created this object                                                                                                                   |
|                     | Source Image Sequence                        | (0008,2112)  | 1C   | Image object that was used to derive this object. Required if Acoustic Data Sequence (0019,1002) is not present. This mechanism will be used to store updated bookmarks without including the complete pixel data. |
|                     | >Referenced SOP Class UID                    | (0008,1050)  | 1    | SOP Class UID for Raw Data IOD                                                                                                                                                                                     |
|                     | >Referenced SOP Instance UID                 | (0008,1155)  | 1    | SOP Instance UI of the Raw Data object that was used to derive this object                                                                                                                                         |
|                     | Referenced Image Sequence                    | (0008,1140)  | 3    | Reference to the 2D Image representing this view                                                                                                                                                                   |

| Module   | Attribute                                      | Tag          | Type | Notes                                                                                                                                             |
|----------|------------------------------------------------|--------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Raw Data | >Referenced SOP Class UID                      | (0008,1050)  | 1    | SOP Class UID for the DICOM Ultrasound Image Storage SOP Class or the DICOM Ultrasound Multi-Frame Image Storage SOP Class                        |
|          | >Referenced SOP Instance UID                   | (0008,1155)  | 1    | SOP Instance UI of the referenced image                                                                                                           |
|          | Private Creator Data Element (Implementor)     | (0119,0010)  | 1    | SIEMENS Ultrasound SC2000                                                                                                                         |
|          | Common Acoustic Meta Information               | (0119,1001)  | 1C   | Control information describing the acoustic data, which is common to all frames. Required if Source Image Sequence is not present                 |
|          | Multi Stream Sequence                          | (0119,1002)  | 1C   | Sequence of acoustic data blocks for multiple streams. One sequence per stream. Required if source image sequence is not present.                 |
|          | >Acoustic Data Sequence                        | (0119,1003)  | 1C   | Sequence for chunks of acoustic data for specific control information and acoustic data chunks. One item per chunk. One sequence per transaction. |
|          | >>Per Transaction Acoustic Control Information | (0119,1004)  | 1    | Transaction data, one for each transaction                                                                                                        |
|          | >>Acoustic Data Offset                         | (0119,1005)  | 1    | Offset of current Volume in Acoustic Image and Footer Data. One per transaction per stream                                                        |
|          | >>Acoustic Data Length                         | (0119,1006)  | 1    | Length of current Volume in Acoustic Image and Footer Data One per transaction per stream                                                         |
|          | >>Footer Offset                                | (0119,1007)  | 1    | Offset of footer for current Volume in Acoustic Image and Footer Data One per transaction per stream                                              |
|          | >>Footer Length                                | (0119,1008)  | 1    | Length of footer for current Volume in Acoustic Image and Footer Data One per transaction per stream                                              |
|          | >Acoustic Stream Number                        | (0119, 1009) | 1C   | Identification of acoustic stream number. One per stream                                                                                          |
|          | >Acoustic Stream Type                          | (0119.1010)  | 1C   | Identification of acoustic stream type. One per stream                                                                                            |
|          | Private Creator Data Element (Implementor)     | (0129,0010)  | 1    | SIEMENS Ultrasound SC2000                                                                                                                         |
|          | Raw Data Object Type                           | (0129,1030)  | 1    | Defined Term for Object Type <ul style="list-style-type: none"> <li>· VOLUME</li> <li>· APPLICATION STATE</li> <li>· EXAM STATE</li> </ul>        |

| Module        | Attribute                                  | Tag         | Type | Notes                                                                                                                                                                                                               |
|---------------|--------------------------------------------|-------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | Cine Parameters Sequence                   | (0129,1020) | 3    | Cine Parameters                                                                                                                                                                                                     |
|               | >Cine Parameters Schema                    | (0129,1021) | 3    | Schema describing stored Cine Parameters Data.                                                                                                                                                                      |
|               | >Cine Parameters Data                      | (0129,1022) | 3    | Values of Cine Parameters                                                                                                                                                                                           |
|               | Visualization Sequence                     | (0129,1006) | 3    | Sequence for Volume Rendered views. One item for each view.                                                                                                                                                         |
|               | >Visualization Information                 | (0129,1008) | 1C   | Volume rendering parameters. Required if Sequence is present.                                                                                                                                                       |
|               | Application State Sequence                 | (0129,1009) | 3    | Sequence of application states. One item for each application that was started online                                                                                                                               |
|               | >Application State Information             | (0129,1010) | 1C   | Application state information.                                                                                                                                                                                      |
|               | Private Creator Data Element (Implementor) | (0149,0010) | 3    | Set to "SIEMENS Ultrasound SC2000"                                                                                                                                                                                  |
|               | Rotation Angle                             | (0149,1004) | 3    | Left Plane Rotation Angle in 4D                                                                                                                                                                                     |
|               | Private Creator Data Element (Implementor) | (7FD1,0010) | 3    | SIEMENS Ultrasound SC2000                                                                                                                                                                                           |
|               | Acoustic Image and Footer Data             | (7FD1,1001) | 3    | Acoustic image data frame                                                                                                                                                                                           |
|               | Volume Version ID                          | (7FD1,1009) | 3    | 1.2                                                                                                                                                                                                                 |
|               | Volume Payload                             | (7FD1,1010) | 3    |                                                                                                                                                                                                                     |
|               | After Payload                              | (7FD1,1011) | 3    |                                                                                                                                                                                                                     |
| General Image | Acquisition Date                           | (0008,0022) | 3    | The date of the acquisition of this image                                                                                                                                                                           |
|               | Acquisition Time                           | (0008,0032) | 3    | The time of the acquisition of this image                                                                                                                                                                           |
| US Image      | Number of Stages                           | (0008,2124) | 2C   |                                                                                                                                                                                                                     |
|               | Number of Views in Stage                   | (0008,212A) | 2C   |                                                                                                                                                                                                                     |
|               | R Wave Time Vector                         | (0018,6060) | 3    | Vector of time offsets of the r-waves peaks relative to the start of Acquisition Datetime of the image data.                                                                                                        |
|               | Stage Name                                 | (0008,2120) | 3    |                                                                                                                                                                                                                     |
|               | Stage Number                               | (0008,2122) | 3    |                                                                                                                                                                                                                     |
|               | Heart Rate                                 | (0018,1088) | 3    | Beats per minute                                                                                                                                                                                                    |
|               | Mechanical Index                           | (0018,5022) | 3    | The mechanical index, when made available by a manufacturer, is defined according to the <i>Standard for Real-Time Display of Thermal and Mechanical Acoustic Output Indices on Diagnostic Ultrasound Equipment</i> |
| Waveform      | Waveform Sequence                          | (5400,0100) | 3    |                                                                                                                                                                                                                     |
|               | >Acquisition DateTime                      | (0008,002A) | 1    |                                                                                                                                                                                                                     |
|               | >Trigger Time Offset                       | (0018,1069) | 1C   |                                                                                                                                                                                                                     |
|               | >Waveform Originality                      | (003A,0004) | 1    | ORIGINAL                                                                                                                                                                                                            |
|               | >Number of Waveform Channels               | (003A,0005) | 1    | 1                                                                                                                                                                                                                   |
|               | >Number of Waveform Samples                | (003A,0010) | 1    |                                                                                                                                                                                                                     |

| Module                                                               | Attribute                            | Tag         | Type | Notes                         |
|----------------------------------------------------------------------|--------------------------------------|-------------|------|-------------------------------|
|                                                                      | >Sampling Frequency                  | (003A,001A) | 1    |                               |
|                                                                      | >Channel Definition Sequence         | (003A,0200) | 1    |                               |
|                                                                      | >>Channel Source Sequence            | (003A,0208) | 1    |                               |
|                                                                      | >>>Include 'Code Sequence Macro'     |             |      |                               |
|                                                                      | >>Channel Sensitivity                | (003A,0210) | 1C   |                               |
|                                                                      | >>Channel Sensitivity Units Sequence | (003A,0211) | 1C   |                               |
|                                                                      | >>>Include 'Code Sequence Macro'     |             |      |                               |
|                                                                      | >>Waveform Bits Stored               | (003A,021A) | 1    |                               |
|                                                                      | >Waveform Bits Allocated             | (5400,1004) | 1    |                               |
|                                                                      | >Waveform Sample Interpretation      | (5400,1006) | 1    |                               |
|                                                                      | >Waveform Data                       | (5400,1010) | 1    |                               |
| SOP Common                                                           | SOP Class UID                        | (0008,0016) | 1    | 1.2.840.10008.5.1.4.1.1.66    |
|                                                                      | SOP Instance UID                     | (0008,0018) | 1    | Created                       |
|                                                                      | Specific Character Set               | (0008,0005) | 1C   | From MWL or set to ISO_IR 100 |
|                                                                      | Instance Creation Date               | (0008,0012) | 3    | Created                       |
|                                                                      | Instance Creation Time               | (0008,0013) | 3    | Created                       |
| <b>Standard Extended SOP Class - Standard and Private Attributes</b> |                                      |             |      |                               |
| General Study                                                        | Performed Procedure Step ID          | (0040,0253) | 3    | Copied from existing study    |
|                                                                      | Performed Procedure Step Start Date  | (0040,0244) | 3    | Copied from existing study    |
|                                                                      | Performed Procedure Step Start Time  | (0040,0245) | 3    | Copied from existing study    |
|                                                                      | Performed Procedure Step Description | (0040,0254) | 3    | Copied from existing study    |
| General Image                                                        | Patient Orientation                  | (0020,0020) | 2C   | Set to zero length            |
|                                                                      | Image Type                           | (0008,0008) | 3    |                               |
| US Image                                                             | Stage Timer Time                     | (0119,1011) | 3    |                               |
|                                                                      | Stop Watch Time                      | (0119,1012) | 3    |                               |
|                                                                      | Volume Rate                          | (0119,1013) | 3    | Volumes per second            |

#### 8.1.1.6 Query: C-Find

The SC2000 Workplace DICOM Query/Retrieve SCU supports hierarchical queries with all mandatory search keys. The interactive querying of attributes on IMAGE level is not supported by the Query SCU. Though, retrieval of individual Objects is possible. The following table describes the search keys for the different query models that the SCU supports. Matching is either wildcard, which means that the user can supply a string containing wildcards, or universal, which means that the attribute is requested as return value.

| Attribute Name       | Tag         | Type | Matching         | User Input  | Return Value Display |
|----------------------|-------------|------|------------------|-------------|----------------------|
| <b>Patient Level</b> |             |      |                  |             |                      |
| Patient Name         | (0010,0010) | R    | Wildcard         | Enter value | Yes                  |
| Patient ID           | (0010,0020) | U    | Wildcard         | Enter value | Yes                  |
| Patient's Birth date | (0010,0030) | O    | Universal (Null) | Enter value | Yes                  |
| Patient's Sex        | (0010,0040) | O    | Universal (Null) | Enter value | Yes                  |
| <b>Study Level</b>   |             |      |                  |             |                      |
| Patient Name         | (0010,0010) | R    | Wildcard         | Enter value | Yes                  |
| Patient ID           | (0010,0020) | R    | Wildcard         | Enter value | Yes                  |

| Attribute Name                      | Tag         | Type | Matching                                      | User Input  | Return Value Display |
|-------------------------------------|-------------|------|-----------------------------------------------|-------------|----------------------|
| Patient's Birth date                | (0010,0030) | O    | Universal (Null)                              | Enter value | Yes                  |
| Patient's Sex                       | (0010,0040) | O    | Universal (Null)                              | Enter value | Yes                  |
| Study Instance UID                  | (0020,000D) | U    | Universal (Null)                              |             | No                   |
| Study ID                            | (0020,0010) | R    | Universal (Null)                              | Enter value | Yes                  |
| Study Date                          | (0008,0020) | R    | Universal (Null)                              | Enter value | Yes                  |
| Study Time                          | (0008,0030) | R    | Universal (Null)                              | -           | Yes                  |
| Accession Number                    | (0008,0050) | R    | Universal (Null)                              | Enter value | Yes                  |
| Study Description                   | (0008,1030) | O    | Universal (Null)                              | Enter value | Yes                  |
| Referring Physician's Name          | (0008,0090) | O    | Universal (Null)                              | Enter value | Yes                  |
| Name of Physician Reading Study     | (0008,1060) | O    | Universal (Null)                              | Enter value | Yes                  |
| Modalities in Study                 | (0008,0061) | O    | Universal (Null)                              | Enter value | Yes                  |
| Retrieve AE Title                   | (0008,0054) | O    | Universal (Null)                              |             | No                   |
| Number of Study related Series      | (0020,1206) | O    | Universal (Null)                              |             | Yes                  |
| Number of Study related Instances   | (0020,1208) | O    | Universal (Null)                              |             | No                   |
| <b>Series Level</b>                 |             |      |                                               |             |                      |
| Series Instance UID                 | (0020,000E) | U    | Universal (Null)                              |             | No                   |
| Series Number                       | (0020,0011) | R    | Universal (Null)                              |             | Yes                  |
| Modality                            | (0008,0060) | R    | Universal (Null)                              | Enter value | Yes                  |
| Performing Physician                | (0008,1050) | O    | Universal (Null)                              | Enter value | Yes                  |
| Retrieve AE Title                   | (0008,0054) | O    | Universal (Null)                              |             | Yes                  |
| Protocol Name                       | (0018,1030) | O    | Universal (Null)                              |             | No                   |
| Performed Procedure Step Start Date | (0040,0244) | O    | Universal (Null)                              |             | Yes                  |
| Performed Procedure Step Start Time | (0040,0245) | O    | Universal (Null)                              |             | Yes                  |
| Requested Attribute Sequence        | (0040,0275) | O    | Universal (Null)                              |             | Yes                  |
| > Requested Procedure ID            | (0040,1001) | O    | Universal (Null)                              |             | Yes                  |
| > Scheduled Procedure ID            | (0040,0009) | O    | Universal (Null)                              |             | Yes                  |
| Number of Series related Instances  | (0020,1209) | O    | Universal (Null)                              |             | Yes                  |
| <b>Image Level</b>                  |             |      |                                               |             |                      |
| SOP Instance UID                    | (0008,0018) | U    | Single value                                  |             | No                   |
| Image Number                        | (0020,0013) | R    | Universal (Null)                              |             | Yes                  |
| Retrieve AE Title                   | (0008,0054) | O    | Universal (Null)                              |             | No                   |
| Instance Date                       | (0008,0023) | O    | Universal (Null)                              |             | No                   |
| Instance Time                       | (0008,0033) | O    | Universal (Null)                              |             | No                   |
| Number of Frames                    | (0028,0008) | O    | Universal (Null)                              |             | Yes                  |
| Content Date                        | (0008,0023) | O    | Single value,<br>Range matching,<br>Universal | Enter value | Yes                  |
| Content Time                        | (0008,0033) | O    | Single value,<br>Range matching,<br>Universal | Enter value | Yes                  |
| Referenced Request Sequence         | (0040,A370) | O    | Sequence matching                             |             | Yes                  |
| >Accession Number                   | 0008,0050)  | O    | Single value,<br>Universal                    |             | Yes                  |
| >Requested Procedure ID             | (0040,1000) | O    | Single value,<br>Universal                    |             | Yes                  |



## 9 APPENDICES

### 9.1 Appendix A: Echocardiography Structured Report

This appendix lists the DICOM Structured Report (SR) mappings used in the Cardiac Structured Reports of the ACUSON SC2000 system SR files.

The mappings follow the DICOM SR Template TID 5200: Echocardiography Procedure Report, as described in PS 3.16-2011 of the DICOM Standard, and are organized in a manner similar to TID 5200. The **Label** column identifies the on-screen worksheet label associated with a measurement using the format “[Worksheet] Table Heading: Measurement Label” or “[Worksheet] Measurement Label”. All private code values use the Coding Scheme Designator “99SIEMENS”.

[ ... ] contains additional information about the measurement.

The **HR** column indicates if a measurement has an individual heart rate associated it. The heart rate is defined in the SR by a measurement having the following modifier:

| Rel with Parent | VT  | Concept Name            | VM |
|-----------------|-----|-------------------------|----|
| HAS PROPERTIES  | NUM | Heart Rate (LN, 8867-4) | 1  |

The **Mean** column indicates if a measurement has an average value associated it. A mean value is defined in the SR by a measurement having the following modifier:

| Rel with Parent | VT   | Concept Name             | VM | Concept Value       |
|-----------------|------|--------------------------|----|---------------------|
| HAS CONCEPT MOD | CODE | Derivation (DCM, 121401) | 1  | Mean (SRT, R-00317) |

Values with the Simpson Disk Number modifier represent the disks that are generated by the trace tool when performing MOD Area/Volume measurements. These disk values have units of "cm". When a Simpson Disk Number is associated with a volume as a modifier, the volume is defined in the SR with the modifier:

| Rel with Parent | VT   | Concept Name                                    | VM | Concept Value |
|-----------------|------|-------------------------------------------------|----|---------------|
| HAS CONCEPT MOD | TEXT | Simpson Disk Number (99SIEMENS, SimpsonDiskNum) | 1  | Disk number   |

Private sections that contain the results of Clinical Application Packages are defined as Findings CONTAINERS with the modifier

| Rel with Parent | VT   | Concept Name                                  | VM | Concept Value                                         |
|-----------------|------|-----------------------------------------------|----|-------------------------------------------------------|
| HAS CONCEPT MOD | CODE | Clinical Application Package (99SIEMENS, CAP) | 1  | See section <b>Error! Reference source not found.</b> |

Worksheet edits to CAP results are not saved to the SR.

Worksheets are identified in the Label column by the following notation:

| Notation | Worksheet           | Notation | Worksheet           | Notation | Worksheet        |
|----------|---------------------|----------|---------------------|----------|------------------|
| [A]      | Arteries            | [P]      | PISA                | [V]      | Volumes          |
| [Ao]     | Ao and Aortic Valve | [PV]     | Pulmonary Valve     | [VVI-D]  | VVI-Displacement |
| [D]      | Diastology          | [PVn]    | Pulmonary Veins     | [VVI-S]  | VVI-Strain       |
| [LA]     | Left Atrium         | [RA]     | Right Atrium        | [VVI-SR] | VVI-Strain Rate  |
| [LR]     | LVA and RVA         | [RV]     | Right Ventricle     | [VVI-V]  | VVI-Velocity     |
| [LV]     | Left Ventricle      | [SE]     | Stress Echo and LVA | [3DP]    | 3D PISA          |
| [M]      | M-Mode              | [Sh]     | Shunts              |          |                  |
| [MV]     | Mitral Valve        | [TV]     | Tricuspid Valve     |          |                  |

### 9.1.1 Patient Characteristics

| HR | Mean | Label                          | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                   |
|----|------|--------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------|
|    |      | <b>Patient Characteristics</b> | Container: Patient Characteristics (DCM, 121118)       |                                                                                             |
|    |      | BSA                            | Body Surface Area (LN, 8277-6)                         | Body Surface Area Formula: $BSA = 0.007184 \cdot WT^{0.425} \cdot HT^{0.725}$ (DCM, 122241) |
|    |      | BP                             | Diastolic Blood Pressure (SRT, F-008ED)                |                                                                                             |
|    |      | Age                            | Subject Age (DCM, 121033)                              |                                                                                             |
|    |      | Sex                            | Subject Sex (DCM, 121032)                              |                                                                                             |
|    |      | BP                             | Systolic Blood Pressure (SRT, F-008EC)                 |                                                                                             |

### 9.1.2 Left Ventricle

| HR | Mean | Label                 | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                   |
|----|------|-----------------------|--------------------------------------------------------|---------------------------------------------|
|    |      | <b>Left Ventricle</b> | Container: Findings (DCM, 121070)                      | Finding Site: Left Ventricle (SRT, T-32600) |

| HR                                                | Mean | Label                          | Code Meaning<br>(Coding Scheme Designator, Code Value)               | Modifiers                                                                                                        |
|---------------------------------------------------|------|--------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                                |                                                                      |                                                                                                                  |
|                                                   |      | [LV] Cubed: LV CI              | Cardiac Index (SRT, F-32110)                                         | Measurement Method: Cube Method (DCM, 125206)                                                                    |
|                                                   |      | [LV] Teichholz: LV CI          | Cardiac Index (SRT, F-32110)                                         | Measurement Method: Teichholz (DCM, 125209)                                                                      |
|                                                   |      | [V] MOD, A2C: LV CI            | Cardiac Index (SRT, F-32110)                                         | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)  |
|                                                   |      | [V] MOD, A4C: LV CI            | Cardiac Index (SRT, F-32110)                                         | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C) |
|                                                   |      | [V] MOD, Biplane: LV CI        | Cardiac Index (SRT, F-32110)                                         | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                       |
|                                                   |      | [LV] Cubed: LV CO              | Cardiac Output (SRT, F-32100)                                        | Measurement Method: Cube Method (DCM, 125206)                                                                    |
|                                                   |      | [LV] Teichholz: LV CO          | Cardiac Output (SRT, F-32100)                                        | Measurement Method: Teichholz (DCM, 125209)                                                                      |
|                                                   |      | [V] MOD, A2C: LV CO            | Cardiac Output (SRT, F-32100)                                        | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)  |
|                                                   |      | [V] MOD, A4C: LV CO            | Cardiac Output (SRT, F-32100)                                        | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C) |
|                                                   |      | [V] MOD, Biplane: LV CO        | Cardiac Output (SRT, F-32100)                                        | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                       |
|                                                   |      | [Ao] Aortic Valve: LVOT Area s | Cardiovascular Orifice Area (SRT, G-038E)                            | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                        |
|                                                   | X    | [Ao] AR Jet/LVOT: LVOT Area d  | Cardiovascular Orifice Area (SRT, G-038E)                            | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)<br>Cardiac Cycle Point: End Diastole (SRT, F-32011)    |
| X                                                 | X    | [Ao] Aortic Valve: LVOT Diam s | Cardiovascular Orifice Diameter (SRT, G-038F)                        | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)<br>Cardiac Cycle Point: Systole (SRT, F-32020)         |
|                                                   |      | [LV] Cubed: LV HR              | Composite heart rate for LV CO, Cubed (99SIEMENS, LVHRCOCube2D)      |                                                                                                                  |
|                                                   |      | [V] MOD, A2C: HR               | Composite heart rate for LV CO, MOD A2C (99SIEMENS, LVHRCOA2C)       |                                                                                                                  |
|                                                   |      | [V] MOD, A4C: HR               | Composite heart rate for LV CO, MOD A4C (99SIEMENS, LVHRCOA4C)       |                                                                                                                  |
|                                                   |      | [V] MOD, Biplane: HR           | Composite heart rate for LV CO, MOD Biplane (99SIEMENS, LVHRCOMODBP) |                                                                                                                  |

| HR | Mean | Label                                | Code Meaning<br>(Coding Scheme Designator, Code Value)                  | Modifiers                                                                          |
|----|------|--------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|    |      | [LV] Teichholz: LV HR                | Composite heart rate for LV CO, Teichholz (99SIEMENS, LVHRCOTEich2D)    |                                                                                    |
|    |      | [LV] IVS %Thick                      | Interventricular Septum % Thickening (LN, 18054-7)                      | Image View: Parasternal long axis (SRT, G-0396)                                    |
|    | X    | [LV] Diastole: IVS                   | Interventricular Septum Diastolic Thickness (LN, 18154-5)               | Image View: Parasternal long axis (SRT, G-0396)                                    |
|    | X    | [LV] PSAX, Diastole: IVS             | Interventricular Septum Diastolic Thickness (LN, 18154-5)               | Image View: Parasternal short axis (SRT, G-0397)                                   |
|    | X    | [LV] PSAX, Systole: IVS              | Interventricular Septum Systolic Thickness (LN, 18158-6)                | Image View: Parasternal short axis (SRT, G-0397)                                   |
|    | X    | [LV] Systole: IVS                    | Interventricular Septum Systolic Thickness (LN, 18158-6)                | Image View: Parasternal long axis (SRT, G-0396)                                    |
|    |      | [LV] IVS/LVPW                        | Interventricular Septum to Posterior Wall Thickness Ratio (LN, 18155-2) |                                                                                    |
| X  | X    | [V] LV MOD, A2C d: Major Axis        | Left Ventricle diastolic major axis (LN, 18077-8)                       | Image View: Apical two chamber (SRT, G-A19B)                                       |
| X  | X    | [V] LV MOD, A4C d: Major Axis        | Left Ventricle diastolic major axis (LN, 18077-8)                       | Image View: Apical four chamber (SRT, G-A19C)                                      |
|    | X    | [LV] PSAX, Diastole: LV Epi Area pap | Left Ventricle Epicardial Diastolic Area, psax pap view (SRT, G-0379)   |                                                                                    |
| X  | X    | [LV] Diastole: LVID                  | Left Ventricle Internal End Diastolic Dimension (LN, 29436-3)           | Image View: Parasternal long axis (SRT, G-0396)                                    |
| X  | X    | [LV] PSAX, Diastole: LVID chord      | Left Ventricle Internal End Diastolic Dimension (LN, 29436-3)           | Image View: Parasternal short axis at the level of the mitral chords (SRT, G-0399) |
| X  | X    | [LV] PSAX, Diastole: LVID pap        | Left Ventricle Internal End Diastolic Dimension (LN, 29436-3)           | Image View: Parasternal short axis at the Papillary Muscle level (SRT, G-039B)     |
| X  | X    | [LV] PSAX, Systole: LVID chord       | Left Ventricle Internal Systolic Dimension (LN, 29438-9)                | Image View: Parasternal short axis at the level of the mitral chords (SRT, G-0399) |
| X  | X    | [LV] PSAX, Systole: LVID pap         | Left Ventricle Internal Systolic Dimension (LN, 29438-9)                | Image View: Parasternal short axis at the Papillary Muscle level (SRT, G-039B)     |
| X  | X    | [LV] Systole: LVID                   | Left Ventricle Internal Systolic Dimension (LN, 29438-9)                | Image View: Parasternal long axis (SRT, G-0396)                                    |
|    |      | [LV] LV Mass                         | Left Ventricle Mass (LN, 18087-7)                                       |                                                                                    |
|    |      | [LV] LV Mass/BSA                     | Left Ventricle Mass (LN, 18087-7)                                       | Index: Body Surface Area (LN, 8277-6)                                              |
|    |      | [LV] LV Mass/Ht                      | Left Ventricle Mass (LN, 18087-7)                                       | Index: Patient Height (LN, 8302-2)                                                 |
|    |      | [LV] A-L: LV Mass                    | Left Ventricle Mass (LN, 18087-7)                                       | Measurement Method: Area-Length Single Plane (DCM, 125205)                         |

| HR | Mean | Label                                       | Code Meaning<br>(Coding Scheme Designator, Code Value)           | Modifiers                                                                                                           |
|----|------|---------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|    |      | [LV] A-L: LV Mass/BSA                       | Left Ventricle Mass (LN, 18087-7)                                | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Index: Body Surface Area (LN, 8277-6)                 |
|    |      | [LV] A-L: LV Mass/Ht                        | Left Ventricle Mass (LN, 18087-7)                                | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Index: Patient Height (LN, 8302-2)                    |
|    |      | [LV] T-E: LV Mass                           | Left Ventricle Mass (LN, 18087-7)                                | Measurement Method: Left Ventricle Mass by Truncated Ellipse (DCM, 125222)                                          |
|    |      | [LV] T-E: LV Mass/BSA                       | Left Ventricle Mass (LN, 18087-7)                                | Measurement Method: Left Ventricle Mass by Truncated Ellipse (DCM, 125222)<br>Index: Body Surface Area (LN, 8277-6) |
|    |      | [LV] T-E: LV Mass/Ht                        | Left Ventricle Mass (LN, 18087-7)                                | Measurement Method: Left Ventricle Mass by Truncated Ellipse (DCM, 125222)<br>Index: Patient Height (LN, 8302-2)    |
|    |      | [LV] LVPW %Thick                            | Left Ventricle Posterior Wall % Thickening (LN, 18053-9)         | Image View: Parasternal long axis (SRT, G-0396)                                                                     |
|    | X    | [LV] Diastole: LVPW                         | Left Ventricle Posterior Wall Diastolic Thickness (LN, 18152-9)  | Image View: Parasternal long axis (SRT, G-0396)                                                                     |
|    |      | [LV] PSAX, Diastole: LV Mean Wall Thickness | Left Ventricle Posterior Wall Diastolic Thickness (LN, 18152-9)  | Derivation: Mean (SRT, R-00317)                                                                                     |
|    | X    | [LV] PSAX, Diastole: LVPW chord             | Left Ventricle Posterior Wall Diastolic Thickness (LN, 18152-9)  | Image View: Parasternal short axis at the level of the mitral chords (SRT, G-0399)                                  |
|    | X    | [LV] PSAX, Diastole: LVPW pap               | Left Ventricle Posterior Wall Diastolic Thickness (LN, 18152-9)  | Image View: Parasternal short axis at the Papillary Muscle level (SRT, G-039B)                                      |
|    | X    | [LV] PSAX, Systole: LVPW chord              | Left Ventricle Posterior Wall Systolic Thickness (LN, 18156-0)   | Image View: Parasternal short axis at the level of the mitral chords (SRT, G-0399)                                  |
|    | X    | [LV] PSAX, Systole: LVPW pap                | Left Ventricle Posterior Wall Systolic Thickness (LN, 18156-0)   | Image View: Parasternal short axis at the Papillary Muscle level (SRT, G-039B)                                      |
|    | X    | [LV] Systole: LVPW                          | Left Ventricle Posterior Wall Systolic Thickness (LN, 18156-0)   | Image View: Parasternal long axis (SRT, G-0396)                                                                     |
| X  | X    | [V] LV MOD, A4C d: Semi-Major Axis          | Left Ventricle Semi-major Axis Diastolic Dimension (SRT, G-0377) |                                                                                                                     |
|    |      | [LV] Systole: LV Major max                  | Left Ventricle systolic major axis (LN, 18076-0)                 | Derivation: Maximum (SRT, G-A437)                                                                                   |
|    | X    | [LV] Systole: LV Major SCLAX                | Left Ventricle systolic major axis (LN, 18076-0)                 | Image View: Subcostal long axis (SRT, G-039E)                                                                       |
| X  | X    | [V] LV MOD, A2C s: Major Axis               | Left Ventricle systolic major axis (LN, 18076-0)                 | Image View: Apical two chamber (SRT, G-A19B)                                                                        |
| X  | X    | [V] LV MOD, A4C s: Major Axis               | Left Ventricle systolic major axis (LN, 18076-0)                 | Image View: Apical four chamber (SRT, G-A19C)                                                                       |

| HR | Mean | Label                                 | Code Meaning<br>(Coding Scheme Designator, Code Value)                     | Modifiers                                                                                                        |
|----|------|---------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| X  | X    | [V] LV MOD, A4C d: Tr Semi-Major Axis | Left Ventricle Truncated Semi-major Axis Diastolic Dimension (SRT, G-0378) |                                                                                                                  |
| X  | X    | [LV] PSAX, Diastole: LV Area pap      | Left Ventricular Diastolic Area (SRT, G-0375)                              | Image View: Parasternal short axis at the Papillary Muscle level (SRT, G-039B)                                   |
| X  | X    | [V] LV MOD, A2C d: LV Area            | Left Ventricular Diastolic Area (SRT, G-0375)                              | Image View: Apical two chamber (SRT, G-A19B)                                                                     |
| X  | X    | [V] LV MOD, A4C d: LV Area            | Left Ventricular Diastolic Area (SRT, G-0375)                              | Image View: Apical four chamber (SRT, G-A19C)                                                                    |
|    |      | [LV] Cubed: LV EF                     | Left Ventricular Ejection Fraction (LN, 18043-0)                           | Measurement Method: Cube Method (DCM, 125206)                                                                    |
|    |      | [LV] PSAX, Cubed: LV EF               | Left Ventricular Ejection Fraction (LN, 18043-0)                           | Measurement Method: Cube Method (DCM, 125206)<br>Image View: Parasternal short axis (SRT, G-0397)                |
|    |      | [LV] PSAX, Teichholz: LV EF           | Left Ventricular Ejection Fraction (LN, 18043-0)                           | Measurement Method: Teichholz (DCM, 125209)<br>Image View: Parasternal short axis (SRT, G-0397)                  |
|    |      | [LV] Teichholz: LV EF                 | Left Ventricular Ejection Fraction (LN, 18043-0)                           | Measurement Method: Teichholz (DCM, 125209)                                                                      |
|    |      | [V] MOD, A2C: LV EF                   | Left Ventricular Ejection Fraction (LN, 18043-0)                           | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)  |
|    |      | [V] MOD, A4C: LV EF                   | Left Ventricular Ejection Fraction (LN, 18043-0)                           | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C) |
|    |      | [V] MOD, Biplane: LV EF               | Left Ventricular Ejection Fraction (LN, 18043-0)                           | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                       |
|    |      | [LV] Cubed: LV Vol d                  | Left Ventricular End Diastolic Volume (LN, 18026-5)                        | Measurement Method: Cube Method (DCM, 125206)                                                                    |
|    |      | [LV] Teichholz: LV Vol d              | Left Ventricular End Diastolic Volume (LN, 18026-5)                        | Measurement Method: Teichholz (DCM, 125209)                                                                      |
|    |      | [V] Area-Length, A2C d: LV Vol        | Left Ventricular End Diastolic Volume (LN, 18026-5)                        | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical two chamber (SRT, G-A19B)       |
|    |      | [V] Area-Length, A4C d: LV Vol        | Left Ventricular End Diastolic Volume (LN, 18026-5)                        | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical four chamber (SRT, G-A19C)      |
|    |      | [V] Area-Length, Biplane d: LV Vol    | Left Ventricular End Diastolic Volume (LN, 18026-5)                        | Measurement Method: Area-Length Biplane (DCM, 125204)                                                            |
| X  | X    | [V] LV MOD, A2C d: LV Vol             | Left Ventricular End Diastolic Volume (LN, 18026-5)                        | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)  |

| HR | Mean | Label                              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                 |
|----|------|------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [V] LV MOD, A2C d: Vol/BSA         | Left Ventricular End Diastolic Volume (LN, 18026-5)    | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)<br>Index: Body Surface Area (LN, 8277-6)  |
| X  | X    | [V] LV MOD, A4C d: LV Vol          | Left Ventricular End Diastolic Volume (LN, 18026-5)    | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                          |
|    |      | [V] LV MOD, A4C d: Vol/BSA         | Left Ventricular End Diastolic Volume (LN, 18026-5)    | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Index: Body Surface Area (LN, 8277-6) |
|    |      | [V] LV MOD, Biplane d: LV Vol      | Left Ventricular End Diastolic Volume (LN, 18026-5)    | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                                                                |
|    |      | [V] LV MOD, Biplane d: Vol/BSA     | Left Ventricular End Diastolic Volume (LN, 18026-5)    | Measurement Method: Method of Disks, Biplane (DCM, 125207)<br>Index: Body Surface Area (LN, 8277-6)                                                       |
|    |      | [LV] Cubed: LV Vol s               | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Cube Method (DCM, 125206)                                                                                                             |
|    |      | [LV] Teichholz: LV Vol s           | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Teichholz (DCM, 125209)                                                                                                               |
|    |      | [V] Area-Length, A2C s: LV Vol     | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical two chamber (SRT, G-A19B)                                                |
|    |      | [V] Area-Length, A4C s: LV Vol     | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical four chamber (SRT, G-A19C)                                               |
|    |      | [V] Area-Length, Biplane s: LV Vol | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Area-Length Biplane (DCM, 125204)                                                                                                     |
| X  | X    | [V] LV MOD, A2C s: LV Vol          | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)                                           |
|    |      | [V] LV MOD, A2C s: Vol/BSA         | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)<br>Index: Body Surface Area (LN, 8277-6)  |
| X  | X    | [V] LV MOD, A4C s: LV Vol          | Left Ventricular End Systolic Volume (LN, 18148-7)     | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                          |

| HR | Mean | Label                           | Code Meaning<br>(Coding Scheme Designator, Code Value)                           | Modifiers                                                                                                                                                 |
|----|------|---------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [V] LV MOD, A4C s: Vol/BSA      | Left Ventricular End Systolic Volume (LN, 18148-7)                               | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Index: Body Surface Area (LN, 8277-6) |
|    |      | [V] LV MOD, Biplane s: LV Vol   | Left Ventricular End Systolic Volume (LN, 18148-7)                               | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                                                                |
|    |      | [V] LV MOD, Biplane s: Vol/BSA  | Left Ventricular End Systolic Volume (LN, 18148-7)                               | Measurement Method: Method of Disks, Biplane (DCM, 125207)<br>Index: Body Surface Area (LN, 8277-6)                                                       |
|    |      | [V] MOD, A2C: LV %FAC           | Left Ventricular Fractional Area Change (SRT, G-0376)                            | Image View: Apical two chamber (SRT, G-A19B)                                                                                                              |
|    |      | [V] MOD, A4C: LV %FAC           | Left Ventricular Fractional Area Change (SRT, G-0376)                            | Image View: Apical four chamber (SRT, G-A19C)                                                                                                             |
|    |      | [LV] Cubed: LV %FS              | Left Ventricular Fractional Shortening (LN, 18051-3)                             | Measurement Method: Cube Method (DCM, 125206)                                                                                                             |
|    |      | [LV] LV %FS                     | Left Ventricular Fractional Shortening (LN, 18051-3)                             | Image View: Parasternal long axis (SRT, G-0396)                                                                                                           |
|    |      | [LV] Teichholz: LV %FS          | Left Ventricular Fractional Shortening (LN, 18051-3)                             | Measurement Method: Teichholz (DCM, 125209)                                                                                                               |
| X  | X    | [LV] PSAX, Systole: LV Area pap | Left Ventricular Systolic Area (SRT, G-0374)                                     | Image View: Parasternal short axis at the Papillary Muscle level (SRT, G-039B)                                                                            |
| X  | X    | [V] LV MOD, A2C s: LV Area      | Left Ventricular Systolic Area (SRT, G-0374)                                     | Image View: Apical two chamber (SRT, G-A19B)                                                                                                              |
| X  | X    | [V] LV MOD, A4C s: LV Area      | Left Ventricular Systolic Area (SRT, G-0374)                                     | Image View: Apical four chamber (SRT, G-A19C)                                                                                                             |
|    |      | [ Not shown ]                   | LV vol, d MOD A2C (disk <n>) (99SIEMENS, LVvdMODA2Cdisk<n>)<br>where <n> = 0..19 |                                                                                                                                                           |
|    |      | [ Not shown ]                   | LV vol, d MOD A4C (disk <n>) (99SIEMENS, LVvdMODA4Cdisk<n>)<br>where <n> = 0..19 |                                                                                                                                                           |
|    |      | [ Not shown ]                   | LV vol, s MOD A2C (disk <n>) (99SIEMENS, LVvsMODA2Cdisk<n>)<br>where <n> = 0..19 |                                                                                                                                                           |
|    |      | [ Not shown ]                   | LV vol, s MOD A4C (disk <n>) (99SIEMENS, LVvsMODA4Cdisk<n>)<br>where <n> = 0..19 |                                                                                                                                                           |
| X  | X    | [V] LV MOD, A2C d: Minor Axis   | Minor Axis (SRT, G-A194)                                                         | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B)                                                              |

| HR                                                                             | Mean | Label                             | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                 |
|--------------------------------------------------------------------------------|------|-----------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| X                                                                              | X    | [V] LV MOD, A2C s: Minor Axis     | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical two chamber (SRT, G-A19B)                                                               |
| X                                                                              | X    | [V] LV MOD, A4C d: Minor Axis     | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                             |
| X                                                                              | X    | [V] LV MOD, A4C s: Minor Axis     | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                              |
|                                                                                |      | [LV] PSAX, Diastole: LV Minor pap | Minor Radius (99SIEMENS, MinorRadius)                  | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Parasternal short axis at the Papillary Muscle level (SRT, G-039B)                            |
|                                                                                |      | [LV] Cubed: LV SI                 | Stroke Index (SRT, F-00078)                            | Measurement Method: Cube Method (DCM, 125206)                                                                                                             |
|                                                                                |      | [LV] Teichholz: LV SI             | Stroke Index (SRT, F-00078)                            | Measurement Method: Teichholz (DCM, 125209)                                                                                                               |
|                                                                                |      | [V] MOD, A2C: LV SI               | Stroke Index (SRT, F-00078)                            | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)<br>Index: Body Surface Area (LN, 8277-6)  |
|                                                                                |      | [V] MOD, A4C: LV SI               | Stroke Index (SRT, F-00078)                            | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Index: Body Surface Area (LN, 8277-6) |
|                                                                                |      | [V] MOD, Biplane: LV SI           | Stroke Index (SRT, F-00078)                            | Measurement Method: Method of Disks, Biplane (DCM, 125207)<br>Index: Body Surface Area (LN, 8277-6)                                                       |
|                                                                                |      | [Ao] Aortic Valve: LVOT SV        | Stroke Volume (SRT, F-32120)                           | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                 |
|                                                                                |      | [LV] Cubed: LV SV                 | Stroke Volume (SRT, F-32120)                           | Measurement Method: Cube Method (DCM, 125206)                                                                                                             |
|                                                                                |      | [LV] Teichholz: LV SV             | Stroke Volume (SRT, F-32120)                           | Measurement Method: Teichholz (DCM, 125209)                                                                                                               |
|                                                                                |      | [V] MOD, A2C: LV SV               | Stroke Volume (SRT, F-32120)                           | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)                                           |
|                                                                                |      | [V] MOD, A4C: LV SV               | Stroke Volume (SRT, F-32120)                           | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                          |
|                                                                                |      | [V] MOD, Biplane: LV SV           | Stroke Volume (SRT, F-32120)                           | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                                                                |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                   |                                                        |                                                                                                                                                           |

| HR                                                            | Mean | Label                                                | Code Meaning<br>(Coding Scheme Designator, Code Value)                    | Modifiers                                                                                                                                                                         |
|---------------------------------------------------------------|------|------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                               |      | [Ao] Aortic Valve: LVOT CO                           | Cardiac Output (SRT, F-32100)                                             | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                                         |
|                                                               | X    | [LV] Myocardial Performance Index: MV Close-Open Dur | Closure to Opening Time (LN, 59082-8)                                     |                                                                                                                                                                                   |
|                                                               |      | [Ao] Aortic Valve: LVOT HR                           | Composite heart rate for LVOT CO (99SIEMENS, LVOTHRCO)                    |                                                                                                                                                                                   |
|                                                               |      | [P] LVOT PISA                                        | Flow Area (LN, 20226-7)                                                   | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)<br>Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)                                                  |
| X                                                             | X    | [LV] LV ET                                           | Left Ventricular ejection time (DCM, 122211)                              |                                                                                                                                                                                   |
|                                                               | X    | [LV] Myocardial Performance Index: LVOT ET           | Left Ventricular ejection time (DCM, 122211)                              | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                                         |
|                                                               |      | [LV] LV Pressure ED                                  | Left Ventricular End-Diastolic Pressure (SRT, F-03E0E)                    |                                                                                                                                                                                   |
|                                                               |      | [LV] Myocardial Performance Index: LV MPI            | Left Ventricular Index of Myocardial Performance (SRT, G-037F)            |                                                                                                                                                                                   |
| X                                                             | X    | [LV] LV IVCT<br>[D] MV Flow: LV IVCT                 | Left Ventricular Isovolumic Contraction Time (SRT, G-037E)                |                                                                                                                                                                                   |
|                                                               | X    | [LV] LV IVRT<br>[D] MV Flow: LV IVRT                 | Left Ventricular Isovolumic Relaxation Time (LN, 18071-1)                 |                                                                                                                                                                                   |
|                                                               |      | [LV] LV Pressure s                                   | Left Ventricular Systolic Pressure (SRT, F-03E0D)                         |                                                                                                                                                                                   |
|                                                               | X    | [Ao] Aortic Valve: LVOT Mean Grad                    | Mean Gradient (LN, 20256-4)                                               | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                                         |
| X                                                             | X    | [Ao] Aortic Valve: LVOT Vmean                        | Mean Velocity (LN, 20352-1)                                               | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                                         |
|                                                               |      | [Ao] Aortic Valve: LVOT Peak Grad                    | Peak Gradient (LN, 20247-3)                                               | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                                         |
|                                                               |      | [P] LVOT Inst Flow Rate                              | Peak Instantaneous Flow Rate (LN, 34141-2)                                | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)<br>Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047) |
| X                                                             | X    | [Ao] Aortic Valve: LVOT Vmax                         | Peak Velocity (LN, 11726-7)                                               | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                                         |
|                                                               |      | [MV] MV E/E' Lateral<br>[D] PW DTI, MV Lateral: E/E' | Ratio of MV Peak Velocity to LV Peak Tissue Velocity E-Wave (SRT, G-037B) | Finding Site: Lateral Mitral Annulus (SRT, G-0392)                                                                                                                                |
|                                                               |      | [MV] MV E/E' Medial<br>[D] PW DTI, MV Medial E/E'    | Ratio of MV Peak Velocity to LV Peak Tissue Velocity E-Wave (SRT, G-037B) | Finding Site: Medial Mitral Annulus (SRT, G-0391)                                                                                                                                 |
| X                                                             | X    | [Ao] Aortic Valve: LVOT VTI                          | Velocity Time Integral (LN, 20354-7)                                      | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                                                                         |
| Measurements of Image Mode: Doppler Color Flow (SRT, R-409E2) |      |                                                      |                                                                           |                                                                                                                                                                                   |

| HR                                                        | Mean | Label                                            | Code Meaning<br>(Coding Scheme Designator, Code Value)                                 | Modifiers                                                                                                                        |
|-----------------------------------------------------------|------|--------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                                                           | X    | [P] LVOT Aliasing Velocity                       | Alias velocity (LN, 59130-5)                                                           | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)                                                                        |
|                                                           | X    | [P] LVOT PISA Radius                             | Flow Radius (LN, 59102-4)                                                              | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)<br>Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216) |
| Measurements of Image Mode: Doppler Pulsed (SRT, R-409E4) |      |                                                  |                                                                                        |                                                                                                                                  |
|                                                           | X    | [MV] MV E' Lateral<br>[D] PW DTI, MV Lateral: E' | Left Ventricular Peak Early Diastolic Tissue Velocity (SRT, G-037A)                    | Finding Site: Lateral Mitral Annulus (SRT, G-0392)                                                                               |
|                                                           | X    | [MV] MV E' Medial<br>[D] PW DTI, MV Medial E'    | Left Ventricular Peak Early Diastolic Tissue Velocity (SRT, G-037A)                    | Finding Site: Medial Mitral Annulus (SRT, G-0391)                                                                                |
|                                                           | X    | [MV] MV S' Lateral<br>[D] PW DTI, MV Lateral: S' | Left Ventricular Peak Systolic Tissue Velocity (SRT, G-037D)                           | Finding Site: Lateral Mitral Annulus (SRT, G-0392)                                                                               |
|                                                           | X    | [MV] MV S' Medial<br>[D] PW DTI, MV Medial S'    | Left Ventricular Peak Systolic Tissue Velocity (SRT, G-037D)                           | Finding Site: Medial Mitral Annulus (SRT, G-0391)                                                                                |
|                                                           | X    | [MV] MV A' Lateral<br>[D] PW DTI, MV Lateral: A' | LV Peak Diastolic Tissue Velocity During Atrial Systole (SRT, G-037C)                  | Finding Site: Lateral Mitral Annulus (SRT, G-0392)                                                                               |
|                                                           | X    | [MV] MV A' Medial<br>[D] PW DTI, MV Medial A'    | LV Peak Diastolic Tissue Velocity During Atrial Systole (SRT, G-037C)                  | Finding Site: Medial Mitral Annulus (SRT, G-0391)                                                                                |
| Measurements of Image Mode: M mode (SRT, G-0394)          |      |                                                  |                                                                                        |                                                                                                                                  |
|                                                           |      | [M] LV CI                                        | Cardiac Index (SRT, F-32110)                                                           | Index: Body Surface Area (LN, 8277-6)                                                                                            |
|                                                           |      | [M] LV CO                                        | Cardiac Output (SRT, F-32100)                                                          |                                                                                                                                  |
|                                                           | X    | [M] LVOT Diam s                                  | Cardiovascular Orifice Diameter (SRT, G-038F)                                          | Finding Site: Left Ventricle Outflow Tract (SRT, T-32650)<br>Cardiac Cycle Point: Systole (SRT, F-32020)                         |
|                                                           |      | [M] Wall Stress Circum                           | Circumferential Wall Stress (99SIEMENS, WScircum)                                      |                                                                                                                                  |
|                                                           |      | [M] LV PEP corrected HR                          | Composite heart rate for LV Pre-ejection Period, corrected (99SIEMENS, LVHRPEPcorr)    |                                                                                                                                  |
|                                                           |      | [M] LV HR                                        | Composite heart rate for M-mode LV CO (99SIEMENS, LVHRCOMmode)                         |                                                                                                                                  |
|                                                           |      | [M] LV ET HR                                     | Composite heart rate for M-Mode LV Ejection Time (99SIEMENS, LVHRETMmode)              |                                                                                                                                  |
|                                                           |      | [M] Mean VCFc HR                                 | Composite HR for Mean Velocity of Circumferential, corrected (99SIEMENS, LVHRmeanVcfc) |                                                                                                                                  |
|                                                           |      | [M] EPSS/LVID d                                  | EPSS to Diastolic LVID Ratio (99SIEMENS, RATIOepss_lvidd)                              |                                                                                                                                  |

| HR | Mean | Label                 | Code Meaning<br>(Coding Scheme Designator, Code Value)                       | Modifiers                             |
|----|------|-----------------------|------------------------------------------------------------------------------|---------------------------------------|
|    |      | [M] LV ET corrected   | Heart Rate-Corrected Ejection Time (LN, 59086-9)                             |                                       |
|    |      | [M] LV PEP corrected  | Heart Rate-Corrected Pre-Ejection Period (LN, 59087-7)                       |                                       |
|    |      | [M] Mean VCFc         | HR-Corrected Mean Velocity of Circumferential Fiber Shortening (LN, 59118-0) |                                       |
|    |      | [M] IVS %Thick        | Interventricular Septum % Thickening (LN, 18054-7)                           |                                       |
|    | X    | [M] IVS d             | Interventricular Septum Diastolic Thickness (LN, 18154-5)                    |                                       |
|    | X    | [M] IVS s             | Interventricular Septum Systolic Thickness (LN, 18158-6)                     |                                       |
|    |      | [M] IVS/LVPW          | Interventricular Septum to Posterior Wall Thickness Ratio (LN, 18155-2)      |                                       |
| X  | X    | [M] LVID d            | Left Ventricle Internal End Diastolic Dimension (LN, 29436-3)                |                                       |
| X  | X    | [M] LVID s            | Left Ventricle Internal Systolic Dimension (LN, 29438-9)                     |                                       |
|    |      | [M] LV Mass           | Left Ventricle Mass (LN, 18087-7)                                            |                                       |
|    |      | [M] LV Mass/BSA       | Left Ventricle Mass (LN, 18087-7)                                            | Index: Body Surface Area (LN, 8277-6) |
|    |      | [M] LV Mass/Ht        | Left Ventricle Mass (LN, 18087-7)                                            | Index: Patient Height (LN, 8302-2)    |
|    |      | [M] Wall Stress Merid | Left Ventricle Meridional Wall Stress (LN, 59097-6)                          |                                       |
|    |      | [M] LVPW %Thick       | Left Ventricle Posterior Wall % Thickening (LN, 18053-9)                     |                                       |
|    | X    | [M] LVPW d            | Left Ventricle Posterior Wall Diastolic Thickness (LN, 18152-9)              |                                       |
|    | X    | [M] LVPW s            | Left Ventricle Posterior Wall Systolic Thickness (LN, 18156-0)               |                                       |
|    |      | [M] LV EF             | Left Ventricular Ejection Fraction (LN, 18043-0)                             |                                       |
| X  | X    | [M] LV ET             | Left Ventricular ejection time (DCM, 122211)                                 |                                       |
|    |      | [M] LV Vol d          | Left Ventricular End Diastolic Volume (LN, 18026-5)                          |                                       |
|    |      | [M] LV Vol s          | Left Ventricular End Systolic Volume (LN, 18148-7)                           |                                       |
|    |      | [M] LV %FS            | Left Ventricular Fractional Shortening (LN, 18051-3)                         |                                       |
|    | X    | [M] PE Diam           | Pericardial Effusion Diameter (99SIEMENS, DiamPE)                            |                                       |
| X  | X    | [M] LV PEP            | Pre-Ejection Period (LN, 59085-1)                                            |                                       |

| HR | Mean | Label            | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                             |
|----|------|------------------|--------------------------------------------------------|---------------------------------------|
|    |      | [M] LV PEP/ET    | Pre-Ejection Period/Ejection Time Ratio (LN, 59088-5)  |                                       |
|    |      | [M] LV SI        | Stroke Index (SRT, F-00078)                            | Index: Body Surface Area (LN, 8277-6) |
|    |      | [M] LV SV        | Stroke Volume (SRT, F-32120)                           |                                       |
|    | X    | [M] LV Inflow Vp | Velocity of Flow Propagation (LN, 59115-6)             |                                       |

### 9.1.3 Right Ventricle

| HR                                                | Mean | Label                                           | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                        |
|---------------------------------------------------|------|-------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Right Ventricle</b>                            |      |                                                 | Container: Findings (DCM, 121070)                      | Finding Site: Right Ventricle (SRT, T-32500)                                                                                                                     |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                                                 |                                                        |                                                                                                                                                                  |
|                                                   | X    | [V] MOD, A4C d: RV Area                         | Area (SRT, G-A166)                                     | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C) |
|                                                   | X    | [V] MOD, A4C s: RV Area                         | Area (SRT, G-A166)                                     | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)  |
|                                                   |      | [RV] RVOT Area                                  | Cardiovascular Orifice Area (SRT, G-038E)              | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                       |
| X                                                 | X    | [RV] RVOT Diam s                                | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)<br>Cardiac Cycle Point: Systole (SRT, F-32020)                                                        |
|                                                   | X    | [RV] RVOT Diam s SCLAX                          | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal long axis (SRT, G-039E)       |
| X                                                 | X    | [RV] RV Major d A4C<br>[V] MOD, A4C d: RV Major | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                    |
| X                                                 | X    | [RV] RV Major s A4C<br>[V] MOD, A4C s: RV Major | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                     |
| X                                                 | X    | [RV] RV Minor d A4C                             | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                    |

| HR | Mean | Label                    | Code Meaning<br>(Coding Scheme Designator, Code Value)            | Modifiers                                                                                                                                                                                                                                     |
|----|------|--------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X  | X    | [RV] RV Minor s A4C      | Minor Axis (SRT, G-A194)                                          | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                  |
|    | X    | [RV] RVAW d PLAX         | Right Ventricular Anterior Wall Diastolic Thickness (LN, 18153-7) | Image View: Parasternal long axis (SRT, G-0396)                                                                                                                                                                                               |
|    | X    | [RV] RVAW s PLAX         | Right Ventricular Anterior Wall Systolic Thickness (LN, 18157-8)  | Image View: Parasternal long axis (SRT, G-0396)                                                                                                                                                                                               |
|    |      | [V] RV MOD, A4C: RV %FAC | Right Ventricular Fractional Area Change (99SIEMENS, RVFAC)       | Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                                                                 |
|    | X    | [RV] RVD d PLAX          | Right Ventricular Internal Diastolic Dimension (LN, 20304-2)      | Image View: Parasternal long axis (SRT, G-0396)                                                                                                                                                                                               |
|    | X    | [RV] RVD s PLAX          | Right Ventricular Internal Systolic Dimension (LN, 20305-9)       | Image View: Parasternal long axis (SRT, G-0396)                                                                                                                                                                                               |
|    |      | [V] RV MOD, A4C: RV EF   | RV Ejection Fraction (LN, 10231-9)                                | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                              |
|    |      | [RV] RVOT SV             | Stroke Volume (SRT, F-32120)                                      | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                                                                                    |
|    |      | [ Not shown ]            | Volume (SRT, G-D705)                                              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n><br>where <n> = 0..19 |
|    |      | [ Not shown ]            | Volume (SRT, G-D705)                                              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n><br>where <n> = 0..19  |
|    | X    | [V] MOD, A4C d: RV Vol   | Volume (SRT, G-D705)                                              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                              |
|    | X    | [V] MOD, A4C s: RV Vol   | Volume (SRT, G-D705)                                              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                               |

| HR                                                                             | Mean | Label                                                     | Code Meaning<br>(Coding Scheme Designator, Code Value)            | Modifiers                                                                                                                                                                          |
|--------------------------------------------------------------------------------|------|-----------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                                           |                                                                   |                                                                                                                                                                                    |
|                                                                                | X    | [RV] Myocardial Performance Index: TV Close-Open Dur      | Closure to Opening Time (LN, 59082-8)                             |                                                                                                                                                                                    |
|                                                                                |      | [P] RVOT PISA                                             | Flow Area (LN, 20226-7)                                           | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)<br>Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)                                                  |
| X                                                                              | X    | [RV] RV IVCT<br>[D] TV Flow: RV IVCT                      | Isovolumic Contraction Time (LN, 59084-4)                         |                                                                                                                                                                                    |
|                                                                                | X    | [RV] RV IVRT<br>[D] TV Flow: RV IVRT                      | Isovolumic Relaxation Time (LN, 59083-6)                          |                                                                                                                                                                                    |
| X                                                                              | X    | [RV] RVOT Mean Grad                                       | Mean Gradient (LN, 20256-4)                                       | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                         |
|                                                                                | X    | [RV] RVOT Vmean                                           | Mean Velocity (LN, 20352-1)                                       | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                         |
|                                                                                |      | [RV] RVOT Peak Grad                                       | Peak Gradient (LN, 20247-3)                                       | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                         |
|                                                                                |      | [P] RVOT Inst Flow Rate                                   | Peak Instantaneous Flow Rate (LN, 34141-2)                        | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)<br>Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047) |
|                                                                                | X    | [RV] RVOT Vmax                                            | Peak Velocity (LN, 11726-7)                                       | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                         |
|                                                                                |      | [RV] RV Free Wall: E/E'<br>[D] PW DTI, RV Free Wall: E/E' | Ratio of TV E Vmax to RV Free Wall Ea (99SIEMENS, RatioRVEePrime) |                                                                                                                                                                                    |
|                                                                                | X    | [RV] Myocardial Performance Index: RVOT ET                | Right Ventricular ejection time (DCM, 122213)                     | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                         |
|                                                                                |      | [RV] Myocardial Performance Index: RV MPI                 | Right Ventricular Index of Myocardial Performance (SRT, G-0381)   |                                                                                                                                                                                    |
|                                                                                |      | [RV] RVSP: RVSP (TR)                                      | Right Ventricular Peak Systolic Pressure (SRT, G-0380)            | Finding Site: Tricuspid Valve (SRT, T-35100)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                    |
|                                                                                |      | [RV] RVSP: RVSP (VSD)                                     | Right Ventricular Peak Systolic Pressure (SRT, G-0380)            | Finding Site: Ventricular Septal Defect (SRT, D4-31150)                                                                                                                            |
| X                                                                              | X    | [RV] RVOT VTI                                             | Velocity Time Integral (LN, 20354-7)                              | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                         |
| Measurements of Image Mode: Doppler Color Flow (SRT, R-409E2)                  |      |                                                           |                                                                   |                                                                                                                                                                                    |
|                                                                                | X    | [P] RVOT Aliasing Velocity                                | Alias velocity (LN, 59130-5)                                      | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)                                                                                                                         |
|                                                                                | X    | [P] RVOT PISA Radius                                      | Flow Radius (LN, 59102-4)                                         | Finding Site: Right Ventricle Outflow Tract (SRT, T-32550)<br>Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)                                                  |

| HR                                                        | Mean | Label                                                 | Code Meaning<br>(Coding Scheme Designator, Code Value)                              | Modifiers |
|-----------------------------------------------------------|------|-------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|
| Measurements of Image Mode: Doppler Pulsed (SRT, R-409E4) |      |                                                       |                                                                                     |           |
|                                                           | X    | [RV] RV Free Wall: E'<br>[D] PW DTI, RV Free Wall: E' | RV Free Wall Ea (99SIEMENS, RVePrime)                                               |           |
| Measurements of Image Mode: M mode (SRT, G-0394)          |      |                                                       |                                                                                     |           |
|                                                           |      | [M] RV PEP corrected HR                               | Composite heart rate for RV Pre-ejection Period, corrected (99SIEMENS, RVHRPEPcorr) |           |
|                                                           |      | [M] RV ET corrected                                   | Heart Rate-Corrected Ejection Time (LN, 59086-9)                                    |           |
|                                                           |      | [M] RV PEP corrected                                  | Heart Rate-Corrected Pre-Ejection Period (LN, 59087-7)                              |           |
| X                                                         | X    | [M] RV PEP                                            | Pre-Ejection Period (LN, 59085-1)                                                   |           |
|                                                           |      | [M] RV PEP/ET                                         | Pre-Ejection Period/Ejection Time Ratio (LN, 59088-5)                               |           |
|                                                           | X    | [M] RVAW d                                            | Right Ventricular Anterior Wall Diastolic Thickness (LN, 18153-7)                   |           |
|                                                           | X    | [M] RVAW s                                            | Right Ventricular Anterior Wall Systolic Thickness (LN, 18157-8)                    |           |
| X                                                         | X    | [M] RV ET                                             | Right Ventricular ejection time (DCM, 122213)                                       |           |
|                                                           | X    | [M] RVD d                                             | Right Ventricular Internal Diastolic Dimension (LN, 20304-2)                        |           |
|                                                           | X    | [M] RVD s                                             | Right Ventricular Internal Systolic Dimension (LN, 20305-9)                         |           |
|                                                           | X    | [M] RV Inflow Vp                                      | Velocity of Flow Propagation (LN, 59115-6)                                          |           |

#### 9.1.4 Left Atrium

| HR                                                | Mean | Label                      | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                       |
|---------------------------------------------------|------|----------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Left Atrium</b>                                |      |                            | Container: Findings (DCM, 121070)                      | Finding Site: Left Atrium (SRT, T-32300)                                                                                                                        |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                            |                                                        |                                                                                                                                                                 |
|                                                   | X    | [V] LA MOD, A2C d: LA Area | Area (SRT, G-A166)                                     | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B) |

| HR | Mean | Label                          | Code Meaning<br>(Coding Scheme Designator, Code Value)                                | Modifiers                                                                                                                                                                                  |
|----|------|--------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | X    | [V] LA MOD, A4C d: LA Area     | Area (SRT, G-A166)                                                                    | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                           |
|    |      | [V] MOD, A2C: LA EF            | Cardiac ejection fraction (SRT, F-32070)                                              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)                                                                            |
|    |      | [V] MOD, A4C: LA EF            | Cardiac ejection fraction (SRT, F-32070)                                              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                           |
|    |      | [V] MOD, Biplane: LA EF        | Cardiac ejection fraction (SRT, F-32070)                                              | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                                                                                                 |
|    |      | [LA] Ao d/LA s                 | End Diastolic Aortic Root to End Systolic Left Atrium Ratio (99SIEMENS, RATIOaod_las) |                                                                                                                                                                                            |
|    | X    | [LA] LA s A-P                  | Left Atrium Antero-posterior Systolic Dimension (LN, 29469-4)                         |                                                                                                                                                                                            |
|    | X    | [V] LA MOD, A2C s: LA Area     | Left Atrium Systolic Area (LN, 17977-0)                                               | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)                                                                            |
|    | X    | [V] LA MOD, A4C s: LA Area     | Left Atrium Systolic Area (LN, 17977-0)                                               | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                           |
|    |      | [ Not shown ]                  | Left Atrium Systolic Volume (SRT, G-0383)                                             | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n> where <n> = 0..19  |
|    |      | [ Not shown ]                  | Left Atrium Systolic Volume (SRT, G-0383)                                             | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n> where <n> = 0..19 |
|    |      | [V] Area-Length, A2C s: LA Vol | Left Atrium Systolic Volume (SRT, G-0383)                                             | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical two chamber (SRT, G-A19B)                                                                                 |

| HR | Mean | Label                                                          | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                            |
|----|------|----------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [V] Area-Length, A2C s: LA Vol/BSA                             | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical two chamber (SRT, G-A19B)<br>Index: Body Surface Area (LN, 8277-6)  |
|    |      | [V] Area-Length, A4C s: LA Vol                                 | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical four chamber (SRT, G-A19C)                                          |
|    |      | [V] Area-Length, A4C s: LA Vol/BSA                             | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Index: Body Surface Area (LN, 8277-6) |
|    |      | [V] Area-Length, Biplane s: LA Vol                             | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Area-Length Biplane (DCM, 125204)                                                                                                |
|    |      | [V] Area-Length, Biplane s: LA Vol/BSA                         | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Area-Length Biplane (DCM, 125204)<br>Index: Body Surface Area (LN, 8277-6)                                                       |
|    | X    | [V] LA MOD, A2C s: LA Vol                                      | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical two chamber (SRT, G-A19B)                                      |
|    | X    | [V] LA MOD, A4C s: LA Vol                                      | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                     |
|    |      | [V] LA MOD, Biplane s: LA Vol                                  | Left Atrium Systolic Volume (SRT, G-0383)              | Measurement Method: Method of Disks, Biplane (DCM, 125207)                                                                                           |
|    |      | [LA] LA s/Ao d                                                 | Left Atrium to Aortic Root Ratio (LN, 17985-3)         |                                                                                                                                                      |
| X  | X    | [LA] Diastole: Major Diam A2C<br>[V] LA MOD, A2C d: Major Axis | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B)                                                         |
| X  | X    | [LA] Diastole: Major Diam A4C<br>[V] LA MOD, A4C d: Major Axis | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                        |
| X  | X    | [LA] Diastole: Major Diam PLAX                                 | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Parasternal long axis (SRT, G-0396)                                                      |
| X  | X    | [LA] Systole: Major Diam A2C<br>[V] LA MOD, A2C s: Major Axis  | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical two chamber (SRT, G-A19B)                                                          |
| X  | X    | [LA] Systole: Major Diam A4C<br>[V] LA MOD, A4C s: Major Axis  | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                         |

| HR | Mean | Label                              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                     |
|----|------|------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X  | X    | [LA] Systole: Major Diam PLAX      | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Parasternal long axis (SRT, G-0396)                                                                                                                                                |
| X  | X    | [LA] Diastole: Minor Diam A4C      | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                 |
| X  | X    | [LA] Systole: Minor Diam A4C       | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                  |
|    |      | [ Not shown ]                      | Volume (SRT, G-D705)                                   | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n><br>where <n> = 0..19  |
|    |      | [ Not shown ]                      | Volume (SRT, G-D705)                                   | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n><br>where <n> = 0..19 |
|    |      | [V] Area-Length, A2C d: LA Vol     | Volume (SRT, G-D705)                                   | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B)                                                                                    |
|    |      | [V] Area-Length, A2C d: LA Vol/BSA | Volume (SRT, G-D705)                                   | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B)<br>Index: Body Surface Area (LN, 8277-6)                                           |
|    |      | [V] Area-Length, A4C d: LA Vol     | Volume (SRT, G-D705)                                   | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                   |

| HR                                               | Mean | Label                                  | Code Meaning<br>(Coding Scheme Designator, Code Value)                                | Modifiers                                                                                                                                                                                            |
|--------------------------------------------------|------|----------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                  |      | [V] Area-Length, A4C d: LA Vol/BSA     | Volume (SRT, G-D705)                                                                  | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Index: Body Surface Area (LN, 8277-6) |
|                                                  |      | [V] Area-Length, Biplane d: LA Vol     | Volume (SRT, G-D705)                                                                  | Measurement Method: Area-Length Biplane (DCM, 125204)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)                                                                                                |
|                                                  |      | [V] Area-Length, Biplane d: LA Vol/BSA | Volume (SRT, G-D705)                                                                  | Measurement Method: Area-Length Biplane (DCM, 125204)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Index: Body Surface Area (LN, 8277-6)                                                       |
|                                                  | X    | [V] LA MOD, A2C d: LA Vol              | Volume (SRT, G-D705)                                                                  | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B)                                      |
|                                                  | X    | [V] LA MOD, A4C d: LA Vol              | Volume (SRT, G-D705)                                                                  | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                     |
|                                                  |      | [V] LA MOD, Biplane d: LA Vol          | Volume (SRT, G-D705)                                                                  | Measurement Method: Method of Disks, Biplane (DCM, 125207)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)                                                                                           |
| Measurements of Image Mode: M mode (SRT, G-0394) |      |                                        |                                                                                       |                                                                                                                                                                                                      |
|                                                  | X    | [M] LA Diam d                          | Diameter (SRT, M-02550)                                                               | Cardiac Cycle Point: Diastole (SRT, F-32010)                                                                                                                                                         |
|                                                  |      | [M] Ao d/LA s                          | End Diastolic Aortic Root to End Systolic Left Atrium Ratio (99SIEMENS, RATIOaod_las) |                                                                                                                                                                                                      |
|                                                  | X    | [M] LA Diam s                          | Left Atrium Antero-posterior Systolic Dimension (LN, 29469-4)                         |                                                                                                                                                                                                      |
|                                                  |      | [M] LA s/Ao d                          | Left Atrium to Aortic Root Ratio (LN, 17985-3)                                        |                                                                                                                                                                                                      |

### 9.1.5 Right Atrium

| HR                                                | Mean | Label                                                     | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                     |
|---------------------------------------------------|------|-----------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Right Atrium</b>                               |      |                                                           | Container: Findings (DCM, 121070)                      | Finding Site: Right Atrium (SRT, T-32200)                                                                                                                                                                                                     |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                                                           |                                                        |                                                                                                                                                                                                                                               |
|                                                   | X    | [V] RA MOD, A4C d: RA Area                                | Area (SRT, G-A166)                                     | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                              |
| X                                                 | X    | [RA] Diastole: Major Diam A4C<br>[V] MOD, A4C d: RA Major | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                 |
| X                                                 | X    | [RA] Systole: Major Diam A4C<br>[V] MOD, A4C s: RA Major  | Major Axis (SRT, G-A193)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                  |
| X                                                 | X    | [RA] Diastole: Minor Diam A4C                             | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                 |
| X                                                 | X    | [RA] Systole: Minor Diam A4C                              | Minor Axis (SRT, G-A194)                               | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                                                  |
|                                                   | X    | [V] MOD, A4C s: RA Area                                   | Right Atrium Systolic Area (LN, 17988-7)               | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Image View: Apical four chamber (SRT, G-A19C)                                                                                                                              |
|                                                   | X    | [RV] RVSP: RA Pressure                                    | Right Atrium Systolic Pressure (LN, 18070-3)           |                                                                                                                                                                                                                                               |
|                                                   |      | [ Not shown ]                                             | Volume (SRT, G-D705)                                   | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n><br>where <n> = 0..19 |
|                                                   |      | [ Not shown ]                                             | Volume (SRT, G-D705)                                   | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Simpson Disk Number (99SIEMENS, SimpsonDiskNum): <n><br>where <n> = 0..19  |

| HR | Mean | Label                         | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                            |
|----|------|-------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | X    | [V] MOD, A4C d: RA Vol        | Volume (SRT, G-D705)                                   | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                     |
|    | X    | [V] MOD, A4C s: RA Vol        | Volume (SRT, G-D705)                                   | Measurement Method: Method of Disks, Single Plane (DCM, 125208)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                      |
|    |      | [V] RA A-L, A4C d: RA Vol     | Volume (SRT, G-D705)                                   | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)                                          |
|    |      | [V] RA A-L, A4C d: RA Vol/BSA | Volume (SRT, G-D705)                                   | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Index: Body Surface Area (LN, 8277-6) |
|    |      | [V] RA A-L, A4C s: RA Vol     | Volume (SRT, G-D705)                                   | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                                           |
|    |      | [V] RA A-L, A4C s: RA Vol/BSA | Volume (SRT, G-D705)                                   | Measurement Method: Area-Length Single Plane (DCM, 125205)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)<br>Index: Body Surface Area (LN, 8277-6)  |

### 9.1.6 Aortic Valve

| HR                                                | Mean | Label                              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                    |
|---------------------------------------------------|------|------------------------------------|--------------------------------------------------------|----------------------------------------------|
| <b>Aortic Valve</b>                               |      |                                    | Container: Findings (DCM, 121070)                      | Finding Site: Aortic Valve (SRT, T-35400)    |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                                    |                                                        |                                              |
|                                                   | X    | [Ao] Aortic Valve: AoV Area Planim | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Planimetry (DCM, 125220) |

| HR                                                                             | Mean | Label                                   | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                     |
|--------------------------------------------------------------------------------|------|-----------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X                                                                              | X    | [Ao] Aortic Valve: AoV Annulus Diam     | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                                                                                |
|                                                                                | X    | [Ao] AR Jet/LVOT: LVOT Height           | LVOT Height (99SIEMENS, LvotHeight)                    |                                                                                                                                                               |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                         |                                                        |                                                                                                                                                               |
| X                                                                              | X    | [Ao] Aortic Valve: AoV Accel Slope      | Acceleration Slope (LN, 20167-3)                       |                                                                                                                                                               |
| X                                                                              | X    | [Ao] Aortic Valve: AoV AT               | Acceleration Time (LN, 20168-1)                        |                                                                                                                                                               |
| X                                                                              | X    | [Ao] Aortic Valve: AoV ET               | Aortic Valve Ejection Time (LN, 18041-4)               |                                                                                                                                                               |
|                                                                                |      | [Ao] Aortic Valve: AoV Area Vmax        | Area (SRT, G-A166)                                     | Measurement Method: Continuity Equation by Peak Velocity (DCM, 125214)                                                                                        |
|                                                                                |      | [Ao] Aortic Valve: AoV Area VTI         | Area (SRT, G-A166)                                     | Measurement Method: Continuity Equation by Velocity Time Integral (DCM, 125215)                                                                               |
|                                                                                |      | [Ao] Aortic Valve: AoV Area Vmean       | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Continuity Equation by Mean Velocity (DCM, 125213)                                                                                        |
|                                                                                |      | [Ao] Aortic Valve: AoV Area/BSA (Vmax)  | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Continuity Equation by Peak Velocity (DCM, 125214)<br>Index: Body Surface Area (LN, 8277-6)                                               |
|                                                                                |      | [Ao] Aortic Valve: AoV Area/BSA (Vmean) | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Continuity Equation by Mean Velocity (DCM, 125213)<br>Index: Body Surface Area (LN, 8277-6)                                               |
|                                                                                |      | [Ao] Aortic Valve: AoV Area/BSA (VTI)   | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Continuity Equation by Velocity Time Integral (DCM, 125215)<br>Index: Body Surface Area (LN, 8277-6)                                      |
|                                                                                |      | [P] AoV Area PISA                       | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)                                          |
|                                                                                |      | [P] AoV Area/BSA (PISA)                 | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)<br>Index: Body Surface Area (LN, 8277-6) |
|                                                                                |      | [P] AR EROA                             | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                        |
|                                                                                | X    | [Ao] Aortic Valve: AR Slope             | Deceleration Slope (LN, 20216-8)                       | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                               |
|                                                                                | X    | [Ao] Aortic Valve: AR DT                | Deceleration Time (LN, 20217-6)                        | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                               |
| X                                                                              | X    | [Ao] Aortic Valve: AR ED Velocity       | End Diastolic Velocity (LN, 11653-3)                   | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                               |

| HR                                                            | Mean | Label                                                               | Code Meaning<br>(Coding Scheme Designator, Code Value)                 | Modifiers                                                                                                              |
|---------------------------------------------------------------|------|---------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                               |      | [P] AR PISA                                                         | Flow Area (LN, 20226-7)                                                | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
| X                                                             | X    | [Ao] Aortic Valve: AoV Mean Grad                                    | Mean Gradient (LN, 20256-4)                                            |                                                                                                                        |
| X                                                             | X    | [Ao] Aortic Valve: AoV Vmean                                        | Mean Velocity (LN, 20352-1)                                            |                                                                                                                        |
|                                                               |      | [Ao] Aortic Valve: AoV Peak Grad                                    | Peak Gradient (LN, 20247-3)                                            |                                                                                                                        |
|                                                               |      | [Ao] Aortic Valve: AR ED Grad                                       | Peak Gradient (LN, 20247-3)                                            | Flow Direction: Regurgitant Flow (SRT, R-42E61)<br>Cardiac Cycle Point: End Diastole (SRT, F-32011)                    |
|                                                               |      | [P] AR Inst Flow Rate                                               | Peak Instantaneous Flow Rate (LN, 34141-2)                             | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
| X                                                             | X    | [Ao] Aortic Valve: AoV Vmax<br>[P] AoV Vmax                         | Peak Velocity (LN, 11726-7)                                            |                                                                                                                        |
|                                                               | X    | [Ao] Aortic Valve: AR Vmax<br>[P] AR Vmax<br>[3DP] Average: AR Vmax | Peak Velocity (LN, 11726-7)                                            | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|                                                               |      | [Ao] Aortic Valve: AR PHT                                           | Pressure Half-Time (LN, 20280-4)                                       | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|                                                               |      | [Ao] Aortic Valve: AoV AT/ET                                        | Ratio of Aortic Valve Acceleration Time to Ejection Time (SRT, G-0382) |                                                                                                                        |
| X                                                             | X    | [Ao] Aortic Valve: AoV VTI                                          | Velocity Time Integral (LN, 20354-7)                                   |                                                                                                                        |
|                                                               | X    | [Ao] AR VTI<br>[P] AR VTI<br>[3DP] Average: AR VTI                  | Velocity Time Integral (LN, 20354-7)                                   | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|                                                               |      | [P] AR Volume                                                       | Volume Flow (LN, 33878-0)                                              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
| Measurements of Image Mode: Doppler Color Flow (SRT, R-409E2) |      |                                                                     |                                                                        |                                                                                                                        |
|                                                               | X    | [P] AR Aliasing Velocity                                            | Alias velocity (LN, 59130-5)                                           | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|                                                               |      | [Ao] AR Jet/LVOT: AR Jet Area/LVOT Area                             | AR Jet Area/LVOT Area Ratio (99SIEMENS, RATIOara_lvot)                 |                                                                                                                        |
|                                                               | X    | [Ao] AR Jet/LVOT: AR Jet Height                                     | AR Jet Height (99SIEMENS, ARJetHeight)                                 |                                                                                                                        |
|                                                               |      | [Ao] AR Jet/LVOT: AR Jet Ht/LVOT Ht                                 | AR Jet Height/LVOT Height Ratio (99SIEMENS, RATIOarht_lvot)            |                                                                                                                        |

| HR                                               | Mean | Label                         | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                              |
|--------------------------------------------------|------|-------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                  | X    | [P] AR PISA Radius            | Flow Radius (LN, 59102-4)                              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|                                                  | X    | [Ao] AR Jet/LVOT: AR Jet Area | Jet Area (LN, 59123-0)                                 | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
| Measurements of Image Mode: M mode (SRT, G-0394) |      |                               |                                                        |                                                                                                                        |
|                                                  | X    | [M] AoV Cusp Sep              | Aortic Valve Cusp Separation (LN, 17996-0)             |                                                                                                                        |

### 9.1.7 Mitral Valve

| HR                                                | Mean | Label                          | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                      |
|---------------------------------------------------|------|--------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mitral Valve</b>                               |      |                                | Container: Findings (DCM, 121070)                      | Finding Site: Mitral Valve (SRT, T-35300)                                                                                                      |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                                |                                                        |                                                                                                                                                |
|                                                   | X    | [MV] MV Area Planim            | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Planimetry (DCM, 125220)                                                                                                   |
|                                                   | X    | [MV] Diastole: MV Annulus A2C  | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Mitral Annulus (SRT, T-35313)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical two chamber (SRT, G-A19B)    |
|                                                   | X    | [MV] Diastole: MV Annulus A4C  | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Mitral Annulus (SRT, T-35313)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)   |
|                                                   | X    | [MV] Diastole: MV Annulus PLAX | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Mitral Annulus (SRT, T-35313)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Parasternal long axis (SRT, G-0396) |
|                                                   | X    | [MV] MV Annulus d A-P          | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Mitral Annulus (SRT, T-35313)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Parasternal long axis (SRT, G-0396) |
|                                                   | X    | [MV] MV Diam A-P               | Cardiovascular Orifice Diameter (SRT, G-038F)          | Image View: Parasternal long axis (SRT, G-0396)                                                                                                |
|                                                   | X    | [MV] MV Diam M-L               | Cardiovascular Orifice Diameter (SRT, G-038F)          | Image View: Apical four chamber (SRT, G-A19C)                                                                                                  |
|                                                   | X    | [MV] Systole: MV Annulus A2C   | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Mitral Annulus (SRT, T-35313)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical two chamber (SRT, G-A19B)     |

| HR                                                                             | Mean | Label                                              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                     |
|--------------------------------------------------------------------------------|------|----------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                | X    | [MV] Systole: MV Annulus A4C                       | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Mitral Annulus (SRT, T-35313)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Apical four chamber (SRT, G-A19C)                   |
|                                                                                | X    | [MV] Systole: MV Annulus PLAX                      | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Mitral Annulus (SRT, T-35313)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Parasternal long axis (SRT, G-0396)                 |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                                    |                                                        |                                                                                                                                                               |
| X                                                                              | X    | [MV] MV Accel Slope                                | Acceleration Slope (LN, 20167-3)                       |                                                                                                                                                               |
| X                                                                              | X    | [MV] MV AT                                         | Acceleration Time (LN, 20168-1)                        |                                                                                                                                                               |
|                                                                                |      | [MV] MV Area VTl                                   | Area (SRT, G-A166)                                     | Measurement Method: Continuity Equation by Velocity Time Integral (DCM, 125215)                                                                               |
|                                                                                |      | [MV] MV Area PHT                                   | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Area by Pressure Half-Time (DCM, 125210)                                                                                                  |
|                                                                                |      | [P] MR EROA                                        | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                        |
|                                                                                |      | [P] MV Area PISA                                   | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)                                          |
|                                                                                |      | [P] MV Area/BSA (PISA)                             | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)<br>Index: Body Surface Area (LN, 8277-6) |
| X                                                                              | X    | [MV] MV Decel Slope<br>[D] MV Flow: MV Decel Slope | Deceleration Slope (LN, 20216-8)                       |                                                                                                                                                               |
|                                                                                | X    | [MV] MV DT<br>[D] MV Flow: MV DT                   | Deceleration Time (LN, 20217-6)                        |                                                                                                                                                               |
|                                                                                |      | [P] MR PISA                                        | Flow Area (LN, 20226-7)                                | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                        |
|                                                                                |      | [P] MV PISA                                        | Flow Area (LN, 20226-7)                                | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)                                          |
| X                                                                              | X    | [MV] MR Mean Grad                                  | Mean Gradient (LN, 20256-4)                            | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                               |

| HR | Mean | Label                                                 | Code Meaning<br>(Coding Scheme Designator, Code Value)                     | Modifiers                                                                                                              |
|----|------|-------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| X  | X    | [MV] MV Mean Grad Annulus                             | Mean Gradient (LN, 20256-4)                                                | Finding Site: Mitral Annulus (SRT, T-35313)                                                                            |
| X  | X    | [MV] MV Mean Grad Tips                                | Mean Gradient (LN, 20256-4)                                                |                                                                                                                        |
|    | X    | [LV] LV dP/dt                                         | Mitral Regurgitation dP/dt derived from Mitral Reg. velocity (LN, 18035-6) |                                                                                                                        |
|    |      | [MV] MV A/E<br>[D] MV Flow: MV A/E                    | Mitral Valve A to E Ratio (99SIEMENS, MVAtOERatio)                         |                                                                                                                        |
|    | X    | [MV] MV A Dur<br>[D] MV Flow: MV A Dur                | Mitral Valve A-Wave Duration (SRT, G-0385)                                 |                                                                                                                        |
|    | X    | [MV] MV A Vmax<br>[D] MV Flow: MV A Vmax              | Mitral Valve A-Wave Peak Velocity (LN, 17978-8)                            |                                                                                                                        |
|    |      | [MV] MV E/A<br>[D] MV Flow: MV E/A                    | Mitral Valve E to A Ratio (LN, 18038-0)                                    |                                                                                                                        |
|    | X    | [MV] MV E Vmax<br>[D] MV Flow: MV E Vmax              | Mitral Valve E-Wave Peak Velocity (LN, 18037-2)                            |                                                                                                                        |
|    |      | [MV] MR Peak Grad                                     | Peak Gradient (LN, 20247-3)                                                | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|    |      | [MV] MV Peak Grad Annulus                             | Peak Gradient (LN, 20247-3)                                                | Finding Site: Mitral Annulus (SRT, T-35313)                                                                            |
|    |      | [MV] MV Peak Grad Tips                                | Peak Gradient (LN, 20247-3)                                                |                                                                                                                        |
|    |      | [P] MR Inst Flow Rate                                 | Peak Instantaneous Flow Rate (LN, 34141-2)                                 | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|    |      | [P] MV Inst Flow Rate                                 | Peak Instantaneous Flow Rate (LN, 34141-2)                                 | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)   |
| X  | X    | [MV] MR Vmax<br>[P] MR Vmax<br>[3DP] Average: MR Vmax | Peak Velocity (LN, 11726-7)                                                | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|    | X    | [MV] MV Vmax Annulus                                  | Peak Velocity (LN, 11726-7)                                                | Finding Site: Mitral Annulus (SRT, T-35313)                                                                            |
|    | X    | [MV] MV Vmax Tips<br>[P] MV Vmax Tips                 | Peak Velocity (LN, 11726-7)                                                |                                                                                                                        |
|    |      | [MV] MV PHT                                           | Pressure Half-Time (LN, 20280-4)                                           |                                                                                                                        |
|    |      | [MV] MV RF                                            | Regurgitant Fraction (SRT, G-0390)                                         |                                                                                                                        |
|    |      | [MV] MV SV                                            | Stroke Volume (SRT, F-32120)                                               |                                                                                                                        |

| HR                                                            | Mean | Label                                              | Code Meaning<br>(Coding Scheme Designator, Code Value)     | Modifiers                                                                                                              |
|---------------------------------------------------------------|------|----------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| X                                                             | X    | [MV] MR VTI<br>[P] MR VTI<br>[3DP] Average: MR VTI | Velocity Time Integral (LN, 20354-7)                       | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
| X                                                             | X    | [MV] MV VTI                                        | Velocity Time Integral (LN, 20354-7)                       |                                                                                                                        |
| X                                                             | X    | [MV] MV VTI Annulus                                | Velocity Time Integral (LN, 20354-7)                       | Finding Site: Mitral Annulus (SRT, T-35313)                                                                            |
| X                                                             | X    | [MV] MV VTI Tips<br>[D] MV Flow: MV VTI Tips       | Velocity Time Integral (LN, 20354-7)                       | Finding Site: Leaflet Tips (99SIEMENS, LeafletTips)                                                                    |
|                                                               |      | [MV] MV Regurg Vol                                 | Volume (SRT, G-D705)                                       | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|                                                               |      | [P] MR Volume                                      | Volume Flow (LN, 33878-0)                                  | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
| Measurements of Image Mode: Doppler Color Flow (SRT, R-409E2) |      |                                                    |                                                            |                                                                                                                        |
|                                                               | X    | [P] MR Aliasing Velocity                           | Alias velocity (LN, 59130-5)                               | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|                                                               | X    | [P] MV Aliasing Velocity                           | Alias velocity (LN, 59130-5)                               | Flow Direction: Antegrade Flow (SRT, R-42047)                                                                          |
|                                                               | X    | [P] MR PISA Radius                                 | Flow Radius (LN, 59102-4)                                  | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|                                                               | X    | [P] MV PISA Radius                                 | Flow Radius (LN, 59102-4)                                  | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)                                                    |
|                                                               | X    | [P] MV Funnel Angle                                | Funnel Angle (99SIEMENS, FunnelAngle)                      |                                                                                                                        |
|                                                               | X    | [MV] MR Vena Contracta                             | Length (SRT, G-A22A)                                       | Finding Site: Vena Contracta (SRT, R-421AA)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                         |
| Measurements of Image Mode: M mode (SRT, G-0394)              |      |                                                    |                                                            |                                                                                                                        |
|                                                               | X    | [M] CA Amp                                         | Amplitude of C point to A point (99SIEMENS, MVCAmp)        |                                                                                                                        |
|                                                               | X    | [M] CE Amp                                         | Amplitude of C point to E point (99SIEMENS, MVCEmp)        |                                                                                                                        |
|                                                               | X    | [M] DE Amp                                         | Amplitude of D point to E point (99SIEMENS, MVDEmp)        |                                                                                                                        |
|                                                               | X    | [M] MV DE Slope                                    | D-E Slope (LN, 59127-1)                                    |                                                                                                                        |
|                                                               | X    | [M] MAPSE                                          | Mitral annular plane systolic excursion (99SIEMENS, MAPSE) |                                                                                                                        |
|                                                               | X    | [M] MV DE Excursion                                | Mitral Valve D-E Excursion (LN, 17997-8)                   |                                                                                                                        |

| HR | Mean | Label           | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers |
|----|------|-----------------|--------------------------------------------------------|-----------|
|    | X    | [M] MV EF Slope | Mitral Valve E-F Slope by M-Mode (LN, 18040-6)         |           |
|    | X    | [M] MV EPSS     | Mitral Valve EPSS, E wave (LN, 18036-4)                |           |

### 9.1.8 Pulmonic Valve

| HR                                                                             | Mean | Label                       | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                      |
|--------------------------------------------------------------------------------|------|-----------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pulmonic Valve</b>                                                          |      |                             | Container: Findings (DCM, 121070)                      | Finding Site: Pulmonic Valve (SRT, T-35200)                                                                                                                    |
| Measurements of Image Mode: 2D mode (SRT, G-03A2)                              |      |                             |                                                        |                                                                                                                                                                |
| X                                                                              | X    | [PV] PV Annulus Diam        | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Pulmonic Valve Annulus (99SIEMENS, PVAnnulus)                                                                                                    |
|                                                                                | X    | [PV] PV Annulus Diam s PSAX | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Pulmonic Valve Annulus (99SIEMENS, PVAnnulus)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Parasternal short axis (SRT, G-0397) |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                             |                                                        |                                                                                                                                                                |
| X                                                                              | X    | [PV] PV AT                  | Acceleration Time (LN, 20168-1)                        |                                                                                                                                                                |
|                                                                                |      | [P] PR EROA                 | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                         |
|                                                                                |      | [P] PV Area PISA            | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)                                           |
|                                                                                |      | [P] PV Area/BSA (PISA)      | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)<br>Index: Body Surface Area (LN, 8277-6)  |
|                                                                                | X    | [PV] PR Slope               | Deceleration Slope (LN, 20216-8)                       | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                                |
|                                                                                | X    | [PV] PR DT                  | Deceleration Time (LN, 20217-6)                        | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                                |
| X                                                                              | X    | [PV] PR ED Velocity         | End Diastolic Velocity (LN, 11653-3)                   | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                                |
|                                                                                |      | [P] PR PISA                 | Flow Area (LN, 20226-7)                                | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                         |

| HR                                                            | Mean | Label                                                 | Code Meaning<br>(Coding Scheme Designator, Code Value)                   | Modifiers                                                                                                                |
|---------------------------------------------------------------|------|-------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| X                                                             | X    | [PV] PV Mean Grad                                     | Mean Gradient (LN, 20256-4)                                              |                                                                                                                          |
| X                                                             | X    | [PV] PV Vmean                                         | Mean Velocity (LN, 20352-1)                                              |                                                                                                                          |
|                                                               |      | [PV] PR ED Grad                                       | Peak Gradient (LN, 20247-3)                                              | Flow Direction: Regurgitant Flow (SRT, R-42E61)<br>Cardiac Cycle Point: End Diastole (SRT, F-32011)                      |
|                                                               |      | [PV] PV Peak Grad                                     | Peak Gradient (LN, 20247-3)                                              |                                                                                                                          |
|                                                               |      | [P] PR Inst Flow Rate                                 | Peak Instantaneous Flow Rate (LN, 34141-2)                               | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)   |
|                                                               | X    | [PV] PR Vmax<br>[P] PR Vmax<br>[3DP] Average: PR Vmax | Peak Velocity (LN, 11726-7)                                              | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                          |
| X                                                             | X    | [PV] PV Vmax<br>[P] PV Vmax                           | Peak Velocity (LN, 11726-7)                                              |                                                                                                                          |
|                                                               |      | [PV] PV Area Vmax                                     | Pulmonic Valve Area by continuity (LN, 18096-8)                          | Measurement Method: Continuity Equation by Peak Velocity (DCM, 125214)                                                   |
|                                                               |      | [PV] PV Area VTI                                      | Pulmonic Valve Area by continuity (LN, 18096-8)                          | Measurement Method: Continuity Equation by Velocity Time Integral (DCM, 125215)                                          |
|                                                               |      | [PV] PV Area/BSA (Vmax)                               | Pulmonic Valve Area by continuity (LN, 18096-8)                          | Measurement Method: Continuity Equation by Peak Velocity (DCM, 125214)<br>Index: Body Surface Area (LN, 8277-6)          |
|                                                               |      | [PV] PV Area/BSA (VTI)                                | Pulmonic Valve Area by continuity (LN, 18096-8)                          | Measurement Method: Continuity Equation by Velocity Time Integral (DCM, 125215)<br>Index: Body Surface Area (LN, 8277-6) |
| X                                                             | X    | [PV] PV ET                                            | Pulmonic Valve Ejection Time (LN, 18042-2)                               |                                                                                                                          |
|                                                               |      | [PV] PV AT/ET                                         | Ratio of Pulmonic Valve Acceleration Time to Ejection Time (SRT, G-0388) |                                                                                                                          |
|                                                               |      | [PV] PV SV                                            | Stroke Volume (SRT, F-32120)                                             |                                                                                                                          |
|                                                               | X    | [PV] PR VTI<br>[3DP] Average: PR VTI                  | Velocity Time Integral (LN, 20354-7)                                     | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                          |
| X                                                             | X    | [PV] PV VTI                                           | Velocity Time Integral (LN, 20354-7)                                     |                                                                                                                          |
| Measurements of Image Mode: Doppler Color Flow (SRT, R-409E2) |      |                                                       |                                                                          |                                                                                                                          |
|                                                               | X    | [P] PR Aliasing Velocity                              | Alias velocity (LN, 59130-5)                                             | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                          |

| HR | Mean | Label              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                              |
|----|------|--------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|    | X    | [P] PR PISA Radius | Flow Radius (LN, 59102-4)                              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |

### 9.1.9 Tricuspid Valve

| HR                                                                             | Mean | Label                                              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                     |
|--------------------------------------------------------------------------------|------|----------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tricuspid Valve</b>                                                         |      |                                                    | Container: Findings (DCM, 121070)                      | Finding Site: Tricuspid Valve (SRT, T-35100)                                                                                                                  |
| Measurements of Image Mode: 2D mode (SRT, G-03A2)                              |      |                                                    |                                                        |                                                                                                                                                               |
|                                                                                | X    | [TV] TV Area Planim                                | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Planimetry (DCM, 125220)                                                                                                                  |
|                                                                                | X    | [TV] TV Annulus d A4C                              | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Tricuspid Annulus (SRT, T-35111)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Apical four chamber (SRT, G-A19C)               |
|                                                                                | X    | [TV] TV Annulus d A-P                              | Cardiovascular Orifice Diameter (SRT, G-038F)          | Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Parasternal long axis (SRT, G-0396)                                                               |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                                    |                                                        |                                                                                                                                                               |
| X                                                                              | X    | [TV] TV Accel Slope                                | Acceleration Slope (LN, 20167-3)                       |                                                                                                                                                               |
|                                                                                |      | [P] TR EROA                                        | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                        |
|                                                                                |      | [P] TV Area PISA                                   | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)                                          |
|                                                                                |      | [P] TV Area/BSA (PISA)                             | Cardiovascular Orifice Area (SRT, G-038E)              | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)<br>Index: Body Surface Area (LN, 8277-6) |
| X                                                                              | X    | [TV] TV Decel Slope<br>[D] TV Flow: TV Decel Slope | Deceleration Slope (LN, 20216-8)                       |                                                                                                                                                               |
|                                                                                | X    | [TV] TV DT<br>[D] TV Flow: TV DT                   | Deceleration Time (LN, 20217-6)                        |                                                                                                                                                               |

| HR | Mean | Label                                                 | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                              |
|----|------|-------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|    |      | [P] TR PISA                                           | Flow Area (LN, 20226-7)                                | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|    |      | [P] TV PISA                                           | Flow Area (LN, 20226-7)                                | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)   |
| X  | X    | [TV] TV Mean Grad                                     | Mean Gradient (LN, 20256-4)                            |                                                                                                                        |
|    | X    | [TV] TV Vmean                                         | Mean Velocity (LN, 20352-1)                            |                                                                                                                        |
|    |      | [TV] TR Peak Grad<br>[RV] RVSP: TR Peak Grad          | Peak Gradient (LN, 20247-3)                            | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|    |      | [TV] TV Peak Grad                                     | Peak Gradient (LN, 20247-3)                            |                                                                                                                        |
|    |      | [P] TR Inst Flow Rate                                 | Peak Instantaneous Flow Rate (LN, 34141-2)             | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|    |      | [P] TV Inst Flow Rate                                 | Peak Instantaneous Flow Rate (LN, 34141-2)             | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Antegrade Flow (SRT, R-42047)   |
| X  | X    | [TV] TR Vmax<br>[P] TR Vmax<br>[3DP] Average: TR Vmax | Peak Velocity (LN, 11726-7)                            | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|    | X    | [TV] TV Vmax<br>[P] TV Vmax                           | Peak Velocity (LN, 11726-7)                            |                                                                                                                        |
|    |      | [TV] TV PHT                                           | Pressure Half-Time (LN, 20280-4)                       |                                                                                                                        |
|    |      | [TV] TV SV                                            | Stroke Volume (SRT, F-32120)                           |                                                                                                                        |
|    | X    | [RV] RV dP/dt                                         | Tricuspid Regurgitation dP/dt (LN, 18034-9)            |                                                                                                                        |
| X  | X    | [TV] TV A Vmax<br>[D] TV Flow: TV A Vmax              | Tricuspid Valve A Wave Peak Velocity (LN, 18030-7)     |                                                                                                                        |
| X  | X    | [TV] TV E Vmax<br>[D] TV Flow: TV E Vmax              | Tricuspid Valve E Wave Peak Velocity (LN, 18031-5)     |                                                                                                                        |
|    | X    | [TV] TR VTi<br>[3DP] Average: TR VTi                  | Velocity Time Integral (LN, 20354-7)                   | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|    | X    | [TV] TV VTi                                           | Velocity Time Integral (LN, 20354-7)                   |                                                                                                                        |
| X  | X    | [TV] TV VTi Annulus                                   | Velocity Time Integral (LN, 20354-7)                   | Finding Site: Tricuspid Annulus (SRT, T-35111)                                                                         |

| HR                                                            | Mean | Label                                                 | Code Meaning<br>(Coding Scheme Designator, Code Value)        | Modifiers                                                                                                              |
|---------------------------------------------------------------|------|-------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| X                                                             | X    | [TV] TV VTI Tips<br>[D] TV Flow: TV VTI Tips          | Velocity Time Integral (LN, 20354-7)                          | Finding Site: Leaflet Tips (99SIEMENS, LeafletTips)                                                                    |
| Measurements of Image Mode: Doppler Color Flow (SRT, R-409E2) |      |                                                       |                                                               |                                                                                                                        |
|                                                               | X    | [P] TR Aliasing Velocity                              | Alias velocity (LN, 59130-5)                                  | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                        |
|                                                               | X    | [P] TV Aliasing Velocity                              | Alias velocity (LN, 59130-5)                                  | Flow Direction: Antegrade Flow (SRT, R-42047)                                                                          |
|                                                               | X    | [P] TR PISA Radius                                    | Flow Radius (LN, 59102-4)                                     | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|                                                               | X    | [P] TV PISA Radius                                    | Flow Radius (LN, 59102-4)                                     | Measurement Method: Proximal Isovelocity Surface Area (DCM, 125216)                                                    |
|                                                               | X    | [P] TV Funnel Angle                                   | Funnel Angle (99SIEMENS, FunnelAngle)                         |                                                                                                                        |
| Measurements of Image Mode: Doppler Pulsed (SRT, R-409E4)     |      |                                                       |                                                               |                                                                                                                        |
|                                                               | X    | [RV] RV Free Wall: A'<br>[D] PW DTI, RV Free Wall: A' | TV Free Wall Aa (99SIEMENS, TVaPrime)                         |                                                                                                                        |
|                                                               | X    | [RV] RV Free Wall: S'<br>[D] PW DTI, RV Free Wall: S' | TV Free Wall Sa (99SIEMENS, TVsPrime)                         |                                                                                                                        |
| Measurements of Image Mode: M mode (SRT, G-0394)              |      |                                                       |                                                               |                                                                                                                        |
|                                                               | X    | [M] TV DE Excursion                                   | D-E Excursion (LN, 59091-9)                                   |                                                                                                                        |
|                                                               | X    | [M] TV DE Slope                                       | D-E Slope (LN, 59127-1)                                       |                                                                                                                        |
|                                                               | X    | [M] TV EF Slope                                       | E-F Slope (LN, 59128-9)                                       |                                                                                                                        |
|                                                               | X    | [M] TAPSE                                             | Tricuspid annular plane systolic excursion (99SIEMENS, TAPSE) |                                                                                                                        |

### 9.1.10 Aorta

| HR                                                | Mean | Label                         | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                    |
|---------------------------------------------------|------|-------------------------------|--------------------------------------------------------|----------------------------------------------|
| <b>Aorta</b>                                      |      |                               | Container: Findings (DCM, 121070)                      | Finding Site: Aorta (SRT, T-42000)           |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                               |                                                        |                                              |
| X                                                 | X    | [Ao] Aorta: Ao Arch Diam      | Aortic Arch Diameter (LN, 18011-7)                     |                                              |
| X                                                 | X    | [Ao] Aorta: Ao Arch Diam Dist | Aortic Arch Diameter (LN, 18011-7)                     | Topographical modifier: Distal (SRT, G-A119) |
|                                                   | X    | [Ao] Aorta: Ao Isthmus d      | Aortic Isthmus Diameter (LN, 18014-1)                  | Cardiac Cycle Point: Diastole (SRT, F-32010) |

| HR | Mean | Label                              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                            |
|----|------|------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | X    | [Ao] Aorta: Ao Isthmus s           | Aortic Isthmus Diameter (LN, 18014-1)                  | Cardiac Cycle Point: Systole (SRT, F-32020)                                                                                                          |
|    | X    | [Ao] Aorta: Ao Root d              | Aortic Root Diameter (LN, 18015-8)                     | Finding Site: Aortic Valve Ring (SRT, T-35410)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)                                                       |
|    | X    | [Ao] Aorta: Ao Root s              | Aortic Root Diameter (LN, 18015-8)                     | Finding Site: Aortic Valve Ring (SRT, T-35410)<br>Cardiac Cycle Point: Systole (SRT, F-32020)                                                        |
|    | X    | [Ao] Aorta: Ao Sinus d             | Aortic Root Diameter (LN, 18015-8)                     | Finding Site: Structure Sinus of Valsalva (SRT, T-42200)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)                                             |
|    | X    | [Ao] Aorta: Ao Sinus s             | Aortic Root Diameter (LN, 18015-8)                     | Finding Site: Structure Sinus of Valsalva (SRT, T-42200)<br>Cardiac Cycle Point: Systole (SRT, F-32020)                                              |
|    | X    | [Ao] Aorta: Ao ST jnct d           | Aortic Root Diameter (LN, 18015-8)                     | Finding Site: Aortic Sinotubular Junction (SRT, T-42102)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)                                             |
|    | X    | [Ao] Aorta: Ao ST jnct s           | Aortic Root Diameter (LN, 18015-8)                     | Finding Site: Aortic Sinotubular Junction (SRT, T-42102)<br>Cardiac Cycle Point: Systole (SRT, F-32020)                                              |
|    | X    | [Ao] Aorta: Ao Asc Diam d          | Ascending Aortic Diameter (LN, 18012-5)                | Cardiac Cycle Point: Diastole (SRT, F-32010)                                                                                                         |
|    | X    | [Ao] Aorta: Ao Asc Diam s          | Ascending Aortic Diameter (LN, 18012-5)                | Cardiac Cycle Point: Systole (SRT, F-32020)                                                                                                          |
|    | X    | [Ao] Aorta: Ao Annulus Diam d PLAX | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Aortic Valve Ring (SRT, T-35410)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Parasternal long axis (SRT, G-0396)    |
|    | X    | [Ao] Aorta: Ao Annulus Diam s PLAX | Cardiovascular Orifice Diameter (SRT, G-038F)          | Finding Site: Aortic Valve Ring (SRT, T-35410)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Parasternal long axis (SRT, G-0396)     |
| X  | X    | [Ao] Aorta: Ao Desc Diam           | Descending Aortic Diameter (LN, 18013-3)               |                                                                                                                                                      |
|    | X    | [Ao] Aorta: Ao Abdominal Diam      | Diameter (SRT, M-02550)                                | Finding Site: Abdominal Aorta (SRT, T-42500)                                                                                                         |
| X  | X    | [Ao] Aorta: Ao Arch s Trans Dist   | Diameter (SRT, M-02550)                                | Finding Site: Transverse Aortic Arch (SRT, T-42304)<br>Topographical modifier: Distal (SRT, G-A119)<br>Cardiac Cycle Point: Systole (SRT, F-32020)   |
| X  | X    | [Ao] Aorta: Ao Arch s Trans Prox   | Diameter (SRT, M-02550)                                | Finding Site: Transverse Aortic Arch (SRT, T-42304)<br>Topographical modifier: Proximal (SRT, G-A118)<br>Cardiac Cycle Point: Systole (SRT, F-32020) |
|    | X    | [Ao] Aorta: Ao Thoracic Diam       | Diameter (SRT, M-02550)                                | Finding Site: Thoracic Aorta (SRT, T-42070)                                                                                                          |
| X  | X    | [Ao] Aorta: Coarct Diam            | Diameter (SRT, M-02550)                                | Finding Site: Thoracic Aortic Coarctation (SRT, D4-32030)                                                                                            |

| HR                                                                             | Mean | Label                         | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                     |
|--------------------------------------------------------------------------------|------|-------------------------------|--------------------------------------------------------|-----------------------------------------------|
| Measurements are associated with CW and PW, so the image mode is not specified |      |                               |                                                        |                                               |
| X                                                                              | X    | [Ao] Aorta: Ao Asc Mean Grad  | Mean Gradient (LN, 20256-4)                            | Finding Site: Ascending Aorta (SRT, T-42100)  |
| X                                                                              | X    | [Ao] Aorta: Ao Desc Mean Grad | Mean Gradient (LN, 20256-4)                            | Finding Site: Descending Aorta (SRT, T-42400) |
|                                                                                |      | [Ao] Aorta: Ao Asc Peak Grad  | Peak Gradient (LN, 20247-3)                            | Finding Site: Ascending Aorta (SRT, T-42100)  |
|                                                                                |      | [Ao] Aorta: Ao Desc Peak Grad | Peak Gradient (LN, 20247-3)                            | Finding Site: Descending Aorta (SRT, T-42400) |
|                                                                                | X    | [Ao] Aorta: Ao Asc Vmax       | Peak Velocity (LN, 11726-7)                            | Finding Site: Ascending Aorta (SRT, T-42100)  |
|                                                                                | X    | [Ao] Aorta: Ao Desc Vmax      | Peak Velocity (LN, 11726-7)                            | Finding Site: Descending Aorta (SRT, T-42400) |
| Measurements of Image Mode: M mode (SRT, G-0394)                               |      |                               |                                                        |                                               |
|                                                                                | X    | [M] Ao Diam d                 | Aortic Root Diameter (LN, 18015-8)                     | Cardiac Cycle Point: Diastole (SRT, F-32010)  |
|                                                                                | X    | [M] Ao Diam s                 | Aortic Root Diameter (LN, 18015-8)                     | Cardiac Cycle Point: Systole (SRT, F-32020)   |

### 9.1.11 Pulmonary Artery

| HR                                                                             | Mean | Label                                 | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                           |
|--------------------------------------------------------------------------------|------|---------------------------------------|--------------------------------------------------------|-----------------------------------------------------|
| <b>Pulmonary Artery</b>                                                        |      |                                       | Container: Findings (DCM, 121070)                      | Finding Site: Pulmonary Artery (SRT, T-44000)       |
| Measurements of Image Mode: 2D mode (SRT, G-03A2)                              |      |                                       |                                                        |                                                     |
|                                                                                | X    | [A] Pulmonary Arteries: LPA Diam d    | Left Pulmonary Artery Diameter (LN, 18019-0)           | Cardiac Cycle Point: Diastole (SRT, F-32010)        |
|                                                                                | X    | [A] Pulmonary Arteries: LPA Diam s    | Left Pulmonary Artery Diameter (LN, 18019-0)           | Cardiac Cycle Point: Systole (SRT, F-32020)         |
|                                                                                | X    | [A] Pulmonary Arteries: MPA Diam d    | Main Pulmonary Artery Diameter (LN, 18020-8)           | Cardiac Cycle Point: Diastole (SRT, F-32010)        |
|                                                                                | X    | [A] Pulmonary Arteries: MPA Diam s    | Main Pulmonary Artery Diameter (LN, 18020-8)           | Cardiac Cycle Point: Systole (SRT, F-32020)         |
|                                                                                | X    | [A] Pulmonary Arteries: RPA Diam d    | Right Pulmonary Artery Diameter (LN, 18021-6)          | Cardiac Cycle Point: Diastole (SRT, F-32010)        |
|                                                                                | X    | [A] Pulmonary Arteries: RPA Diam s    | Right Pulmonary Artery Diameter (LN, 18021-6)          | Cardiac Cycle Point: Systole (SRT, F-32020)         |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                       |                                                        |                                                     |
|                                                                                | X    | [A] Pulmonary Arteries: MPA Vmax      | Main Pulmonary Artery Peak Velocity (SRT, G-038A)      |                                                     |
|                                                                                |      | [A] Pulmonary Arteries: LPA Peak Grad | Peak Gradient (LN, 20247-3)                            | Finding Site: Left Pulmonary Artery (SRT, T-44400)  |
|                                                                                |      | [A] Pulmonary Arteries: MPA Peak Grad | Peak Gradient (LN, 20247-3)                            |                                                     |
|                                                                                |      | [A] Pulmonary Arteries: RPA Peak Grad | Peak Gradient (LN, 20247-3)                            | Finding Site: Right Pulmonary Artery (SRT, T-44200) |
|                                                                                | X    | [A] Pulmonary Arteries: LPA Vmax      | Peak Velocity (LN, 11726-7)                            | Finding Site: Left Pulmonary Artery (SRT, T-44400)  |
|                                                                                | X    | [A] Pulmonary Arteries: RPA Vmax      | Peak Velocity (LN, 11726-7)                            | Finding Site: Right Pulmonary Artery (SRT, T-44200) |

### 9.1.12 Vena Cava

| HR                                                | Mean | Label                                       | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                       |
|---------------------------------------------------|------|---------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vena Cava</b>                                  |      |                                             | Container: Findings (DCM, 121070)                      | Finding Site: Vena Cava (SRT, T-48600)                                                                                                                                                                          |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                                             |                                                        |                                                                                                                                                                                                                 |
|                                                   | X    | [RA] Subcostal LAX, Diastole: SVC Diam exp  | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal long axis (SRT, G-039E)   |
|                                                   | X    | [RA] Subcostal LAX, Diastole: SVC Diam insp | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal long axis (SRT, G-039E)  |
|                                                   | X    | [RA] Subcostal LAX, Systole: SVC Diam exp   | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal long axis (SRT, G-039E)    |
|                                                   | X    | [RA] Subcostal LAX, Systole: SVC Diam insp  | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal long axis (SRT, G-039E)   |
|                                                   | X    | [RA] Subcostal SAX, Diastole: SVC Diam exp  | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal short axis (SRT, G-039F)  |
|                                                   | X    | [RA] Subcostal SAX, Diastole: SVC Diam insp | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal short axis (SRT, G-039F) |
|                                                   | X    | [RA] Subcostal SAX, Systole: SVC Diam exp   | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal short axis (SRT, G-039F)   |

| HR                                               | Mean | Label                                       | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                      |
|--------------------------------------------------|------|---------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                  | X    | [RA] Subcostal SAX, Systole: SVC Diam insp  | Diameter (SRT, M-02550)                                | Finding Site: Superior Vena Cava (SRT, T-48610)<br>Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal short axis (SRT, G-039F) |
|                                                  | X    | [RA] Subcostal LAX, Diastole: IVC Diam exp  | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal long axis (SRT, G-039E)                                                     |
|                                                  | X    | [RA] Subcostal LAX, Diastole: IVC Diam insp | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal long axis (SRT, G-039E)                                                    |
|                                                  | X    | [RA] Subcostal LAX, Systole: IVC Diam exp   | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal long axis (SRT, G-039E)                                                      |
|                                                  | X    | [RA] Subcostal LAX, Systole: IVC Diam insp  | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal long axis (SRT, G-039E)                                                     |
|                                                  | X    | [RA] Subcostal SAX, Diastole: IVC Diam exp  | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal short axis (SRT, G-039F)                                                    |
|                                                  | X    | [RA] Subcostal SAX, Diastole: IVC Diam insp | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Diastole (SRT, F-32010)<br>Image View: Subcostal short axis (SRT, G-039F)                                                   |
|                                                  | X    | [RA] Subcostal SAX, Systole: IVC Diam exp   | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Expiration (SRT, F-20020)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal short axis (SRT, G-039F)                                                     |
|                                                  | X    | [RA] Subcostal SAX, Systole: IVC Diam insp  | Inferior Vena Cava Diameter (LN, 18006-7)              | Respiratory Cycle Point: During Inspiration (SRT, F-20010)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Image View: Subcostal short axis (SRT, G-039F)                                                    |
| Measurements of Image Mode: M mode (SRT, G-0394) |      |                                             |                                                        |                                                                                                                                                                                                                |
|                                                  | X    | [M] IVC Diam                                | Inferior Vena Cava Diameter (LN, 18006-7)              |                                                                                                                                                                                                                |

### 9.1.13 Pulmonary Venous Structure

PVF is the Pulmonary Venous Flow table on the *Diastology* worksheet.

| HR                                                                             | Mean | Label                                                           | Code Meaning<br>(Coding Scheme Designator, Code Value)                 | Modifiers                                                  |
|--------------------------------------------------------------------------------|------|-----------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Pulmonary Venous Structure</b>                                              |      |                                                                 | Container: Findings (DCM, 121070)                                      | Finding Site: Pulmonary Venous Structure (SRT, T-48581)    |
| Measurements of Image Mode: 2D mode (SRT, G-03A2)                              |      |                                                                 |                                                                        |                                                            |
| X                                                                              | X    | [PVn] LLPV: Diam<br>[D] PVF, LLPV: Diam                         | Diameter (SRT, M-02550)                                                | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
| X                                                                              | X    | [PVn] LUPV: Diam<br>[D] PVF, LUPV: Diam                         | Diameter (SRT, M-02550)                                                | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
| X                                                                              | X    | [PVn] RLPV: Diam<br>[D] PVF, RLPV: Diam                         | Diameter (SRT, M-02550)                                                | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
| X                                                                              | X    | [PVn] RUPV: Diam<br>[D] PVF, RUPV: Diam                         | Diameter (SRT, M-02550)                                                | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                                                 |                                                                        |                                                            |
|                                                                                |      | [PVn] LLPV: A Dur – MV A Dur<br>[D] PVF, LLPV: A Dur – MV A Dur | Pulm Vein A duration to MV A duration difference (LN, 59114-9)         | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
|                                                                                |      | [PVn] LUPV: A Dur – MV A Dur<br>[D] PVF, LUPV: A Dur – MV A Dur | Pulm Vein A duration to MV A duration difference (LN, 59114-9)         | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|                                                                                |      | [PVn] RLPV: A Dur – MV A Dur<br>[D] PVF, RLPV: A Dur – MV A Dur | Pulm Vein A duration to MV A duration difference (LN, 59114-9)         | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|                                                                                |      | [PVn] RUPV: A Dur – MV A Dur<br>[D] PVF, RUPV: A Dur – MV A Dur | Pulm Vein A duration to MV A duration difference (LN, 59114-9)         | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|                                                                                | X    | [PVn] LLPV: A Vmax<br>[D] PVF, LLPV: A Vmax                     | Pulmonary Vein Atrial Contraction Reversal Peak Velocity (LN, 29453-8) | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
|                                                                                | X    | [PVn] LUPV: A Vmax<br>[D] PVF, LUPV: A Vmax                     | Pulmonary Vein Atrial Contraction Reversal Peak Velocity (LN, 29453-8) | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|                                                                                | X    | [PVn] RLPV: A Vmax<br>[D] PVF, RLPV: A Vmax                     | Pulmonary Vein Atrial Contraction Reversal Peak Velocity (LN, 29453-8) | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|                                                                                | X    | [PVn] RUPV: A Vmax<br>[D] PVF, RUPV: A Vmax                     | Pulmonary Vein Atrial Contraction Reversal Peak Velocity (LN, 29453-8) | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|                                                                                | X    | [PVn] LLPV: A Dur<br>[D] PVF, LLPV: A Dur                       | Pulmonary Vein A-Wave Duration (SRT, G-038B)                           | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |

| HR | Mean | Label                                                                             | Code Meaning<br>(Coding Scheme Designator, Code Value)                 | Modifiers                                                  |
|----|------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------|
|    | X    | [PVn] LUPV: A Dur<br>[D] PVF, LUPV: A Dur                                         | Pulmonary Vein A-Wave Duration (SRT, G-038B)                           | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|    | X    | [PVn] RLPV: A Dur<br>[D] PVF, RLPV: A Dur                                         | Pulmonary Vein A-Wave Duration (SRT, G-038B)                           | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|    | X    | [PVn] RUPV: A Dur<br>[D] PVF, RUPV: A Dur                                         | Pulmonary Vein A-Wave Duration (SRT, G-038B)                           | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|    | X    | [PVn] LLPV: D Vmax<br>[D] PVF, LLPV: D Vmax                                       | Pulmonary Vein Diastolic Peak Velocity (LN, 29451-2)                   | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
|    | X    | [PVn] LUPV: D Vmax<br>[D] PVF, LUPV: D Vmax                                       | Pulmonary Vein Diastolic Peak Velocity (LN, 29451-2)                   | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|    | X    | [PVn] RLPV: D Vmax<br>[D] PVF, RLPV: D Vmax                                       | Pulmonary Vein Diastolic Peak Velocity (LN, 29451-2)                   | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|    | X    | [PVn] RUPV: D Vmax<br>[D] PVF, RUPV: D Vmax                                       | Pulmonary Vein Diastolic Peak Velocity (LN, 29451-2)                   | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|    | X    | [PVn] LLPV: D VTI<br>[D] PVF, LLPV: D VTI                                         | Pulmonary Vein D-Wave Velocity Time Integral (SRT, G-038D)             | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
|    | X    | [PVn] LUPV: D VTI<br>[D] PVF, LUPV: D VTI                                         | Pulmonary Vein D-Wave Velocity Time Integral (SRT, G-038D)             | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|    | X    | [PVn] RLPV: D VTI<br>[D] PVF, RLPV: D VTI                                         | Pulmonary Vein D-Wave Velocity Time Integral (SRT, G-038D)             | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|    | X    | [PVn] RUPV: D VTI<br>[D] PVF, RUPV: D VTI                                         | Pulmonary Vein D-Wave Velocity Time Integral (SRT, G-038D)             | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|    | X    | [PVn] LLPV: S VTI<br>[D] PVF, LLPV: S VTI                                         | Pulmonary Vein S-Wave Velocity Time Integral (SRT, G-038C)             | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
|    | X    | [PVn] LUPV: S VTI<br>[D] PVF, LUPV: S VTI                                         | Pulmonary Vein S-Wave Velocity Time Integral (SRT, G-038C)             | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|    | X    | [PVn] RLPV: S VTI<br>[D] PVF, RLPV: S VTI                                         | Pulmonary Vein S-Wave Velocity Time Integral (SRT, G-038C)             | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|    | X    | [PVn] RUPV: S VTI<br>[D] PVF, RUPV: S VTI                                         | Pulmonary Vein S-Wave Velocity Time Integral (SRT, G-038C)             | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|    |      | [PVn] LLPV: Systolic Filling Fraction<br>[D] PVF, LLPV: Systolic Filling Fraction | Pulmonary Vein Systolic Filling Fraction (99SIEMENS, PVeinSysFillFrac) | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |

| HR | Mean | Label                                                                             | Code Meaning<br>(Coding Scheme Designator, Code Value)                    | Modifiers                                                  |
|----|------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------|
|    |      | [PVn] LUPV: Systolic Filling Fraction<br>[D] PVF, LUPV: Systolic Filling Fraction | Pulmonary Vein Systolic Filling Fraction<br>(99SIEMENS, PVeinSysFillFrac) | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|    |      | [PVn] RLPV: Systolic Filling Fraction<br>[D] PVF, RLPV: Systolic Filling Fraction | Pulmonary Vein Systolic Filling Fraction<br>(99SIEMENS, PVeinSysFillFrac) | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|    |      | [PVn] RUPV: Systolic Filling Fraction<br>[D] PVF, RUPV: Systolic Filling Fraction | Pulmonary Vein Systolic Filling Fraction<br>(99SIEMENS, PVeinSysFillFrac) | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|    | X    | [PVn] LLPV: S Vmax<br>[D] PVF, LLPV: S Vmax                                       | Pulmonary Vein Systolic Peak Velocity (LN, 29450-4)                       | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
|    | X    | [PVn] LUPV: S Vmax<br>[D] PVF, LUPV: S Vmax                                       | Pulmonary Vein Systolic Peak Velocity (LN, 29450-4)                       | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|    | X    | [PVn] RLPV: S Vmax<br>[D] PVF, RLPV: S Vmax                                       | Pulmonary Vein Systolic Peak Velocity (LN, 29450-4)                       | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|    | X    | [PVn] RUPV: S Vmax<br>[D] PVF, RUPV: S Vmax                                       | Pulmonary Vein Systolic Peak Velocity (LN, 29450-4)                       | Topographical modifier: Right Upper Segment (SRT, R-404A0) |
|    |      | [PVn] LLPV: S Vmax/D Vmax<br>[D] PVF, LLPV: S Vmax/D Vmax                         | Pulmonary Vein Systolic to Diastolic Ratio (LN, 29452-0)                  | Topographical modifier: Left Lower Segment (SRT, R-4214B)  |
|    |      | [PVn] LUPV: S Vmax/D Vmax<br>[D] PVF, LUPV: S Vmax/D Vmax                         | Pulmonary Vein Systolic to Diastolic Ratio (LN, 29452-0)                  | Topographical modifier: Left Upper Segment (SRT, R-40491)  |
|    |      | [PVn] RLPV: S Vmax/D Vmax<br>[D] PVF, RLPV: S Vmax/D Vmax                         | Pulmonary Vein Systolic to Diastolic Ratio (LN, 29452-0)                  | Topographical modifier: Right Lower Segment (SRT, R-4049E) |
|    |      | [PVn] RUPV: S Vmax/D Vmax<br>[D] PVF, RUPV: S Vmax/D Vmax                         | Pulmonary Vein Systolic to Diastolic Ratio (LN, 29452-0)                  | Topographical modifier: Right Upper Segment (SRT, R-404A0) |

### 9.1.14 Cardiac Shunt Study

| HR                                                | Mean | Label               | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                               |
|---------------------------------------------------|------|---------------------|--------------------------------------------------------|---------------------------------------------------------|
| <b>Cardiac Shunt Study</b>                        |      |                     | Container: Findings (DCM, 121070)                      | Finding Site: Cardiac Shunt Study (SRT, P5-30031)       |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                     |                                                        |                                                         |
|                                                   |      | [Sh] Pulm Side Area | Area (SRT, G-A166)                                     | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide) |
|                                                   |      | [Sh] Sys Side Area  | Area (SRT, G-A166)                                     | Finding Site: Systemic side (99SIEMENS, SystemicSide)   |

| HR                                                                             | Mean | Label                                          | Code Meaning<br>(Coding Scheme Designator, Code Value)                           | Modifiers                                                                                          |
|--------------------------------------------------------------------------------|------|------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| X                                                                              | X    | [Sh] ASD Ant-Post Diam                         | Diameter (SRT, M-02550)                                                          | Derivation: Anterior-Posterior (DCM, 122675)<br>Finding Site: Atrial Septal Defect (SRT, D4-31220) |
| X                                                                              | X    | [Sh] PDA Diam                                  | Diameter (SRT, M-02550)                                                          | Finding Site: Patent Ductus Arteriosus (SRT, D4-32012)                                             |
| X                                                                              | X    | [Sh] Pulm Side Diam                            | Diameter (SRT, M-02550)                                                          | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide)                                            |
| X                                                                              | X    | [Sh] Sys Side Diam                             | Diameter (SRT, M-02550)                                                          | Finding Site: Systemic side (99SIEMENS, SystemicSide)                                              |
| X                                                                              | X    | [Sh] VSD Diam                                  | Diameter (SRT, M-02550)                                                          | Finding Site: Ventricular Septal Defect (SRT, D4-31150)                                            |
| X                                                                              | X    | [Sh] ASD Major Diam                            | Major Axis (SRT, G-A193)                                                         | Finding Site: Atrial Septal Defect (SRT, D4-31220)                                                 |
| X                                                                              | X    | [Sh] VSD Major Diam                            | Major Axis (SRT, G-A193)                                                         | Finding Site: Ventricular Septal Defect (SRT, D4-31150)                                            |
| X                                                                              | X    | [Sh] ASD Minor Diam                            | Minor Axis (SRT, G-A194)                                                         | Finding Site: Atrial Septal Defect (SRT, D4-31220)                                                 |
| X                                                                              | X    | [Sh] VSD Minor Diam                            | Minor Axis (SRT, G-A194)                                                         | Finding Site: Ventricular Septal Defect (SRT, D4-31150)                                            |
| X                                                                              | X    | [Sh] ASD Sup-Inf Diam                          | Superior-Inferior Diameter (99SIEMENS, SupInfDiam)                               | Finding Site: Atrial Septal Defect (SRT, D4-31220)                                                 |
| Measurements are associated with CW and PW, so the image mode is not specified |      |                                                |                                                                                  |                                                                                                    |
|                                                                                |      | [Sh] Pulm Side CI                              | Cardiac Index (SRT, F-32110)                                                     | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide)<br>Index: Body Surface Area (LN, 8277-6)   |
|                                                                                |      | [Sh] Sys Side CI                               | Cardiac Index (SRT, F-32110)                                                     | Finding Site: Systemic side (99SIEMENS, SystemicSide)<br>Index: Body Surface Area (LN, 8277-6)     |
|                                                                                |      | [Sh] Pulm Side CO                              | Cardiac Output (SRT, F-32100)                                                    | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide)                                            |
|                                                                                |      | [Sh] Sys Side CO                               | Cardiac Output (SRT, F-32100)                                                    | Finding Site: Systemic side (99SIEMENS, SystemicSide)                                              |
|                                                                                |      | [Sh] Pulm Side HR                              | Composite heart rate (99SIEMENS, CompositeHR)                                    | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide)                                            |
|                                                                                |      | [Sh] Sys Side HR                               | Composite heart rate (99SIEMENS, CompositeHR)                                    | Finding Site: Systemic side (99SIEMENS, SystemicSide)                                              |
|                                                                                |      | [Sh] Qp-Qs                                     | Difference between Pulmonary Valve CO and Aortic Valve CO (99SIEMENS, QpMinusQs) |                                                                                                    |
|                                                                                |      | [Sh] ASD Peak Grad                             | Peak Gradient (LN, 20247-3)                                                      | Finding Site: Atrial Septal Defect (SRT, D4-31220)                                                 |
|                                                                                |      | [Sh] VSD Peak Grad<br>[RV] RVSP: VSD Peak Grad | Peak Gradient (LN, 20247-3)                                                      | Finding Site: Ventricular Septal Defect (SRT, D4-31150)                                            |
|                                                                                | X    | [Sh] ASD Vmax                                  | Peak Velocity (LN, 11726-7)                                                      | Finding Site: Atrial Septal Defect (SRT, D4-31220)                                                 |
|                                                                                | X    | [Sh] VSD Vmax                                  | Peak Velocity (LN, 11726-7)                                                      | Finding Site: Ventricular Septal Defect (SRT, D4-31150)                                            |
|                                                                                |      | [Sh] Qp/Qs                                     | Pulmonary-to-Systemic Shunt Flow Ratio (LN, 29462-9)                             |                                                                                                    |
|                                                                                |      | [Sh] Pulm Side SI                              | Stroke Index (SRT, F-00078)                                                      | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide)<br>Index: Body Surface Area (LN, 8277-6)   |

| HR | Mean | Label              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                      |
|----|------|--------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------|
|    |      | [Sh] Sys Side SI   | Stroke Index (SRT, F-00078)                            | Finding Site: Systemic side (99SIEMENS, SystemicSide)<br>Index: Body Surface Area (LN, 8277-6) |
|    |      | [Sh] Pulm Side SV  | Stroke Volume (SRT, F-32120)                           | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide)                                        |
|    |      | [Sh] Sys Side SV   | Stroke Volume (SRT, F-32120)                           | Finding Site: Systemic side (99SIEMENS, SystemicSide)                                          |
| X  | X    | [Sh] Pulm Side VTI | Velocity Time Integral (LN, 20354-7)                   | Finding Site: Pulmonary side (99SIEMENS, PulmonarySide)                                        |
| X  | X    | [Sh] Sys Side VTI  | Velocity Time Integral (LN, 20354-7)                   | Finding Site: Systemic side (99SIEMENS, SystemicSide)                                          |

### 9.1.15 Private Section: Coronary Artery

| HR                                                | Mean | Label                                       | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                 |
|---------------------------------------------------|------|---------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Coronary artery</b>                            |      |                                             | Container: Findings (DCM, 121070)                      | Finding Site: Coronary artery (SRT, T-43000)                                                              |
| Measurements of Image Mode: 2D mode (SRT, G-03A2) |      |                                             |                                                        |                                                                                                           |
| X                                                 | X    | [A] Coronary Arteries: Circumflex Diam      | Diameter (SRT, M-02550)                                | Finding Site: Circumflex Coronary Artery (SRT, T-43120)                                                   |
| X                                                 | X    | [A] Coronary Arteries: Circumflex Diam Prox | Diameter (SRT, M-02550)                                | Finding Site: Circumflex Coronary Artery (SRT, T-43120)<br>Topographical modifier: Proximal (SRT, G-A118) |
| X                                                 | X    | [A] Coronary Arteries: LAD Diam             | Diameter (SRT, M-02550)                                | Finding Site: Left Anterior Descending Coronary Artery (SRT, T-4311A)                                     |
| X                                                 | X    | [A] Coronary Arteries: Left Main Diam       | Diameter (SRT, M-02550)                                | Finding Site: Left Main Coronary Artery (SRT, T-43107)                                                    |
| X                                                 | X    | [A] Coronary Arteries: RCA Diam             | Diameter (SRT, M-02550)                                | Finding Site: Right Coronary Artery (SRT, T-43203)                                                        |

### 9.1.16 Private Section: Stress Echo

Beginning with the VA12A release, Left Ventricular Analysis can be performed on images acquired during a Stress Echo stage. The Stress Echo LVA results for a single stage are contained within a Private Stress Echo SR section as described below.

TID 5200 Extension

|    | NL | Rel with Parent | VT      | Concept Name             | VM  | Req Type | Condition | Value Set Constraint |
|----|----|-----------------|---------|--------------------------|-----|----------|-----------|----------------------|
| 22 | >  | CONTAINS        | INCLUDE | Private TID: Stress Echo | 1-n | U        |           |                      |

Private TID: Stress Echo

|  | NL | Rel with Parent | VT | Concept Name | VM | Req Type | Condition | Value Set Constraint |
|--|----|-----------------|----|--------------|----|----------|-----------|----------------------|
|--|----|-----------------|----|--------------|----|----------|-----------|----------------------|

|   | NL  | Rel with Parent | VT        | Concept Name                                             | VM  | Req Type | Condition | Value Set Constraint                                       |
|---|-----|-----------------|-----------|----------------------------------------------------------|-----|----------|-----------|------------------------------------------------------------|
| 1 |     |                 | CONTAINER | EV (121070, DCM, "Findings")                             | 1   | M        |           |                                                            |
| 2 | >   | HAS CONCEPT MOD | CODE      | EV (121058, DCM, "Procedure reported")                   | 1   | M        |           | DT (StressEcho, 99SIEMENS, "Stress Echo")                  |
| 3 | >   | HAS ACQ CONTEXT | NUM       | (StageNumber,99SIEMENS, "Stage Number")                  | 1   | M        |           | UNITS = EV (1, UCUM, "no units")                           |
| 4 | >   | HAS ACQ CONTEXT | CODE      | EV (LN, 18139-6, "Stage")                                | 1   | M        |           | BCID (12002) Ultrasound Protocol Stage Types               |
| 5 | >   | HAS ACQ CONTEXT | TEXT      | EV (UserStageName, 99SIEMENS, "User-defined Stage Name") | 1   | U        |           |                                                            |
| 6 | >   | CONTAINS        | CONTAINER | (121070, DCM, "Findings")                                | 1-n | M        |           |                                                            |
| 7 | >>  | HAS CONCEPT MOD | CODE      | (CAP, 99SIEMENS, "Clinical Application Package")         | 1   | M        |           | value=(LVAnalysis, 99SIEMENS, "Left Ventricular Analysis") |
| 8 | >>  | CONTAINS        | CONTAINER | DT (125007, DCM, "Measurement Group")                    | 1   | M        |           |                                                            |
| 9 | >>> | CONTAINS        | INCLUDE   | DTID (5203) Echo Measurement                             | 1-n | M        |           | \$Measurement = CID Left Ventricular Analysis              |

CID 12002      Ultrasound Protocol Stage Types (from CP-817)

| Coding Scheme Designator<br>(0008,0102)       | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104) |
|-----------------------------------------------|---------------------------|-----------------------------|
| Include CID 3207 Stress Test Procedure Phases |                           |                             |
| 99SIEMENS                                     | UserDefinedStage          | User-defined stage          |

CID 3207      Stress Test Procedure Phases (from CP-817)

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104)   | SC2000 Stage Name     |
|-----------------------------------------|---------------------------|-------------------------------|-----------------------|
| SRT                                     | F-01602                   | Baseline                      | Baseline              |
| SRT                                     | F-05028                   | Peak cardiac stress state     | Peak Exercise or Peak |
| SRT                                     | F-05018                   | Cardiac stress recovery state | Recovery              |
| SRT                                     | F-01604                   | Resting State                 | Rest                  |
| 99SIEMENS                               | Post                      | Post                          | Post                  |
| 99SIEMENS                               | PostExecute               | Post Exercise                 | Post Exercise         |
| 99SIEMENS                               | Impost                    | Impost                        | Impost                |
| 99SIEMENS                               | LowExercise               | Low Exercise                  | Low Exercise          |

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104) | SC2000 Stage Name |
|-----------------------------------------|---------------------------|-----------------------------|-------------------|
| 99SIEMENS                               | LowDose                   | Low Dose                    | Low Dose          |
| 99SIEMENS                               | HighDose                  | High Dose                   | High Dose         |
| 99SIEMENS                               | 5µg                       | 5µg/kg/min                  | 5µg/kg/min        |
| 99SIEMENS                               | 10µg                      | 10µg/kg/min                 | 10µg/kg/min       |
| 99SIEMENS                               | 20µg                      | 20µg/kg/min                 | 20µg/kg/min       |
| 99SIEMENS                               | 30µg                      | 30µg/kg/min                 | 30µg/kg/min       |
| 99SIEMENS                               | 40µg                      | 40µg/kg/min                 | 40µg/kg/min       |
| 99SIEMENS                               | 50µg                      | 50µg/kg/min                 | 50µg/kg/min       |
| SRT                                     | C-67770                   | Atropine                    | Atropine          |
| SRT                                     | C-80349                   | Adenosine                   | Adenosine         |

### 9.1.16.1 Stress Echo and LVA

These measurements appear on the *Stress Echo and LVA* worksheet.

| HR                               | Mean | Label              | Code Meaning<br>(Coding Scheme Designator, Code Value)                 | Modifiers                                                                                                                                                                     |
|----------------------------------|------|--------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Stress Echo</b>               |      |                    | Container: Findings (DCM, 121070)                                      | Procedure reported: Stress Echo (99SIEMENS, StressEcho)<br>Stage Number (99SIEMENS, StageNumber)<br>Stage (LN, 18139-6)<br>User-defined Stage Name (99SIEMENS, UserStageName) |
| <b>Left Ventricular Analysis</b> |      |                    | Container: Findings (DCM, 121070)                                      | Clinical Application Package: Left Ventricular Analysis<br>(99SIEMENS, LVAnalysis)                                                                                            |
|                                  | X    | [SE-LVA] DDI 16    | Diastolic Dyssynchrony Index (16 segment ASE model) (99SIEMENS, DDI16) |                                                                                                                                                                               |
|                                  | X    | [SE-LVA] DDI 17    | Diastolic Dyssynchrony Index (17 segment ASE model) (99SIEMENS, DDI17) |                                                                                                                                                                               |
|                                  | X    | [SE-LVA] DISPED 16 | Dispersion End Diastole (16 segment ASE model) (99SIEMENS, DISPED16)   |                                                                                                                                                                               |
|                                  | X    | [SE-LVA] DISPED 17 | Dispersion End Diastole (17 segment ASE model) (99SIEMENS, DISPED17)   |                                                                                                                                                                               |
|                                  | X    | [SE-LVA] DISPES 16 | Dispersion End Systole (16 segment ASE model) (99SIEMENS, DISPES16)    |                                                                                                                                                                               |
|                                  | X    | [SE-LVA] DISPES 17 | Dispersion End Systole (17 segment ASE model) (99SIEMENS, DISPES17)    |                                                                                                                                                                               |

| HR | Mean | Label                  | Code Meaning<br>(Coding Scheme Designator, Code Value)                          | Modifiers |
|----|------|------------------------|---------------------------------------------------------------------------------|-----------|
|    | X    | [SE-LVA] EDSI          | End Diastolic Sphericity Index (99SIEMENS, EDSI)                                |           |
|    | X    | [SE-LVA] ESSI          | End Systolic Sphericity Index (99SIEMENS, ESSI)                                 |           |
|    | X    | [SE-LVA] EF            | Left Ventricular Ejection Fraction (LN, 18043-0)                                |           |
|    | X    | [SE-LVA] EDV           | Left Ventricular End Diastolic Volume (LN, 18026-5)                             |           |
|    | X    | [SE-LVA] ESV           | Left Ventricular End Systolic Volume (LN, 18148-7)                              |           |
|    | X    | [SE-LVA] MED 16        | Mean ED time (16 segment ASE model)<br>(99SIEMENS, MED16)                       |           |
|    | X    | [SE-LVA] MED 17        | Mean ED time (17 segment ASE model)<br>(99SIEMENS, MED17)                       |           |
|    | X    | [SE-LVA] MES 16        | Mean ES time (16 segment ASE model)<br>(99SIEMENS, MES16)                       |           |
|    | X    | [SE-LVA] MES 17        | Mean ES time (17 segment ASE model)<br>(99SIEMENS, MES17)                       |           |
|    | X    | [SE-LVA] Post Contr 16 | Post-contraction Time Volume (16 segment ASE<br>model) (99SIEMENS, PostContr16) |           |
|    | X    | [SE-LVA] Post Contr 17 | Post-contraction Time Volume (17 segment ASE<br>model) (99SIEMENS, PostContr17) |           |
|    | X    | [SE-LVA] Post Relax 16 | Post-relaxation Time Volume (16 segment ASE<br>model) (99SIEMENS, PostRelax16)  |           |
|    | X    | [SE-LVA] Post Relax 17 | Post-relaxation Time Volume (17 segment ASE<br>model) (99SIEMENS, PostRelax17)  |           |
|    | X    | [SE-LVA] Pre Contr 16  | Pre-contraction Time Volume (16 segment ASE<br>model) (99SIEMENS, PreContr16)   |           |
|    | X    | [SE-LVA] Pre Contr 17  | Pre-contraction Time Volume (17 segment ASE<br>model) (99SIEMENS, PreContr17)   |           |
|    | X    | [SE-LVA] Pre Relax 16  | Pre-relaxation Time Volume (16 segment ASE<br>model) (99SIEMENS, PreRelax16)    |           |
|    | X    | [SE-LVA] Pre Relax 17  | Pre-relaxation Time Volume (17 segment ASE<br>model) (99SIEMENS, PreRelax17)    |           |
|    | X    | [SE-LVA] SV            | Stroke Volume (SRT, F-32120)                                                    |           |
|    | X    | [SE-LVA] SDI 16        | Systolic Dyssynchrony Index (16 segment ASE<br>model) (99SIEMENS, SDI16)        |           |
|    | X    | [SE-LVA] SDI 17        | Systolic Dyssynchrony Index (17 segment ASE<br>model) (99SIEMENS, SDI17)        |           |

### 9.1.17 Private Section: Clinical Application Package

Results from Clinical Application Packages are in private sections defined as Findings CONTAINERS with the modifier HAS CONCEPT MOD, CODE, Clinical Application Package (99SIEMENS, CAP) with VM of 1.

The SR measurements for each CAP are defined in the following sections. Worksheet edits to CAP results are not saved to the SR.

The general Clinical Application Package (CAP) SR structure is defined below.

TID 5200 Extension

|    | NL | Rel with Parent | VT      | Concept Name                              | VM  | Req Type | Condition | Value Set Constraint |
|----|----|-----------------|---------|-------------------------------------------|-----|----------|-----------|----------------------|
| 22 | >  | CONTAINS        | INCLUDE | Private TID: Clinical Application Package | 1-n | U        |           |                      |

Private TID: Clinical Application Package

|   | NL | Rel with Parent | VT        | Concept Name                                     | VM  | Req Type | Condition | Value Set Constraint              |
|---|----|-----------------|-----------|--------------------------------------------------|-----|----------|-----------|-----------------------------------|
| 1 |    |                 | CONTAINER | EV (121070, DCM, "Findings")                     | 1   | M        |           |                                   |
| 2 | >  | HAS CONCEPT MOD | CODE      | (CAP, 99SIEMENS, "Clinical Application Package") | 1   | M        |           | CID Clinical Application Packages |
| 3 | >  | CONTAINS        | CONTAINER | DT (125007, DCM, "Measurement Group")            | 1-n | M        |           |                                   |
| 4 | >> | CONTAINS        | INCLUDE   | DTID (5203) Echo Measurement                     | 1-n | M        |           | Defined by each CAP               |

Private CID Clinical Application Packages

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104) |
|-----------------------------------------|---------------------------|-----------------------------|
| 99SIEMENS                               | LVAnalysis                | Left Ventricular Analysis   |
| 99SIEMENS                               | RVAnalysis                | Right Ventricular Analysis  |
| 99SIEMENS                               | VVI                       | Velocity Vector Imaging     |
| 99SIEMENS                               | 3DPISA                    | 3D PISA                     |
| 99SIEMENS                               | ValvesAnalysis            | Valves Analysis             |
| 99SIEMENS                               | FlowAnalysis              | Flow Analysis               |

### 9.1.17.1 CAP: Left Ventricular Analysis

These measurements appear on the *LVA and RVA* worksheet in the LVA table.

| HR                               | Mean | Label                   | Code Meaning<br>(Coding Scheme Designator, Code Value)                       | Modifiers                                                                          |
|----------------------------------|------|-------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Left Ventricular Analysis</b> |      |                         | Container: Findings (DCM, 121070)                                            | Clinical Application Package: Left Ventricular Analysis<br>(99SIEMENS, LVAnalysis) |
|                                  | X    | [LR] LVA: DDI 16        | Diastolic Dyssynchrony Index (16 segment ASE model) (99SIEMENS, DDI16)       |                                                                                    |
|                                  | X    | [LR] LVA: DDI 17        | Diastolic Dyssynchrony Index (17 segment ASE model) (99SIEMENS, DDI17)       |                                                                                    |
|                                  | X    | [LR] LVA: DISPED 16     | Dispersion End Diastole (16 segment ASE model) (99SIEMENS, DISPED16)         |                                                                                    |
|                                  | X    | [LR] LVA: DISPED 17     | Dispersion End Diastole (17 segment ASE model) (99SIEMENS, DISPED17)         |                                                                                    |
|                                  | X    | [LR] LVA: DISPES 16     | Dispersion End Systole (16 segment ASE model) (99SIEMENS, DISPES16)          |                                                                                    |
|                                  | X    | [LR] LVA: DISPES 17     | Dispersion End Systole (17 segment ASE model) (99SIEMENS, DISPES17)          |                                                                                    |
|                                  | X    | [LR] LVA: EDSI          | End Diastolic Sphericity Index (99SIEMENS, EDSI)                             |                                                                                    |
|                                  | X    | [LR] LVA: ESSI          | End Systolic Sphericity Index (99SIEMENS, ESSI)                              |                                                                                    |
|                                  | X    | [LR] LVA: EF            | Left Ventricular Ejection Fraction (LN, 18043-0)                             |                                                                                    |
|                                  | X    | [LR] LVA: EDV           | Left Ventricular End Diastolic Volume (LN, 18026-5)                          |                                                                                    |
|                                  | X    | [LR] LVA: ESV           | Left Ventricular End Systolic Volume (LN, 18148-7)                           |                                                                                    |
|                                  | X    | [LR] LVA: MED 16        | Mean ED time (16 segment ASE model) (99SIEMENS, MED16)                       |                                                                                    |
|                                  | X    | [LR] LVA: MED 17        | Mean ED time (17 segment ASE model) (99SIEMENS, MED17)                       |                                                                                    |
|                                  | X    | [LR] LVA: MES 16        | Mean ES time (16 segment ASE model) (99SIEMENS, MES16)                       |                                                                                    |
|                                  | X    | [LR] LVA: MES 17        | Mean ES time (17 segment ASE model) (99SIEMENS, MES17)                       |                                                                                    |
|                                  | X    | [LR] LVA: Post Contr 16 | Post-contraction Time Volume (16 segment ASE model) (99SIEMENS, PostContr16) |                                                                                    |
|                                  | X    | [LR] LVA: Post Contr 17 | Post-contraction Time Volume (17 segment ASE model) (99SIEMENS, PostContr17) |                                                                                    |
|                                  | X    | [LR] LVA: Post Relax 16 | Post-relaxation Time Volume (16 segment ASE model) (99SIEMENS, PostRelax16)  |                                                                                    |

| HR | Mean | Label                   | Code Meaning<br>(Coding Scheme Designator, Code Value)                      | Modifiers |
|----|------|-------------------------|-----------------------------------------------------------------------------|-----------|
|    | X    | [LR] LVA: Post Relax 17 | Post-relaxation Time Volume (17 segment ASE model) (99SIEMENS, PostRelax17) |           |
|    | X    | [LR] LVA: Pre Contr 16  | Pre-contraction Time Volume (16 segment ASE model) (99SIEMENS, PreContr16)  |           |
|    | X    | [LR] LVA: Pre Contr 17  | Pre-contraction Time Volume (17 segment ASE model) (99SIEMENS, PreContr17)  |           |
|    | X    | [LR] LVA: Pre Relax 16  | Pre-relaxation Time Volume (16 segment ASE model) (99SIEMENS, PreRelax16)   |           |
|    | X    | [LR] LVA: Pre Relax 17  | Pre-relaxation Time Volume (17 segment ASE model) (99SIEMENS, PreRelax17)   |           |
|    | X    | [LR] LVA: SV            | Stroke Volume (SRT, F-32120)                                                |           |
|    | X    | [LR] LVA: SDI 16        | Systolic Dyssynchrony Index (16 segment ASE model) (99SIEMENS, SDI16)       |           |
|    | X    | [LR] LVA: SDI 17        | Systolic Dyssynchrony Index (17 segment ASE model) (99SIEMENS, SDI17)       |           |

### 9.1.17.2 CAP: Right Ventricular Analysis

These measurements appear on the *LVA and RVA* worksheet in the RVA table.

| HR                                | Mean | Label         | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                        |
|-----------------------------------|------|---------------|--------------------------------------------------------|----------------------------------------------------------------------------------|
| <b>Right Ventricular Analysis</b> |      |               | Container: Findings (DCM, 121070)                      | Clinical Application Package: Right Ventricular Analysis (99SIEMENS, RVAnalysis) |
|                                   | X    | [LR] RVA: EDV | Right Ventricular ED Volume (LN, 8822-3)               |                                                                                  |
|                                   | X    | [LR] RVA: ESV | Right Ventricular ES Volume (LN, 8824-5)               |                                                                                  |
|                                   | X    | [LR] RVA: EF  | RV Ejection Fraction (LN, 10231-9)                     |                                                                                  |
|                                   | X    | [LR] RVA: SV  | Stroke Volume (SRT, F-32120)                           |                                                                                  |

**9.1.17.3 CAP: Velocity Vector Imaging**

The Clinical Application Package (CAP) SR structure for Velocity Vector Imaging (VVI) results is defined below.

TID 5200 Extension

|    | NL | Rel with Parent | VT      | Concept Name                                                          | VM | Req Type | Condition | Value Set Constraint |
|----|----|-----------------|---------|-----------------------------------------------------------------------|----|----------|-----------|----------------------|
| 22 | >  | CONTAINS        | INCLUDE | Private TID: Clinical Application Package for Velocity Vector Imaging | 1  | U        |           |                      |

Private TID: Clinical Application Package for Velocity Vector Imaging

|    | NL  | Rel with Parent | VT        | Concept Name                                        | VM  | Req Type | Condition | Value Set Constraint                                 |
|----|-----|-----------------|-----------|-----------------------------------------------------|-----|----------|-----------|------------------------------------------------------|
| 1  |     |                 | CONTAINER | EV (121070, DCM, "Findings")                        | 1   | U        |           |                                                      |
| 2  | >   | HAS CONCEPT MOD | CODE      | EV (CAP, 99SIEMENS, "Clinical Application Package") | 1   | M        |           | = (VVI, 99SIEMENS, "Velocity Vector Imaging")        |
| 3  | >   | CONTAINS        | CONTAINER | DT (125007, DCM, "Measurement Group")               | 1   | U        |           |                                                      |
| 4  | >>  | CONTAINS        | NUM       | DTID (300) Measurement                              | 1-n | M        |           | \$Measurement = DCID VVI Measurements                |
| 5  | >>> | HAS CONCEPT MOD | CODE      | (Derivation, DCM, 121401)                           | 1   | U        |           | DCID VVI Derivations                                 |
| 6  | >>> | HAS CONCEPT MOD | CODE      | (R-4089A, SRT, "Cardiac Cycle Point")               | 1   | U        |           | DCID (12233) Cardiac Phase                           |
| 7  | >>> | HAS ACQ CONTEXT | CODE      | (111031, DCM, "Image View")                         | 1   | U        |           | DCID VVI Image View                                  |
| 8  | >>> | HAS CONCEPT MOD | CODE      | (MyocardialMech, 99SIEMENS, "Myocardial Mechanics") | 1   | M        |           | DCID VVI Myocardial Mechanics                        |
| 9  | >   | CONTAINS        | CONTAINER | DT (125007, DCM, "Measurement Group")               | 1-n | M        |           |                                                      |
| 10 | >>  | HAS CONCEPT MOD | TEXT      | (WallSegmentNum, 99SIEMENS, "Wall Segment Number")  | 1   | M        |           | Segment number corresponding to AHA 17-Segment Model |
| 11 | >>  | CONTAINS        | CODE      | (18179-2, LN, "Wall Segment")                       | 1   | M        |           | BCID (3717) Myocardial Wall Segments                 |
| 12 | >>  | CONTAINS        | NUM       | DTID (300) Measurement                              | 1-n | M        |           | \$Measurement = DCID VVI Measurements                |
| 13 | >>> | HAS CONCEPT MOD | CODE      | (R-4089A, SRT, "Cardiac Cycle Point")               | 1   | U        |           | DCID (12233) Cardiac Phase                           |
| 14 | >>> | HAS CONCEPT MOD | CODE      | (MyocardialMech, 99SIEMENS, "Myocardial Mechanics") | 1   | M        |           | DCID VVI Myocardial Mechanics                        |

## Private CID VVI Derivations

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104)       |
|-----------------------------------------|---------------------------|-----------------------------------|
| SRT                                     | G-A437                    | Maximum                           |
| SRT                                     | R-00317                   | Mean                              |
| 99SIEMENS                               | Mean12Segments            | Mean of 12 Segments               |
| 99SIEMENS                               | MeanApexSegments          | Mean of Apical Segments           |
| 99SIEMENS                               | MeanBaseSegments          | Mean of Basal Segments            |
| 99SIEMENS                               | MeanMidSegments           | Mean of Mid-cavity Segments       |
| 99SIEMENS                               | Twist                     | Apical mean minus Basal mean      |
| SRT                                     | R-10047                   | Standard Deviation                |
| 99SIEMENS                               | StdDev12Segments          | Standard Deviation of 12 Segments |

## Private CID VVI Image Views

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104) |
|-----------------------------------------|---------------------------|-----------------------------|
| SRT                                     | G-A19C                    | Apical four chamber         |
| SRT                                     | G-0395                    | Apical long axis            |
| SRT                                     | G-A19B                    | Apical two chamber          |

## Private CID VVI Measurements

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104) |
|-----------------------------------------|---------------------------|-----------------------------|
| 99SIEMENS                               | EPeak                     | E Peak                      |
| 99SIEMENS                               | OverallPeak               | Overall Peak                |
| 99SIEMENS                               | Peak                      | Peak                        |
| 99SIEMENS                               | TimeOverallPeak           | Time to Overall Peak        |
| LN                                      | 59121-4                   | Time to Peak by US          |

## Private CID VVI Myocardial Mechanics

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104) |
|-----------------------------------------|---------------------------|-----------------------------|
| 99SIEMENS                               | LongDisplacmt             | Longitudinal Displacement   |

| Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning<br>(0008,0104) |
|-----------------------------------------|---------------------------|-----------------------------|
| 99SIEMENS                               | RadialDisplacmt           | Radial Displacement         |
| 99SIEMENS                               | RotatnDisplacmt           | Rotation Displacement       |
| 99SIEMENS                               | CircumStrain              | Circumferential Strain      |
| 99SIEMENS                               | LongStrain                | Longitudinal Strain         |
| 99SIEMENS                               | RadialStrain              | Radial Strain               |
| 99SIEMENS                               | CircumStrainRate          | Circumferential Strain Rate |
| 99SIEMENS                               | LongStrainRate            | Longitudinal Strain Rate    |
| 99SIEMENS                               | RadialStrainRate          | Radial Strain Rate          |
| 99SIEMENS                               | LongVelocity              | Longitudinal Velocity       |
| 99SIEMENS                               | RadialVelocity            | Radial Velocity             |
| 99SIEMENS                               | RotatnVelocity            | Rotation Velocity           |

## BCID 3717      Myocardial Wall Segments

| Wall Segment Number | Coding Scheme Designator<br>(0008,0102) | Code Value<br>(0008,0100) | Code Meaning (0008,0104)                   |
|---------------------|-----------------------------------------|---------------------------|--------------------------------------------|
| 1                   | SRT                                     | T-32619                   | left ventricle basal anterior segment      |
| 2                   | SRT                                     | R-10075                   | left ventricle basal anteroseptal segment  |
| 3                   | SRT                                     | R-10076                   | left ventricle basal inferoseptal segment  |
| 4                   | SRT                                     | T-32615                   | left ventricle basal inferior segment      |
| 5                   | SRT                                     | R-10079                   | left ventricle basal inferolateral segment |
| 6                   | SRT                                     | R-1007A                   | left ventricle basal anterolateral segment |
| 7                   | SRT                                     | T-32617                   | left ventricle mid anterior segment        |
| 8                   | SRT                                     | R-10077                   | left ventricle mid anteroseptal segment    |
| 9                   | SRT                                     | R-10078                   | left ventricle mid inferoseptal segment    |
| 10                  | SRT                                     | T-32616                   | left ventricle mid inferior segment        |
| 11                  | SRT                                     | R-1007B                   | left ventricle mid inferolateral segment   |
| 12                  | SRT                                     | R-1007C                   | left ventricle mid anterolateral segment   |
| 13                  | SRT                                     | T-32613                   | left ventricle apical anterior segment     |
| 14                  | SRT                                     | T-32614                   | left ventricle apical septal segment       |
| 15                  | SRT                                     | T-32618                   | left ventricle apical inferior segment     |
| 16                  | SRT                                     | T-3261C                   | left ventricle apical lateral segment      |
| 17                  | SRT                                     | T-32602                   | apex of left ventricle                     |

VVI results are displayed over 4 worksheet pages. Some VVI results are only shown on the *Myocardial LV Mechanics* Report page and are displayed in the Report section identified by the following notation in the Label column:

| <u>Notation</u> | <u>Report Section</u> |
|-----------------|-----------------------|
| [Report-D]      | Displacement          |
| [Report-R]      | Rotation              |
| [Report-S]      | Strain Overall        |
| [Report-SR]     | Strain Rate           |
| [Report-V]      | Velocity              |

| HR                             | Mean | Label                                                                | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                  |
|--------------------------------|------|----------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Velocity Vector Imaging</b> |      |                                                                      | Container: Findings (DCM, 121070)                      | Clinical Application Package: Velocity Vector Imaging (99SIEMENS, VVI)                                                                                                                                                                                     |
|                                |      |                                                                      | Container: Measurement Group (DCM, 125007)             | Wall Segment Number (99SIEMENS, WallSegmentNum)                                                                                                                                                                                                            |
|                                |      | [ Not shown ]                                                        | Wall Segment (LN, 18179-2)                             |                                                                                                                                                                                                                                                            |
|                                |      | [Report-V] Global (Seg 1-12): Long Pk E'                             | E Peak (99SIEMENS, EPeak)                              | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Velocity (99SIEMENS, LongVelocity)                                                                                           |
|                                |      | [Report-V] Std Dev (Seg 1-12): Long Pk E'                            | E Peak (99SIEMENS, EPeak)                              | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Velocity (99SIEMENS, LongVelocity)                                                                           |
|                                |      | [VVI-V] Peak E', Long: Avg                                           | E Peak (99SIEMENS, EPeak)                              | Derivation: Mean (SRT, R-00317)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Velocity (99SIEMENS, LongVelocity)                                                                                                                       |
|                                | X    | [VVI-V] Peak E', Long: Segment <n> where <n> = 1..17                 | E Peak (99SIEMENS, EPeak)                              | Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Velocity (99SIEMENS, LongVelocity)                                                                                                                                                          |
|                                |      | [VVI-V] Peak E', Long: Std Dev                                       | E Peak (99SIEMENS, EPeak)                              | Derivation: Standard Deviation (SRT, R-10047)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Velocity (99SIEMENS, LongVelocity)                                                                                                         |
|                                |      | [Report-S] Global (Seg 1-12): Long Pk Overall, Radial Pk, or Circ Pk | Overall Peak (99SIEMENS, OverallPeak)                  | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain) |

| HR | Mean | Label                                                                                                       | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                  |
|----|------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [Report-S] Global: Long <A2C, A3C, or A4C> Pk                                                               | Overall Peak (99SIEMENS, OverallPeak)                  | Derivation: Mean (SRT, R-00317)<br>Image View: Apical two chamber (SRT, G-A19B), Apical long axis (SRT, G-0395), or Apical four chamber (SRT, G-A19C)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Strain (99SIEMENS, LongStrain)                     |
|    |      | [Report-S] Std Dev (Seg 1-12): Long Pk Overall, Radial Pk, or Circ Pk                                       | Overall Peak (99SIEMENS, OverallPeak)                  | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain) |
|    |      | [Report-S] Std Dev: Long <A2C, A3C, or A4C> Pk                                                              | Overall Peak (99SIEMENS, OverallPeak)                  | Derivation: Standard Deviation (SRT, R-10047)<br>Image View: Apical two chamber (SRT, G-A19B), Apical long axis (SRT, G-0395), or Apical four chamber (SRT, G-A19C)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Strain (99SIEMENS, LongStrain)       |
|    |      | [VVI-S] Peak Overall, <Long, Rad, or Circ>: Avg                                                             | Overall Peak (99SIEMENS, OverallPeak)                  | Derivation: Mean (SRT, R-00317)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                             |
|    |      | [VVI-S] Peak Overall, <Long, Rad, or Circ>: Std Dev                                                         | Overall Peak (99SIEMENS, OverallPeak)                  | Derivation: Standard Deviation (SRT, R-10047)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                               |
|    | X    | [VVI-S] Peak Overall: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Circ, <n> = 1..16 | Overall Peak (99SIEMENS, OverallPeak)                  | Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                                                                |
|    |      | [Report-D] Global (Seg 1-12): <Long or Radial> Pk                                                           | Peak (99SIEMENS, Peak)                                 | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech): Longitudinal Displacement (99SIEMENS, LongDisplacmt) or Radial Displacement (99SIEMENS, RadialDisplacmt)                                                  |

| HR | Mean | Label                                                        | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                                                                                     |
|----|------|--------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [Report-D] Std Dev (Seg 1-12): <Long or Radial> Pk           | Peak (99SIEMENS, Peak)                                 | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt)<br>or Radial Displacement (99SIEMENS, RadialDisplacmt)                                                                                                               |
|    |      | [Report-R] Global: Rotation Apex Pk                          | Peak (99SIEMENS, Peak)                                 | Derivation: Mean of Apical Segments (99SIEMENS, MeanApexSegments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                                                                                  |
|    |      | [Report-R] Global: Rotation Base Pk                          | Peak (99SIEMENS, Peak)                                 | Derivation: Mean of Basal Segments (99SIEMENS, MeanBaseSegments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                                                                                   |
|    |      | [Report-R] Global: Rotation Mid Pk                           | Peak (99SIEMENS, Peak)                                 | Derivation: Mean of Mid-cavity Segments (99SIEMENS, MeanMidSegments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                                                                               |
|    |      | [Report-SR] Global (Seg 1-12): <Long, Radial, or Circ> Pk s  | Peak (99SIEMENS, Peak)                                 | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate),<br>Radial Strain Rate (99SIEMENS, RadialStrainRate), or<br>Circumferential Strain Rate (99SIEMENS, CircumStrainRate)                 |
|    |      | [Report-SR] Std Dev (Seg 1-12): <Long, Radial, or Circ> Pk s | Peak (99SIEMENS, Peak)                                 | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate),<br>Radial Strain Rate (99SIEMENS, RadialStrainRate), or<br>Circumferential Strain Rate (99SIEMENS, CircumStrainRate) |

| HR | Mean | Label                                                                                              | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                                                         |
|----|------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [Report-V] Global (Seg 1-12): Long Pk S, Radial Pk, or Rotation Pk                                 | Peak (99SIEMENS, Peak)                                 | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity)                 |
|    |      | [Report-V] Std Dev (Seg 1-12): Long Pk S, Radial Pk, or Rotation Pk                                | Peak (99SIEMENS, Peak)                                 | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity) |
|    |      | [VVI-D] Peak, <Long or Rad>: Avg                                                                   | Peak (99SIEMENS, Peak)                                 | Derivation: Mean (SRT, R-00317)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt) or Radial Displacement (99SIEMENS, RadialDisplacmt)                                                                                                                                  |
|    |      | [VVI-D] Peak, <Long or Rad>: Std Dev                                                               | Peak (99SIEMENS, Peak)                                 | Derivation: Standard Deviation (SRT, R-10047)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt) or Radial Displacement (99SIEMENS, RadialDisplacmt)                                                                                                                    |
|    |      | [VVI-D] Peak, Rot: Twist                                                                           | Peak (99SIEMENS, Peak)                                 | Derivation: Apical mean minus Basal mean (99SIEMENS, Twist)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                                                            |
|    | X    | [VVI-D] Peak: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Rot, <n> = 1..16 | Peak (99SIEMENS, Peak)                                 | Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt), Radial Displacement (99SIEMENS, RadialDisplacmt), or Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                |
|    |      | [VVI-S] Peak Systolic, <Long, Rad, or Circ>: Avg                                                   | Peak (99SIEMENS, Peak)                                 | Derivation: Mean (SRT, R-00317)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                                  |

| HR | Mean | Label                                                                                                         | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                                                 |
|----|------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [VVI-S] Peak Systolic, <Long, Rad, or Circ>: Std Dev                                                          | Peak (99SIEMENS, Peak)                                 | Derivation: Standard Deviation (SRT, R-10047)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                            |
|    | X    | [VVI-S] Peak Systolic: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Circ, <n> = 1..16  | Peak (99SIEMENS, Peak)                                 | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                                                             |
|    |      | [VVI-SR] Peak Systolic, <Long, Rad, or Circ>: Avg                                                             | Peak (99SIEMENS, Peak)                                 | Derivation: Mean (SRT, R-00317)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate), Radial Strain Rate (99SIEMENS, RadialStrainRate), or Circumferential Strain Rate (99SIEMENS, CircumStrainRate)               |
|    |      | [VVI-SR] Peak Systolic, <Long, Rad, or Circ>: Std Dev                                                         | Peak (99SIEMENS, Peak)                                 | Derivation: Standard Deviation (SRT, R-10047)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate), Radial Strain Rate (99SIEMENS, RadialStrainRate), or Circumferential Strain Rate (99SIEMENS, CircumStrainRate) |
|    | X    | [VVI-SR] Peak Systolic: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Circ, <n> = 1..16 | Peak (99SIEMENS, Peak)                                 | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate), Radial Strain Rate (99SIEMENS, RadialStrainRate), or Circumferential Strain Rate (99SIEMENS, CircumStrainRate)                                                  |
|    |      | [VVI-V] Peak Systolic, <Long, Rad, or Rot>: Avg                                                               | Peak (99SIEMENS, Peak)                                 | Derivation: Mean (SRT, R-00317)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity)                                     |

| HR | Mean | Label                                                                                                       | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                           |
|----|------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [VVI-V] Peak Systolic, <Long, Rad, or Rot>: Std Dev                                                         | Peak (99SIEMENS, Peak)                                 | Derivation: Standard Deviation (SRT, R-10047)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity) |
|    | X    | [VVI-V] Peak Systolic: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Rot, <n> = 1..16 | Peak (99SIEMENS, Peak)                                 | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity)                                                  |
|    |      | [Report-S] Global (Seg 1-12): <Long, Radial, or Circ> TPK                                                   | Time to Overall Peak (99SIEMENS, TimeOverallPeak)      | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                       |
|    |      | [Report-S] Std Dev (Seg 1-12): <Long, Radial, or Circ> TPK                                                  | Time to Overall Peak (99SIEMENS, TimeOverallPeak)      | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                       |
|    |      | [VVI-S] Time to Peak Overall, <Long, Rad, or Circ>: Avg                                                     | Time to Overall Peak (99SIEMENS, TimeOverallPeak)      | Derivation: Mean (SRT, R-00317)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                                                   |
|    |      | [VVI-S] Time to Peak Overall, <Long, Rad, or Circ>: Max Delay                                               | Time to Overall Peak (99SIEMENS, TimeOverallPeak)      | Derivation: Maximum (SRT, G-A437)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                                                 |
|    |      | [VVI-S] Time to Peak Overall, <Long, Rad, or Circ>: Std Dev                                                 | Time to Overall Peak (99SIEMENS, TimeOverallPeak)      | Derivation: Standard Deviation (SRT, R-10047)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                                     |

| HR | Mean | Label                                                                                                               | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                                                               |
|----|------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | X    | [VVI-S] Time to Peak Overall: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Circ, <n> = 1..16 | Time to Overall Peak (99SIEMENS, TimeOverallPeak)      | Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain (99SIEMENS, LongStrain), Radial Strain (99SIEMENS, RadialStrain), or Circumferential Strain (99SIEMENS, CircumStrain)                                                                                                                                          |
|    |      | [Report-D] Global (Seg 1-12): <Long or Radial> TPK                                                                  | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt) or Radial Displacement (99SIEMENS, RadialDisplacmt)                                                                                                            |
|    |      | [Report-D] Std Dev (Seg 1-12): <Long or Radial> TPK                                                                 | Time to Peak by US (LN, 59121-4)                       | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt) or Radial Displacement (99SIEMENS, RadialDisplacmt)                                                                                            |
|    |      | [Report-R] Global: Rotation Apex TPK                                                                                | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean of Apical Segments (99SIEMENS, MeanApexSegments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                                                            |
|    |      | [Report-R] Global: Rotation Base TPK                                                                                | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean of Basal Segments (99SIEMENS, MeanBaseSegments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                                                             |
|    |      | [Report-R] Global: Rotation Mid TPK                                                                                 | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean of Mid-cavity Segments (99SIEMENS, MeanMidSegments)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                                                                         |
|    |      | [Report-SR] Global (Seg 1-12): <Long, Radial, or Circ> TPK s                                                        | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate), Radial Strain Rate (99SIEMENS, RadialStrainRate), or Circumferential Strain Rate (99SIEMENS, CircumStrainRate) |

| HR | Mean | Label                                                                  | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                                                                                     |
|----|------|------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [Report-SR] Std Dev (Seg 1-12): <Long, Radial, or Circ> TPK s          | Time to Peak by US (LN, 59121-4)                       | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate),<br>Radial Strain Rate (99SIEMENS, RadialStrainRate), or<br>Circumferential Strain Rate (99SIEMENS, CircumStrainRate) |
|    |      | [Report-V] Global (Seg 1-12): Long TPK s, Radial TPK, or Rotation TPK  | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean of 12 Segments (99SIEMENS, Mean12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial<br>Velocity (99SIEMENS, RadialVelocity), or Rotation<br>Velocity (99SIEMENS, RotatnVelocity)                                       |
|    |      | [Report-V] Std Dev (Seg 1-12): Long TPK s, Radial TPK, or Rotation TPK | Time to Peak by US (LN, 59121-4)                       | Derivation: Standard Deviation of 12 Segments (99SIEMENS, StdDev12Segments)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial<br>Velocity (99SIEMENS, RadialVelocity), or Rotation<br>Velocity (99SIEMENS, RotatnVelocity)                       |
|    |      | [VVI-D] Time to Peak, <Long, Rad, or Rot>: Avg                         | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean (SRT, R-00317)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt),<br>Radial Displacement (99SIEMENS, RadialDisplacmt), or<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                   |
|    |      | [VVI-D] Time to Peak, <Long, Rad, or Rot>: Max Delay                   | Time to Peak by US (LN, 59121-4)                       | Derivation: Maximum (SRT, G-A437)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt),<br>Radial Displacement (99SIEMENS, RadialDisplacmt), or<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                 |
|    |      | [VVI-D] Time to Peak, <Long, Rad, or Rot>: Std Dev                     | Time to Peak by US (LN, 59121-4)                       | Derivation: Standard Deviation (SRT, R-10047)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt),<br>Radial Displacement (99SIEMENS, RadialDisplacmt), or<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                     |

| HR | Mean | Label                                                                                                                 | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                                                       |
|----|------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | X    | [VVI-D] Time to Peak: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Rot, <n> = 1..16            | Time to Peak by US (LN, 59121-4)                       | Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Displacement (99SIEMENS, LongDisplacmt),<br>Radial Displacement (99SIEMENS, RadialDisplacmt), or<br>Rotation Displacement (99SIEMENS, RotatnDisplacmt)                                                                                                        |
|    |      | [VVI-SR] Time to Peak Systolic, <Long, Rad, or Circ>: Avg                                                             | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean (SRT, R-00317)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate),<br>Radial Strain Rate (99SIEMENS, RadialStrainRate), or<br>Circumferential Strain Rate (99SIEMENS, CircumStrainRate)               |
|    |      | [VVI-SR] Time to Peak Systolic, <Long, Rad, or Circ>: Max Delay                                                       | Time to Peak by US (LN, 59121-4)                       | Derivation: Maximum (SRT, G-A437)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate),<br>Radial Strain Rate (99SIEMENS, RadialStrainRate), or<br>Circumferential Strain Rate (99SIEMENS, CircumStrainRate)             |
|    |      | [VVI-SR] Time to Peak Systolic, <Long, Rad, or Circ>: Std Dev                                                         | Time to Peak by US (LN, 59121-4)                       | Derivation: Standard Deviation (SRT, R-10047)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate),<br>Radial Strain Rate (99SIEMENS, RadialStrainRate), or<br>Circumferential Strain Rate (99SIEMENS, CircumStrainRate) |
|    | X    | [VVI-SR] Time to Peak Systolic: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Circ, <n> = 1..16 | Time to Peak by US (LN, 59121-4)                       | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Strain Rate (99SIEMENS, LongStrainRate),<br>Radial Strain Rate (99SIEMENS, RadialStrainRate), or<br>Circumferential Strain Rate (99SIEMENS, CircumStrainRate)                                                  |
|    |      | [VVI-V] Time to Peak Systolic, <Long, Rad, or Rot>: Avg                                                               | Time to Peak by US (LN, 59121-4)                       | Derivation: Mean (SRT, R-00317)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity)                                           |

| HR | Mean | Label                                                                                                               | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                                                                                                                           |
|----|------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |      | [VVI-V] Time to Peak Systolic, <Long, Rad, or Rot>: Max Delay                                                       | Time to Peak by US (LN, 59121-4)                       | Derivation: Maximum (SRT, G-A437)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity)             |
|    |      | [VVI-V] Time to Peak Systolic, <Long, Rad, or Rot>: Std Dev                                                         | Time to Peak by US (LN, 59121-4)                       | Derivation: Standard Deviation (SRT, R-10047)<br>Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity) |
|    | X    | [VVI-V] Time to Peak Systolic: Segment <n><br>For Long, <n> = 1..17<br>For Rad, <n> = 1..16<br>For Rot, <n> = 1..16 | Time to Peak by US (LN, 59121-4)                       | Cardiac Cycle Point: Systole (SRT, F-32020)<br>Myocardial Mechanics (99SIEMENS, MyocardialMech):<br>Longitudinal Velocity (99SIEMENS, LongVelocity), Radial Velocity (99SIEMENS, RadialVelocity), or Rotation Velocity (99SIEMENS, RotatnVelocity)                                                  |

#### 9.1.17.4 CAP: 3D PISA

The Clinical Application Package (CAP) SR structure for 3D PISA results is defined below.

| HR             | Mean | Label                                    | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                                                                                                                             |
|----------------|------|------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3D PISA</b> |      |                                          | Container: Findings (DCM, 121070)                      | Clinical Application Package: 3D PISA (99SIEMENS, 3DPISA)                                                                                                                                             |
|                |      |                                          | Container: Measurement Group (DCM, 125007)             | Finding Site: Aortic Valve (SRT, T-354000) - AR<br>Mitral Valve (SRT, T-353000) - MR<br>Pulmonic Valve (SRT, T-352000) - PR<br>or Tricuspid Valve (SRT, T-35100) - TR<br><valve> is AR, MR, PR, or TR |
|                | X    | [3DP] Average: <valve> Aliasing Velocity | Alias velocity (LN, 59130-5)                           | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                                                                       |
|                |      | [3DP] Peak: <valve> Aliasing Velocity    | Alias velocity (LN, 59130-5)                           | Derivation: Maximum (SRT, G-A437)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)                                                                                                                  |

| HR | Mean | Label                                   | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                            |
|----|------|-----------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------|
|    | X    | [3DP] Average: <valve> EROA             | Cardiovascular Orifice Area (SRT, G-038E)              | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                      |
|    |      | [3DP] Peak: <valve> EROA                | Cardiovascular Orifice Area (SRT, G-038E)              | Derivation: Maximum (SRT, G-A437)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|    | X    | [3DP] Average: <valve> 3D PISA          | Flow Area (LN, 20226-7)                                | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                      |
|    |      | [3DP] Peak: <valve> 3D PISA             | Flow Area (LN, 20226-7)                                | Derivation: Maximum (SRT, G-A437)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|    | X    | [3DP] Average: <valve> Inst Flow Rate   | Peak Instantaneous Flow Rate (LN, 34141-2)             | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                      |
|    |      | [3DP] Peak: <valve> Inst Flow Rate      | Peak Instantaneous Flow Rate (LN, 34141-2)             | Derivation: Maximum (SRT, G-A437)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|    | X    | [3DP] Average: <valve> Volume (3D PISA) | Volume using PISA (99SIEMENS, VolumePISA)              | Flow Direction: Regurgitant Flow (SRT, R-42E61)                                      |
|    |      | [3DP] Peak: <valve> Volume (3D PISA)    | Volume using PISA (99SIEMENS, VolumePISA)              | Derivation: Maximum (SRT, G-A437)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |

### 9.1.17.5 CAP: Valves Analysis

The Clinical Application Package (CAP) SR structure for Valves Analysis results is defined below.

| HR                     | Mean | Label                                                                        | Code Meaning<br>(Coding Scheme Designator, Code Value)      | Modifiers                                                                 |
|------------------------|------|------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Valves Analysis</b> |      |                                                                              | Container: Findings (DCM, 121070)                           | Clinical Application Package: Valves Analysis (99SIEMENS, ValvesAnalysis) |
|                        |      |                                                                              | Container: Measurement Group (DCM, 125007)                  |                                                                           |
|                        | X    | [Valves-AV] AV-MV: Angle<br>[Valves-MV] AV-MV: Angle                         | AV-MV Angle (99SIEMENS, AVMVAngle)                          |                                                                           |
|                        | X    | [Valves-AV] AV-MV: Centroid Distance<br>[Valves-MV] AV-MV: Centroid Distance | AV-MV Centroid Distance (99SIEMENS, AVMVCentroidDist)       |                                                                           |
|                        |      |                                                                              | Container: Measurement Group (DCM, 125007)                  | Finding Site: Aortic Valve (SRT, T-35400)                                 |
|                        | X    | [Valves-AV] Leaflet: Coaptation Height                                       | Aortic Valve Coaptation Height (99SIEMENS, AVCoaptationHt)  | Cardiac Cycle Point: End Diastole (SRT, F-32011)                          |
|                        | X    | [Valves-AV] Ostia: Interostia Angle                                          | Aortic Valve Interostia Angle (99SIEMENS, AVIntrostiaAngle) |                                                                           |

| HR | Mean | Label                                     | Code Meaning<br>(Coding Scheme Designator, Code Value)                                  | Modifiers                                                                                                                  |
|----|------|-------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|    | X    | [Valves-AV] Leaflet: LR Intercomm Angle   | Aortic Valve Left to Right Intercommissural Angle (99SIEMENS, LRInterCommAngle)         |                                                                                                                            |
|    | X    | [Valves-AV] Leaflet: NL Intercomm Angle   | Aortic Valve Non-coronary to Left Intercommissural Angle (99SIEMENS, NLInterCommAngle)  |                                                                                                                            |
|    | X    | [Valves-AV] Leaflet: RN Intercomm Angle   | Aortic Valve Right to Non-coronary Intercommissural Angle (99SIEMENS, RNInterCommAngle) |                                                                                                                            |
|    | X    | [Valves-AV] Annulus: Area                 | Area (SRT, G-A166)                                                                      | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                                             |
|    | X    | [Valves-AV] Root: Avg Height              | Average Height (99SIEMENS, AvgHeight)                                                   | Finding Site: Aortic Root (SRT, F-04403)                                                                                   |
|    | X    | [Valves-AV] Leaflet: Valve Orifice Area   | Cardiovascular Orifice Area (SRT, G-038E)                                               |                                                                                                                            |
|    | X    | [Valves-AV] Annulus: Diam (Area Derived)  | Diameter (SRT, M-02550)                                                                 | Measurement Method: Derived from Area (99SIEMENS, AreaDerived)<br>Finding Site: Aortic Valve Ring (SRT, T-35410)           |
|    | X    | [Valves-AV] Annulus: Diam (Perim Derived) | Diameter (SRT, M-02550)                                                                 | Measurement Method: Derived from Perimeter (99SIEMENS, PerimeterDerived)<br>Finding Site: Aortic Valve Ring (SRT, T-35410) |
|    | X    | [Valves-AV] Root: STJ Max Diam            | Maximum Diameter (99SIEMENS, MaxDiam)                                                   | Finding Site: Aortic Sinotubular Junction (SRT, T-42102)                                                                   |
|    | X    | [Valves-AV] Annulus: Max Diam             | Maximum Diameter (99SIEMENS, MaxDiam)                                                   | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                                             |
|    | X    | [Valves-AV] Root: SoV Max Diam            | Maximum Diameter (99SIEMENS, MaxDiam)                                                   | Finding Site: Structure Sinus of Valsalva (SRT, T-42200)                                                                   |
|    | X    | [Valves-AV] Root: Max Height              | Maximum Height (99SIEMENS, MaxHeight)                                                   | Finding Site: Aortic Root (SRT, F-04403)                                                                                   |
|    | X    | [Valves-AV] Root: STJ Min Diam            | Minimum Diameter (99SIEMENS, MinDiam)                                                   | Finding Site: Aortic Sinotubular Junction (SRT, T-42102)                                                                   |
|    | X    | [Valves-AV] Annulus: Min Diam             | Minimum Diameter (99SIEMENS, MinDiam)                                                   | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                                             |
|    | X    | [Valves-AV] Root: SoV Min Diam            | Minimum Diameter (99SIEMENS, MinDiam)                                                   | Finding Site: Structure Sinus of Valsalva (SRT, T-42200)                                                                   |
|    | X    | [Valves-AV] Root: Min Height              | Minimum Height (99SIEMENS, MinHeight)                                                   | Finding Site: Aortic Root (SRT, F-04403)                                                                                   |
|    | X    | [Valves-AV] Root: STJ Perimeter           | Perimeter (SRT, G-A197)                                                                 | Finding Site: Aortic Sinotubular Junction (SRT, T-42102)                                                                   |
|    | X    | [Valves-AV] Annulus: Perimeter            | Perimeter (SRT, G-A197)                                                                 | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                                             |
|    | X    | [Valves-AV] Root: SoV Perimeter           | Perimeter (SRT, G-A197)                                                                 | Finding Site: Structure Sinus of Valsalva (SRT, T-42200)                                                                   |
|    | X    | [Valves-AV] Root: STJ Area                | Vessel lumen cross-sectional area (SRT, G-0366)                                         | Finding Site: Aortic Sinotubular Junction (SRT, T-42102)                                                                   |
|    | X    | [Valves-AV] Root: SoV Area                | Vessel lumen cross-sectional area (SRT, G-0366)                                         | Finding Site: Structure Sinus of Valsalva (SRT, T-42200)                                                                   |
|    | X    | [Valves-AV] Root: STJ Diam (Area Derived) | Vessel lumen diameter (SRT, G-0364)                                                     | Measurement Method: Derived from Area (99SIEMENS, AreaDerived)<br>Finding Site: Aortic Sinotubular Junction (SRT, T-42102) |

| HR | Mean | Label                                      | Code Meaning<br>(Coding Scheme Designator, Code Value)                  | Modifiers                                                                                                                            |
|----|------|--------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|    | X    | [Valves-AV] Root: SoV Diam (Area Derived)  | Vessel lumen diameter (SRT, G-0364)                                     | Measurement Method: Derived from Area (99SIEMENS, AreaDerived)<br>Finding Site: Structure Sinus of Valsalva (SRT, T-42200)           |
|    | X    | [Valves-AV] Root: STJ Diam (Perim Derived) | Vessel lumen diameter (SRT, G-0364)                                     | Measurement Method: Derived from Perimeter (99SIEMENS, PerimeterDerived)<br>Finding Site: Aortic Sinotubular Junction (SRT, T-42102) |
|    | X    | [Valves-AV] Root: SoV Diam (Perim Derived) | Vessel lumen diameter (SRT, G-0364)                                     | Measurement Method: Derived from Perimeter (99SIEMENS, PerimeterDerived)<br>Finding Site: Structure Sinus of Valsalva (SRT, T-42200) |
|    |      |                                            | Container: Measurement Group (DCM, 125007)                              | Finding Site: Aortic Valve (SRT, T-35400)<br>Topographical modifier: Left (SRT, G-A101)                                              |
|    | X    | [Valves-AV] Leaflet: L Intercomm Distance  | Aortic Valve Intercommissural Distance (99SIEMENS, AVInterCommDist)     |                                                                                                                                      |
|    | X    | [Valves-AV] Leaflet: L Edge Length         | Aortic Valve Leaflet Edge Length (99SIEMENS, AVLeafletEdgeLen)          |                                                                                                                                      |
|    | X    | [Valves-AV] Leaflet: L Edge Length/Height  | Aortic Valve Leaflet Edge to Height Ratio (99SIEMENS, AVLeafEdgHtRatio) |                                                                                                                                      |
|    | X    | [Valves-AV] Ostia: L Ostium Height         | Coronary Ostium Height (99SIEMENS, CorOstiumHeight)                     |                                                                                                                                      |
|    | X    | [Valves-AV] Leaflet: L Height              | Height (DCM, 121207)                                                    |                                                                                                                                      |
|    | X    | [Valves-AV] Annulus: L Hinge Diam          | Hinge Diameter (99SIEMENS, HingeDiam)                                   | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                                                       |
|    |      |                                            | Container: Measurement Group (DCM, 125007)                              | Finding Site: Aortic Valve (SRT, T-35400)<br>Topographical modifier: Non-coronary (99SIEMENS, Noncoronary)                           |
|    | X    | [Valves-AV] Leaflet: N Intercomm Distance  | Aortic Valve Intercommissural Distance (99SIEMENS, AVInterCommDist)     |                                                                                                                                      |
|    | X    | [Valves-AV] Leaflet: N Edge Length         | Aortic Valve Leaflet Edge Length (99SIEMENS, AVLeafletEdgeLen)          |                                                                                                                                      |
|    | X    | [Valves-AV] Leaflet: N Edge Length/Height  | Aortic Valve Leaflet Edge to Height Ratio (99SIEMENS, AVLeafEdgHtRatio) |                                                                                                                                      |
|    | X    | [Valves-AV] Leaflet: N Height              | Height (DCM, 121207)                                                    |                                                                                                                                      |
|    | X    | [Valves-AV] Annulus: N Hinge Diam          | Hinge Diameter (99SIEMENS, HingeDiam)                                   | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                                                       |

| HR | Mean | Label                                              | Code Meaning<br>(Coding Scheme Designator, Code Value)                     | Modifiers                                                                                                |
|----|------|----------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|    |      |                                                    | Container: Measurement Group (DCM, 125007)                                 | Finding Site: Aortic Valve (SRT, T-35400)<br>Topographical modifier: Right (SRT, G-A100)                 |
|    | X    | [Valves-AV] Leaflet: R Intercomm Distance          | Aortic Valve Intercommissural Distance (99SIEMENS, AVInterCommDist)        |                                                                                                          |
|    | X    | [Valves-AV] Leaflet: R Edge Length                 | Aortic Valve Leaflet Edge Length (99SIEMENS, AVLeafletEdgeLen)             |                                                                                                          |
|    | X    | [Valves-AV] Leaflet: R Edge Length/Height          | Aortic Valve Leaflet Edge to Height Ratio (99SIEMENS, AVLeafEdgHtRatio)    |                                                                                                          |
|    | X    | [Valves-AV] Ostia: R Ostium Height                 | Coronary Ostium Height (99SIEMENS, CorOstiumHeight)                        |                                                                                                          |
|    | X    | [Valves-AV] Leaflet: R Height                      | Height (DCM, 121207)                                                       |                                                                                                          |
|    | X    | [Valves-AV] Annulus: R Hinge Diam                  | Hinge Diameter (99SIEMENS, HingeDiam)                                      | Finding Site: Aortic Valve Ring (SRT, T-35410)                                                           |
|    |      |                                                    | Container: Measurement Group (DCM, 125007)                                 | Finding Site: Mitral Valve (SRT, T-35300)                                                                |
|    | X    | [Valves-MV] Annulus: Area                          | Area (SRT, G-A166)                                                         | Finding Site: Mitral Annulus (SRT, T-35313)                                                              |
|    | X    | [Valves-MV] Leaflet: Valve Orifice Area            | Cardiovascular Orifice Area (SRT, G-038E)                                  |                                                                                                          |
|    | X    | [Valves-MV] Annulus: AP Diameter                   | Diameter (SRT, M-02550)                                                    | Finding Site: Mitral Annulus (SRT, T-35313)<br>Measurement Orientation: Anterior-Posterior (DCM, 122675) |
|    | X    | [Valves-MV] Annulus: Height                        | Height (DCM, 121207)                                                       | Finding Site: Mitral Annulus (SRT, T-35313)                                                              |
|    | X    | [Valves-MV] Leaflet: A1-P1 Coaptation Segmental Ht | Mitral Valve A1-P1 Coaptation Segmental Height (99SIEMENS, A1P1CoaptSegHt) |                                                                                                          |
|    | X    | [Valves-MV] Leaflet: A1-P1 Flail Segmental Gap     | Mitral Valve A1-P1 Flail Segmental Gap (99SIEMENS, A1P1FlailSegGap)        |                                                                                                          |
|    | X    | [Valves-MV] Leaflet: A1-P1 Tenting Area            | Mitral Valve A1-P1 Tenting Area (99SIEMENS, MVA1P1TentArea)                |                                                                                                          |
|    | X    | [Valves-MV] Leaflet: A1-P1 Tenting Segmental Ht    | Mitral Valve A1-P1 Tenting Segmental Height (99SIEMENS, A1P1TentingSegHt)  |                                                                                                          |
|    | X    | [Valves-MV] Leaflet: A2-P2 Coaptation Segmental Ht | Mitral Valve A2-P2 Coaptation Segmental Height (99SIEMENS, A2P2CoaptSegHt) |                                                                                                          |
|    | X    | [Valves-MV] Leaflet: A2-P2 Flail Segmental Gap     | Mitral Valve A2-P2 Flail Segmental Gap (99SIEMENS, A2P2FlailSegGap)        |                                                                                                          |
|    | X    | [Valves-MV] Leaflet: A2-P2 Tenting Area            | Mitral Valve A2-P2 Tenting Area (99SIEMENS, MVA2P2TentArea)                |                                                                                                          |
|    | X    | [Valves-MV] Leaflet: A2-P2 Tenting Segmental Ht    | Mitral Valve A2-P2 Tenting Segmental Height (99SIEMENS, A2P2TentingSegHt)  |                                                                                                          |

| HR | Mean | Label                                              | Code Meaning<br>(Coding Scheme Designator, Code Value)                                     | Modifiers                                   |
|----|------|----------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------|
|    | X    | [Valves-MV] Leaflet: A3-P3 Coaptation Segmental Ht | Mitral Valve A3-P3 Coaptation Segmental Height (99SIEMENS, A3P3CoaptSegHt)                 |                                             |
|    | X    | [Valves-MV] Leaflet: A3-P3 Flail Segmental Gap     | Mitral Valve A3-P3 Flail Segmental Gap (99SIEMENS, A3P3FlailSegGap)                        |                                             |
|    | X    | [Valves-MV] Leaflet: A3-P3 Tenting Area            | Mitral Valve A3-P3 Tenting Area (99SIEMENS, MVA3P3TentArea)                                |                                             |
|    | X    | [Valves-MV] Leaflet: A3-P3 Tenting Segmental Ht    | Mitral Valve A3-P3 Tenting Segmental Height (99SIEMENS, A3P3TentingSegHt)                  |                                             |
|    | X    | [Valves-MV] Annulus: AP Diam/AL-PM Diam            | Mitral Valve Annulus AP Diameter/AL-PM Diameter Ratio (99SIEMENS, AAPALPMDiamRatio)        |                                             |
|    | X    | [Valves-MV] Annulus: Height/AL-PM Comm Diam        | Mitral Valve Annulus Height/AL-PM Commissural Diameter Ratio (99SIEMENS, AHtALPMDiamRatio) |                                             |
|    | X    | [Valves-MV] Annulus: AL-PM Diameter                | Mitral Valve Anterolateral-Posteromedial Diameter (99SIEMENS, ALPMDiam)                    | Finding Site: Mitral Annulus (SRT, T-35313) |
|    | X    | [Valves-MV] Leaflet: Avg Flail Gap                 | Mitral Valve Average Flail Gap (99SIEMENS, MVAvgFlailGap)                                  |                                             |
|    | X    | [Valves-MV] Leaflet: Avg Tenting Area              | Mitral Valve Average Tenting Area (99SIEMENS, MVAvgTentArea)                               |                                             |
|    | X    | [Valves-MV] Leaflet: Avg Tenting Ht                | Mitral Valve Average Tenting Height (99SIEMENS, MVAvgTentingHt)                            |                                             |
|    | X    | [Valves-MV] Leaflet: Coaptation Avg Ht             | Mitral Valve Coaptation Average Height (99SIEMENS, MVCoaptAvgHt)                           |                                             |
|    | X    | [Valves-MV] Leaflet: Intercommissural Distance     | Mitral Valve Intercommissural Distance (99SIEMENS, InterCommDist)                          |                                             |
|    | X    | [Valves-MV] Annulus: Intertrigonal Distance        | Mitral Valve Intertrigonal Distance (99SIEMENS, IntertrigDist)                             |                                             |
|    | X    | [Valves-MV] Leaflet: Max Flail Gap                 | Mitral Valve Maximum Flail Gap (99SIEMENS, MVMaxFlailGap)                                  |                                             |
|    | X    | [Valves-MV] Leaflet: Max Tenting Area              | Mitral Valve Maximum Tenting Area (99SIEMENS, MVMaxTentArea)                               |                                             |
|    | X    | [Valves-MV] Leaflet: Max Tenting Ht                | Mitral Valve Maximum Tenting Height (99SIEMENS, MVMaxTentingHt)                            |                                             |
|    | X    | [Valves-MV] Leaflet: Min Tenting Area              | Mitral Valve Minimum Tenting Area (99SIEMENS, MVMinTentArea)                               |                                             |
|    | X    | [Valves-MV] Annulus: Nonplanarity Angle            | Mitral Valve Nonplanarity Angle (99SIEMENS, NonplanrtyAngle)                               | Finding Site: Mitral Annulus (SRT, T-35313) |

| HR | Mean | Label                                    | Code Meaning<br>(Coding Scheme Designator, Code Value)           | Modifiers                                                                                    |
|----|------|------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|    | X    | [Valves-MV] Leaflet: Prolapse Area       | Mitral Valve Prolapse Area (99SIEMENS, MVProlapseArea)           |                                                                                              |
|    | X    | [Valves-MV] Leaflet: Prolapse Volume     | Mitral Valve Prolapse Volume (99SIEMENS, MVProlapseVol)          |                                                                                              |
|    | X    | [Valves-MV] Leaflet: Total Area          | Mitral Valve Total Leaflet Area (99SIEMENS, MVTotaleafArea)      |                                                                                              |
|    | X    | [Valves-MV] Annulus: Total Perimeter     | Perimeter (SRT, G-A197)                                          | Finding Site: Mitral Annulus (SRT, T-35313)                                                  |
|    |      |                                          | Container: Measurement Group (DCM, 125007)                       | Finding Site: Mitral Valve (SRT, T-35300)<br>Topographical modifier: Anterior (SRT, G-A105)  |
|    | X    | [Valves-MV] Leaflet: A1 Segment Area     | Area (SRT, G-A166)                                               | Finding Site: A1 Leaflet Segment (99SIEMENS, A1LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: A2 Segment Area     | Area (SRT, G-A166)                                               | Finding Site: A2 Leaflet Segment (99SIEMENS, A2LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: A3 Segment Area     | Area (SRT, G-A166)                                               | Finding Site: A3 Leaflet Segment (99SIEMENS, A3LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: Anterior Area       | Area (SRT, G-A166)                                               |                                                                                              |
|    | X    | [Valves-MV] Leaflet: A1 Segment Length   | Length (SRT, G-A22A)                                             | Finding Site: A1 Leaflet Segment (99SIEMENS, A1LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: A2 Segment Length   | Length (SRT, G-A22A)                                             | Finding Site: A2 Leaflet Segment (99SIEMENS, A2LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: A3 Segment Length   | Length (SRT, G-A22A)                                             | Finding Site: A3 Leaflet Segment (99SIEMENS, A3LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: Anterior Avg Length | Mitral Valve Leaflet Average Length (99SIEMENS, MVLeafletAvgLen) |                                                                                              |
|    | X    | [Valves-MV] Leaflet: Anterior Max Length | Mitral Valve Leaflet Maximum Length (99SIEMENS, MVLeafletMaxLen) |                                                                                              |
|    | X    | [Valves-MV] Annulus: Anterior Perimeter  | Perimeter (SRT, G-A197)                                          | Finding Site: Mitral Annulus (SRT, T-35313)                                                  |
|    |      |                                          | Container: Measurement Group (DCM, 125007)                       | Finding Site: Mitral Valve (SRT, T-35300)<br>Topographical modifier: Posterior (SRT, G-A106) |
|    | X    | [Valves-MV] Leaflet: P1 Segment Area     | Area (SRT, G-A166)                                               | Finding Site: P1 Leaflet Segment (99SIEMENS, P1LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: P2 Segment Area     | Area (SRT, G-A166)                                               | Finding Site: P2 Leaflet Segment (99SIEMENS, P2LeafletSegment)                               |
|    | X    | [Valves-MV] Leaflet: P3 Segment Area     | Area (SRT, G-A166)                                               | Finding Site: P3 Leaflet Segment (99SIEMENS, P3LeafletSegment)                               |

| HR | Mean | Label                                     | Code Meaning<br>(Coding Scheme Designator, Code Value)           | Modifiers                                                      |
|----|------|-------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------|
|    | X    | [Valves-MV] Leaflet: Posterior Area       | Area (SRT, G-A166)                                               |                                                                |
|    | X    | [Valves-MV] Leaflet: P1 Segment Length    | Length (SRT, G-A22A)                                             | Finding Site: P1 Leaflet Segment (99SIEMENS, P1LeafletSegment) |
|    | X    | [Valves-MV] Leaflet: P2 Segment Length    | Length (SRT, G-A22A)                                             | Finding Site: P2 Leaflet Segment (99SIEMENS, P2LeafletSegment) |
|    | X    | [Valves-MV] Leaflet: P3 Segment Length    | Length (SRT, G-A22A)                                             | Finding Site: P3 Leaflet Segment (99SIEMENS, P3LeafletSegment) |
|    | X    | [Valves-MV] Leaflet: Posterior Avg Length | Mitral Valve Leaflet Average Length (99SIEMENS, MVLeafletAvgLen) |                                                                |
|    | X    | [Valves-MV] Leaflet: Posterior Max Length | Mitral Valve Leaflet Maximum Length (99SIEMENS, MVLeafletMaxLen) |                                                                |
|    | X    | [Valves-MV] Annulus: Posterior Perimeter  | Perimeter (SRT, G-A197)                                          | Finding Site: Mitral Annulus (SRT, T-35313)                    |

### 9.1.17.6 CAP: Flow Analysis

The Clinical Application Package (CAP) SR structure for Flow Analysis results is defined below.

| HR            | Mean | Label                                   | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                             |
|---------------|------|-----------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------|
| Flow Analysis |      |                                         | Container: Findings (DCM, 121070)                      | Clinical Application Package: Flow Analysis (99SIEMENS, FlowAnalysis) |
|               | X    | [Flow] Left Heart, TEE: CO              | Cardiac Output (SRT, F-32100)                          |                                                                       |
|               | X    | [Flow] Right Heart, TEE: CO             | Cardiac Output (SRT, F-32100)                          |                                                                       |
|               | X    | [Flow] Left Heart, TTE: CO              | Cardiac Output (SRT, F-32100)                          |                                                                       |
|               | X    | [Flow] Right Heart, TTE: CO             | Cardiac Output (SRT, F-32100)                          |                                                                       |
|               | X    | [Flow] Left Heart, TEE: HR              | Heart Rate (LN, 8867-4)                                |                                                                       |
|               | X    | [Flow] Right Heart, TEE: HR             | Heart Rate (LN, 8867-4)                                |                                                                       |
|               | X    | [Flow] Left Heart, TTE: HR              | Heart Rate (LN, 8867-4)                                |                                                                       |
|               | X    | [Flow] Right Heart, TTE: HR             | Heart Rate (LN, 8867-4)                                |                                                                       |
|               |      | [Flow] Left Heart, TEE: Regurg Fraction | Regurgitant Fraction (SRT, G-0390)                     | Finding Site: Mitral Valve (SRT, T-35300)                             |
|               |      | [Flow] Left Heart, TTE: Regurg Fraction | Regurgitant Fraction (SRT, G-0390)                     | Finding Site: Mitral Valve (SRT, T-35300)                             |

| HR | Mean | Label                                    | Code Meaning<br>(Coding Scheme Designator, Code Value) | Modifiers                                                                                       |
|----|------|------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|    |      | [Flow] Right Heart, TEE: Regurg Fraction | Regurgitant Fraction (SRT, G-0390)                     | Finding Site: Tricuspid Valve (SRT, T-35100)                                                    |
|    |      | [Flow] Right Heart, TTE: Regurg Fraction | Regurgitant Fraction (SRT, G-0390)                     | Finding Site: Tricuspid Valve (SRT, T-35100)                                                    |
|    | X    | [Flow] Left Heart, TEE: Out SV           | Stroke Volume (SRT, F-32120)                           | Finding Site: Aortic Valve (SRT, T-35400)                                                       |
|    | X    | [Flow] Left Heart, TTE: Out SV           | Stroke Volume (SRT, F-32120)                           | Finding Site: Aortic Valve (SRT, T-35400)                                                       |
|    | X    | [Flow] Left Heart, TEE: In SV            | Stroke Volume (SRT, F-32120)                           | Finding Site: Mitral Valve (SRT, T-35300)                                                       |
|    | X    | [Flow] Left Heart, TTE: In SV            | Stroke Volume (SRT, F-32120)                           | Finding Site: Mitral Valve (SRT, T-35300)                                                       |
|    | X    | [Flow] Right Heart, TEE: Out SV          | Stroke Volume (SRT, F-32120)                           | Finding Site: Pulmonic Valve (SRT, T-35200)                                                     |
|    | X    | [Flow] Right Heart, TTE: Out SV          | Stroke Volume (SRT, F-32120)                           | Finding Site: Pulmonic Valve (SRT, T-35200)                                                     |
|    | X    | [Flow] Right Heart, TEE: In SV           | Stroke Volume (SRT, F-32120)                           | Finding Site: Tricuspid Valve (SRT, T-35100)                                                    |
|    | X    | [Flow] Right Heart, TTE: In SV           | Stroke Volume (SRT, F-32120)                           | Finding Site: Tricuspid Valve (SRT, T-35100)                                                    |
|    |      | [Flow] Left Heart, TEE: Regurg Volume    | Volume (SRT, G-D705)                                   | Finding Site: Mitral Valve (SRT, T-35300)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)    |
|    |      | [Flow] Left Heart, TTE: Regurg Volume    | Volume (SRT, G-D705)                                   | Finding Site: Mitral Valve (SRT, T-35300)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61)    |
|    |      | [Flow] Right Heart, TEE: Regurg Volume   | Volume (SRT, G-D705)                                   | Finding Site: Tricuspid Valve (SRT, T-35100)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |
|    |      | [Flow] Right Heart, TTE: Regurg Volume   | Volume (SRT, G-D705)                                   | Finding Site: Tricuspid Valve (SRT, T-35100)<br>Flow Direction: Regurgitant Flow (SRT, R-42E61) |

## 9.2 Appendix B: Vascular Structured Report

This appendix lists the DICOM Structured Report (SR) mappings used in the Vascular Structured Reports of the ACUSON SC2000 system SR files.

The mappings follow the DICOM SR Template TID 5100: Vascular Ultrasound Report, as described in PS 3.16-2011 of the DICOM Standard, and are organized in a manner similar to TID 5100. The **Label** column identifies the on-screen worksheet label associated with a measurement using the format “Vessel [Worksheet]” or “Measurement Label [Worksheet]”. All private code values use the Coding Scheme Designator “99SIEMENS”.

The **Mean** column indicates if a measurement has an average value associated it. A mean value is defined in the SR by a measurement having the following modifier:

| Rel with Parent | VT   | Concept Name             | VM | Concept Value       |
|-----------------|------|--------------------------|----|---------------------|
| HAS CONCEPT MOD | CODE | Derivation (DCM, 121401) | 1  | Mean (SRT, R-00317) |

Vessels listed in the following sections with the Topographical Modifiers Distal, Mid-longitudinal, and Proximal only have measurements associated with those topographical modifiers.

Worksheets are identified in the Label column by the following notation. Measurements are associated with a worksheet and a group.

| Notation    | Worksheet                    | Notation  | Worksheet    | Notation | Group       |
|-------------|------------------------------|-----------|--------------|----------|-------------|
| [Abd-Mes]   | Abdomen, Ao-Mesenteric       | [Ao-I]    | Ao-Iliac     | [2D]     | 2D          |
| [Abd-Graft] | Abdomen, Graft               | [Ao-R]    | Ao-Renal     | [D]      | Doppler     |
| [Abd-Hep]   | Abdomen, Hepatoportal System | [Carotid] | Carotid      | [VF]     | Volume Flow |
| [Abd-LTr]   | Abdomen, Liver Transplant    | [PV-L]    | PV Art-Lower |          |             |
| [Abd-RTr]   | Abdomen, Renal Transplant    | [PV-U]    | PV Art-Upper |          |             |
| [Abd-TIPS]  | Abdomen, TIPS                |           |              |          |             |

Each vessel has a list of available measurements enclosed within square brackets [ ]. Measurements in the following sections are identified by an abbreviation shown in the table below.

### Measurements List

| Abbrev | Mean | Label                  | Code Meaning (Coding Scheme Designator, Code Value) | Modifiers |
|--------|------|------------------------|-----------------------------------------------------|-----------|
| Diam   | X    | [2D]: Diam             | Diameter (SRT, M-02550)                             |           |
| InA    | X    | [2D]: Inner Area       | Vessel lumen cross-sectional area (SRT, G-0366)     |           |
| InD    | X    | [2D]: Inner Diam       | Vessel lumen diameter (SRT, G-0364)                 |           |
| OutA   | X    | [2D]: Outer Area       | Outer Area (99SIEMENS, OuterArea)                   |           |
| OutD   | X    | [2D], [VF]: Outer Diam | Vessel outside diameter (SRT, G-0365)               |           |

| Abbrev | Mean | Label                 | Code Meaning (Coding Scheme Designator, Code Value) | Modifiers                                                           |
|--------|------|-----------------------|-----------------------------------------------------|---------------------------------------------------------------------|
| TrD    | X    | [2D]: Transverse Diam | Vessel outside diameter (SRT, G-0365)               | Measurement Orientation (DCM, 125105): Transverse (SRT, G-A117)     |
| StenA  |      | [2D]: % Stenosis Area | Lumen Area Stenosis (SRT, R-101BA)                  |                                                                     |
| StenD  |      | [2D]: % Stenosis Diam | Lumen Diameter Stenosis (SRT, R-101BB)              |                                                                     |
| AT     |      | [D]: AT               | Acceleration Time (LN, 20168-1)                     |                                                                     |
| ED     |      | [D]: ED (angle°)      | End Diastolic Velocity (LN, 11653-3)                | Doppler Angle (DCM, 125106)                                         |
| PI     |      | [D]: PI               | Pulsatility Index (LN, 12008-9)                     |                                                                     |
| PS     |      | [D]: PS (angle°)      | Peak Systolic Velocity (LN, 11726-7)                | Doppler Angle (DCM, 125106)                                         |
| RI     |      | [D]: RI               | Resistivity Index (LN, 12023-8)                     |                                                                     |
| S/D    |      | [D]: S/D              | Systolic to Diastolic Velocity Ratio (LN, 12144-2)  |                                                                     |
| TAMx   |      | [D]: TAMx (angle°)    | Time averaged peak velocity (LN, 11692-1)           | Doppler Angle (DCM, 125106)                                         |
| Vmin   |      | [D]: Vmin (angle°)    | Blood velocity, minimum (DCM, 122206)               | Doppler Angle (DCM, 125106)                                         |
| Vmax   |      | [D]: Vmax (angle°)    | Blood velocity, peak (DCM, 122207)                  | Doppler Angle (DCM, 125106)                                         |
| TAMn   |      | [VF]: TAMn (angle°)   | Time averaged mean velocity (LN, 20352-1)           | Doppler Angle (DCM, 125106)                                         |
| VolF   |      | [VF]: Vol Flow        | Volume Flow (LN, 33878-0)                           | Measurement Method (SRT, G-C036): Doppler Volume Flow (DCM, 125219) |

### 9.2.1 Patient Characteristics

| Label                          | Code Meaning (Coding Scheme Designator, Code Value) | Modifiers |
|--------------------------------|-----------------------------------------------------|-----------|
| <b>Patient Characteristics</b> | Container: Patient Characteristics (DCM, 121118)    |           |
| Age                            | Subject Age (DCM, 121033)                           |           |
| BP                             | Systolic Blood Pressure (SRT, F-008EC)              |           |
| BP                             | Diastolic Blood Pressure (SRT, F-008ED)             |           |
| Sex                            | Subject Sex (DCM, 121032)                           |           |

### 9.2.2 Artery of Neck (Left Extracranial Arteries, Carotid Ratios)

| Label                                                                      | Code Meaning (Coding Scheme Designator, Code Value)                                              | Modifiers                                              |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <b>Artery of Neck<br/>(Left Extracranial Arteries,<br/>Carotid Ratios)</b> | Finding Site: Artery of neck (SRT, T-45005)                                                      | Laterality: Left (SRT, G-A101)                         |
| L ICA/CCA (Max) [Carotid D]                                                | ICA/CCA velocity ratio (LN, 33868-1)                                                             |                                                        |
| L Prox ICA/Dist CCA [Carotid D]                                            | ICA Prox/CCA Distal Peak Systolic Velocity ratio (99SIEMENS, ICApOverCCAdPSV)                    |                                                        |
| L Carotid Bulb [Carotid]                                                   | Location: Carotid Bulb (SRT, T-45170)<br>[ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] |                                                        |
| L CCA [Carotid]                                                            | Location: Common Carotid Artery (SRT, T-45100)                                                   |                                                        |
| L Dist CCA                                                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx ]                                    | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid CCA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx ]                                    | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox CCA                                                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx ]                                    | Topographical modifier: Proximal (SRT, G-A118)         |
| L ECA [Carotid]                                                            | Location: External Carotid Artery (SRT, T-45200)                                                 |                                                        |
| L Dist ECA                                                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid ECA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox ECA                                                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Proximal (SRT, G-A118)         |
| L ICA [Carotid]                                                            | Location: Internal Carotid Artery (SRT, T-45300)                                                 |                                                        |
| L Dist ICA                                                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid ICA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox ICA                                                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Proximal (SRT, G-A118)         |
| L Vert A [Carotid]                                                         | Location: Vertebral Artery (SRT, T-45700)                                                        |                                                        |
| L Dist Vert A                                                              | [ OutD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                                                      | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Vert A                                                               | [ OutD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                                                      | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Vert A                                                              | [ OutD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                                                      | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.3 Artery of Neck (Right Extracranial Arteries, Carotid Ratios)

| Label                                                                       | Code Meaning (Coding Scheme Designator, Code Value)                                              | Modifiers                                              |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <b>Artery of Neck<br/>(Right Extracranial Arteries,<br/>Carotid Ratios)</b> | Finding Site: Artery of neck (SRT, T-45005)                                                      | Laterality: Right (SRT, G-A100)                        |
| R ICA/CCA (Max) [Carotid D]                                                 | ICA/CCA velocity ratio (LN, 33868-1)                                                             |                                                        |
| R Prox ICA/Dist CCA [Carotid D]                                             | ICA Prox/CCA Distal Peak Systolic Velocity ratio (99SIEMENS, ICApOverCCAdPSV)                    |                                                        |
| R Carotid Bulb [Carotid]                                                    | Location: Carotid Bulb (SRT, T-45170)<br>[ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] |                                                        |
| R CCA [Carotid]                                                             | Location: Common Carotid Artery (SRT, T-45100)                                                   |                                                        |
| R Dist CCA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx ]                                    | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid CCA                                                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx ]                                    | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox CCA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx ]                                    | Topographical modifier: Proximal (SRT, G-A118)         |
| R ECA [Carotid]                                                             | Location: External Carotid Artery (SRT, T-45200)                                                 |                                                        |
| R Dist ECA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid ECA                                                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox ECA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Proximal (SRT, G-A118)         |
| R ICA [Carotid]                                                             | Location: Internal Carotid Artery (SRT, T-45300)                                                 |                                                        |
| R Dist ICA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid ICA                                                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox ICA                                                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                        | Topographical modifier: Proximal (SRT, G-A118)         |
| R Vert A [Carotid]                                                          | Location: Vertebral Artery (SRT, T-45700)                                                        |                                                        |
| R Dist Vert A                                                               | [ OutD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                                                      | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Vert A                                                                | [ OutD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                                                      | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Vert A                                                               | [ OutD, AT, ED, PS, S/D, TAMx, TAMn, VolF ]                                                      | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.4 Artery of Lower Extremity (Left Side)

| Label                                        | Code Meaning (Coding Scheme Designator, Code Value)             | Modifiers                                              |
|----------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| <b>Artery of Lower Extremity (Left Side)</b> | Finding Site: Artery of Lower Extremity (SRT, T-47040)          | Laterality: Left (SRT, G-A101)                         |
| L Ant Tib A [PV-L]                           | Location: Anterior Tibial Artery (SRT, T-47700)                 |                                                        |
| L Dist Ant Tib A                             | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Ant Tib A                              | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Ant Tib A                             | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Proximal (SRT, G-A118)         |
| L CFA [PV-L]                                 | Location: Common Femoral Artery (SRT, T-47400)                  |                                                        |
| L Dist CFA                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid CFA                                    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox CFA                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Proximal (SRT, G-A118)         |
| L CIA [Ao-I]                                 | Location: Common Iliac Artery (SRT, T-46710)                    |                                                        |
| L Dist CIA                                   | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]    | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid CIA                                    | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]    | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox CIA                                   | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]    | Topographical modifier: Proximal (SRT, G-A118)         |
| L DPA [PV-L]                                 | Location: Dorsalis Pedis Artery (SRT, T-47741)                  |                                                        |
| L Dist DPA                                   | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid DPA                                    | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox DPA                                   | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Proximal (SRT, G-A118)         |
| L EIA [Abd-RTr]                              | Location: External Iliac Artery (SRT, T-46910)                  |                                                        |
| L Dist EIA                                   | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid EIA                                    | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox EIA                                   | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Proximal (SRT, G-A118)         |
| L EIA [Ao-I]                                 | Location: External Iliac Artery (SRT, T-46910)                  |                                                        |
| L Dist EIA                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid EIA                                    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox EIA                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Proximal (SRT, G-A118)         |
| L IIA [Abd-RTr]                              | Location: Internal Iliac Artery (SRT, T-46740)                  |                                                        |
| L Dist IIA                                   | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid IIA                                    | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox IIA                                   | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                | Code Meaning (Coding Scheme Designator, Code Value)     | Modifiers                                              |
|----------------------|---------------------------------------------------------|--------------------------------------------------------|
| L IIA [Ao-I]         | Location: Internal Iliac Artery (SRT, T-46740)          |                                                        |
| L Dist IIA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid IIA            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox IIA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| L Peroneal A [PV-L]  | Location: Peroneal Artery (SRT, T-47630)                |                                                        |
| L Dist Peroneal A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Peroneal A     | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Peroneal A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Proximal (SRT, G-A118)         |
| L Pop A [PV-L]       | Location: Popliteal Artery (SRT, T-47500)               |                                                        |
| L Dist Pop A         | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Pop A          | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Pop A         | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| L Post Tib A [PV-L]  | Location: Posterior Tibial Artery (SRT, T-47600)        |                                                        |
| L Dist Post Tib A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Post Tib A     | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Post Tib A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Proximal (SRT, G-A118)         |
| L PFA [PV-L]         | Location: Profunda Femoris Artery (SRT, T-47440)        |                                                        |
| L Dist PFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid PFA            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox PFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| L SFA [PV-L]         | Location: Superficial Femoral Artery (SRT, T-47403)     |                                                        |
| L Dist SFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid SFA            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox SFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| L T-P Trunk A [PV-L] | Location: Tibioperoneal Trunk (SRT, T-4704A)            |                                                        |
| L Dist T-P Trunk A   | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid T-P Trunk A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox T-P Trunk A   | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.5 Artery of Lower Extremity (Right Side)

| Label                                         | Code Meaning (Coding Scheme Designator, Code Value)             | Modifiers                                              |
|-----------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------|
| <b>Artery of Lower Extremity (Right Side)</b> | Finding Site: Artery of Lower Extremity (SRT, T-47040)          | Laterality: Right (SRT, G-A100)                        |
| R Ant Tib A [PV-L]                            | Location: Anterior Tibial Artery (SRT, T-47700)                 |                                                        |
| R Dist Ant Tib A                              | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Ant Tib A                               | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Ant Tib A                              | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Proximal (SRT, G-A118)         |
| R CFA [PV-L]                                  | Location: Common Femoral Artery (SRT, T-47400)                  |                                                        |
| R Dist CFA                                    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid CFA                                     | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox CFA                                    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Proximal (SRT, G-A118)         |
| R CIA [Ao-I]                                  | Location: Common Iliac Artery (SRT, T-46710)                    |                                                        |
| R Dist CIA                                    | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]    | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid CIA                                     | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]    | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox CIA                                    | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]    | Topographical modifier: Proximal (SRT, G-A118)         |
| R DPA [PV-L]                                  | Location: Dorsalis Pedis Artery (SRT, T-47741)                  |                                                        |
| R Dist DPA                                    | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid DPA                                     | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox DPA                                    | [ AT, ED, PS, S/D ]                                             | Topographical modifier: Proximal (SRT, G-A118)         |
| R EIA [Abd-RTr]                               | Location: External Iliac Artery (SRT, T-46910)                  |                                                        |
| R Dist EIA                                    | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid EIA                                     | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox EIA                                    | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Proximal (SRT, G-A118)         |
| R EIA [Ao-I]                                  | Location: External Iliac Artery (SRT, T-46910)                  |                                                        |
| R Dist EIA                                    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid EIA                                     | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox EIA                                    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]         | Topographical modifier: Proximal (SRT, G-A118)         |
| R IIA [Abd-RTr]                               | Location: Internal Iliac Artery (SRT, T-46740)                  |                                                        |
| R Dist IIA                                    | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid IIA                                     | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox IIA                                    | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                | Code Meaning (Coding Scheme Designator, Code Value)     | Modifiers                                              |
|----------------------|---------------------------------------------------------|--------------------------------------------------------|
| R IIA [Ao-I]         | Location: Internal Iliac Artery (SRT, T-46740)          |                                                        |
| R Dist IIA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid IIA            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox IIA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| R Peroneal A [PV-L]  | Location: Peroneal Artery (SRT, T-47630)                |                                                        |
| R Dist Peroneal A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Peroneal A     | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Peroneal A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Proximal (SRT, G-A118)         |
| R Pop A [PV-L]       | Location: Popliteal Artery (SRT, T-47500)               |                                                        |
| R Dist Pop A         | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Pop A          | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Pop A         | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| R Post Tib A [PV-L]  | Location: Posterior Tibial Artery (SRT, T-47600)        |                                                        |
| R Dist Post Tib A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Post Tib A     | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Post Tib A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Proximal (SRT, G-A118)         |
| R PFA [PV-L]         | Location: Profunda Femoris Artery (SRT, T-47440)        |                                                        |
| R Dist PFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid PFA            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox PFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| R SFA [PV-L]         | Location: Superficial Femoral Artery (SRT, T-47403)     |                                                        |
| R Dist SFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid SFA            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox SFA           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| R T-P Trunk A [PV-L] | Location: Tibioperoneal Trunk (SRT, T-4704A)            |                                                        |
| R Dist T-P Trunk A   | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid T-P Trunk A    | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox T-P Trunk A   | [ AT, ED, PS, S/D ]                                     | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.6 Vein of Lower Extremity (Left Side)

| Label                                      | Code Meaning (Coding Scheme Designator, Code Value)  | Modifiers                                              |
|--------------------------------------------|------------------------------------------------------|--------------------------------------------------------|
| <b>Vein of Lower Extremity (Left Side)</b> | Finding Site: Vein of Lower Extremity (SRT, T-49403) | Laterality: Left (SRT, G-A101)                         |
| L EIV [Abd-RTr]                            | Location: External Iliac Vein (SRT, T-48930)         |                                                        |
| L Dist EIV                                 | [ Diam, Vmax ]                                       | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid EIV                                  | [ Diam, Vmax ]                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox EIV                                 | [ Diam, Vmax ]                                       | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.7 Vein of Lower Extremity (Right Side)

| Label                                       | Code Meaning (Coding Scheme Designator, Code Value)  | Modifiers                                              |
|---------------------------------------------|------------------------------------------------------|--------------------------------------------------------|
| <b>Vein of Lower Extremity (Right Side)</b> | Finding Site: Vein of Lower Extremity (SRT, T-49403) | Laterality: Right (SRT, G-A100)                        |
| R EIV [Abd-RTr]                             | Location: External Iliac Vein (SRT, T-48930)         |                                                        |
| R Dist EIV                                  | [ Diam, Vmax ]                                       | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid EIV                                   | [ Diam, Vmax ]                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox EIV                                  | [ Diam, Vmax ]                                       | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.8 Artery of Upper Extremity (Left Side)

| Label                                        | Code Meaning (Coding Scheme Designator, Code Value)     | Modifiers                                              |
|----------------------------------------------|---------------------------------------------------------|--------------------------------------------------------|
| <b>Artery of Upper Extremity (Left Side)</b> | Finding Site: Artery of Upper Extremity (SRT, T-47020)  | Laterality: Left (SRT, G-A101)                         |
| L Axil A [PV-U]                              | Location: Axillary Artery (SRT, T-47100)                |                                                        |
| L Dist Axil A                                | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Axil A                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Axil A                                | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                 | Code Meaning (Coding Scheme Designator, Code Value)       | Modifiers                                              |
|-----------------------|-----------------------------------------------------------|--------------------------------------------------------|
| L Brach A [PV-U]      | Location: Brachial Artery (SRT, T-47160)                  |                                                        |
| L Dist Brach A        | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Brach A         | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Brach A        | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| L Deep Brach A [PV-U] | Location: Deep Brachial Artery (99SIEMENS, DeepBrachialA) |                                                        |
| L Dist Deep Brach A   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Deep Brach A    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Deep Brach A   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| L Radial A [PV-U]     | Location: Radial Artery (SRT, T-47300)                    |                                                        |
| L Dist Radial A       | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Radial A        | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Radial A       | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| L Subclav A [Carotid] | Location: Subclavian Artery (SRT, T-46100)                |                                                        |
| L Dist Subclav A      | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Subclav A       | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Subclav A      | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Proximal (SRT, G-A118)         |
| L Subclav A [PV-U]    | Location: Subclavian Artery (SRT, T-46100)                |                                                        |
| L Dist Subclav A      | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Subclav A       | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Subclav A      | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| L Ulnar A [PV-U]      | Location: Ulnar Artery (SRT, T-47200)                     |                                                        |
| L Dist Ulnar A        | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Ulnar A         | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Ulnar A        | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.9 Artery of Upper Extremity (Right Side)

| Label                                         | Code Meaning (Coding Scheme Designator, Code Value)       | Modifiers                                              |
|-----------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|
| <b>Artery of Upper Extremity (Right Side)</b> | Finding Site: Artery of Upper Extremity (SRT, T-47020)    | Laterality: Right (SRT, G-A100)                        |
| R Axil A [PV-U]                               | Location: Axillary Artery (SRT, T-47100)                  |                                                        |
| R Dist Axil A                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Axil A                                  | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Axil A                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| R Brach A [PV-U]                              | Location: Brachial Artery (SRT, T-47160)                  |                                                        |
| R Dist Brach A                                | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Brach A                                 | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Brach A                                | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| R Deep Brach A [PV-U]                         | Location: Deep Brachial Artery (99SIEMENS, DeepBrachialA) |                                                        |
| R Dist Deep Brach A                           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Deep Brach A                            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Deep Brach A                           | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| Innom A [Carotid], [PV-U]                     | Location: Innominate Artery (SRT, T-46010)                |                                                        |
| Dist Innom A                                  | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Innom A                                   | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Innom A                                  | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Proximal (SRT, G-A118)         |
| R Radial A [PV-U]                             | Location: Radial Artery (SRT, T-47300)                    |                                                        |
| R Dist Radial A                               | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Radial A                                | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Radial A                               | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ]   | Topographical modifier: Proximal (SRT, G-A118)         |
| R Subclav A [Carotid]                         | Location: Subclavian Artery (SRT, T-46100)                |                                                        |
| R Dist Subclav A                              | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Subclav A                               | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Subclav A                              | [ AT, ED, PS, S/D ]                                       | Topographical modifier: Proximal (SRT, G-A118)         |

| Label              | Code Meaning (Coding Scheme Designator, Code Value)     | Modifiers                                              |
|--------------------|---------------------------------------------------------|--------------------------------------------------------|
| R Subclav A [PV-U] | Location: Subclavian Artery (SRT, T-46100)              |                                                        |
| R Dist Subclav A   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Subclav A    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Subclav A   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |
| R Ulnar A [PV-U]   | Location: Ulnar Artery (SRT, T-47200)                   |                                                        |
| R Dist Ulnar A     | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Ulnar A      | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Ulnar A     | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |

### 9.2.10 Vascular Structure of Kidney (Left Side)

For Ao-Renal [Ao-R], there are separate worksheets for 2D, Velocities, and Acceleration Times. The measurements are grouped on these worksheets as follows:

|                      |                                          |
|----------------------|------------------------------------------|
| [2D]                 | InA, InD, OutA, OutD, StenA, StenD, Diam |
| [Velocities]         | ED, PI, PS, RI, S/D, TAMx                |
| [Acceleration Times] | AT                                       |
| [VF]                 | OutD, TAMn, VolF                         |

| Label                                           | Code Meaning (Coding Scheme Designator, Code Value)                                        | Modifiers                                      |
|-------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Vascular Structure of Kidney (Left Side)</b> | Finding Site: Vascular Structure of Kidney (SRT, T-71019)                                  | Laterality: Left (SRT, G-A101)                 |
| L RA/Ao [Ao-R Velocities]                       | Renal Artery/Aorta velocity ratio (LN, 33869-9)                                            | Finding Site: Supra-renal Aorta (SRT, T-42510) |
| L Inf Arcuate A [Ao-R]                          | Location: Arcuate Artery of the Kidney (SRT, T-4668A)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ] | Vessel Branch: Inferior (SRT, G-A115)          |
| L Med Arcuate A [Ao-R]                          | Location: Arcuate Artery of the Kidney (SRT, T-4668A)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ] | Vessel Branch: Medial (SRT, G-A109)            |
| L Sup Arcuate A [Ao-R]                          | Location: Arcuate Artery of the Kidney (SRT, T-4668A)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ] | Vessel Branch: Superior (SRT, G-A116)          |
| L Interlobar A [Ao-R]                           | Location: Interlobar Artery of Kidney (SRT, T-4667D)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]  |                                                |

| Label                     | Code Meaning (Coding Scheme Designator, Code Value)                                                                        | Modifiers                                              |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| L Renal A [Ao-R]          | Location: Renal Artery (SRT, T-46600)                                                                                      |                                                        |
| L Dist Renal A            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                          | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Renal A             | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                          | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Renal A            | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                          | Topographical modifier: Proximal (SRT, G-A118)         |
| L Renal A Origin [Ao-R]   | Location: Renal Artery (SRT, T-46600)<br>[ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Origin of vessel (SRT, G-036A) |
| L Renal V [Ao-R]          | Location: Renal Vein (SRT, T-48740)                                                                                        |                                                        |
| L Dist Renal V            | [ Diam, Vmax ]                                                                                                             | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Renal V             | [ Diam, Vmax ]                                                                                                             | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Renal V            | [ Diam, Vmax ]                                                                                                             | Topographical modifier: Proximal (SRT, G-A118)         |
| L Inf Seg A [Ao-R]        | Location: Segmental Artery (SRT, T-46659)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]                                             | Vessel Branch: Inferior (SRT, G-A115)                  |
| L Med Seg A [Ao-R]        | Location: Segmental Artery (SRT, T-46659)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]                                             | Vessel Branch: Medial (SRT, G-A109)                    |
| L Sup Seg A [Ao-R]        | Location: Segmental Artery (SRT, T-46659)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]                                             | Vessel Branch: Superior (SRT, G-A116)                  |
| L Kidney                  | Location: Kidney (SRT, T-71000)                                                                                            |                                                        |
| L Kidney A/P [Ao-R 2D]    | Height (DCM, 121207)                                                                                                       |                                                        |
| L Kidney A/P [Ao-R 2D]    | Height (DCM, 121207)                                                                                                       | Derivation: Mean (SRT, R-00317)                        |
| L Kidney Length [Ao-R 2D] | Length (SRT, G-A22A)                                                                                                       |                                                        |
| L Kidney Length [Ao-R 2D] | Length (SRT, G-A22A)                                                                                                       | Derivation: Mean (SRT, R-00317)                        |
| L Kidney Width [Ao-R 2D]  | Width (SRT, G-A220)                                                                                                        |                                                        |
| L Kidney Width [Ao-R 2D]  | Width (SRT, G-A220)                                                                                                        | Derivation: Mean (SRT, R-00317)                        |

### 9.2.11 Vascular Structure of Kidney (Right Side)

For Ao-Renal [Ao-R], there are separate worksheets for 2D, Velocities, Acceleration Times, and Volume Flow. The measurements are grouped on these worksheets as follows:

|                      |                                          |
|----------------------|------------------------------------------|
| [2D]                 | InA, InD, OutA, OutD, StenA, StenD, Diam |
| [Velocities]         | ED, PI, PS, RI, S/D, TAMx                |
| [Acceleration Times] | AT                                       |
| [VF]                 | OutD, TAMn, VolF                         |

| Label                                            | Code Meaning (Coding Scheme Designator, Code Value)                                                                        | Modifiers                                              |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <b>Vascular Structure of Kidney (Right Side)</b> | Finding Site: Vascular Structure of Kidney (SRT, T-71019)                                                                  | Laterality: Right (SRT, G-A100)                        |
| R RA/Ao [Ao-R Velocities]                        | Renal Artery/Aorta velocity ratio (LN, 33869-9)                                                                            | Finding Site: Supra-renal Aorta (SRT, T-42510)         |
| R Inf Arcuate A [Ao-R]                           | Location: Arcuate Artery of the Kidney (SRT, T-4668A)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]                                 | Vessel Branch: Inferior (SRT, G-A115)                  |
| R Med Arcuate A [Ao-R]                           | Location: Arcuate Artery of the Kidney (SRT, T-4668A)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]                                 | Vessel Branch: Medial (SRT, G-A109)                    |
| R Sup Arcuate A [Ao-R]                           | Location: Arcuate Artery of the Kidney (SRT, T-4668A)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]                                 | Vessel Branch: Superior (SRT, G-A116)                  |
| R Interlobar A [Ao-R]                            | Location: Interlobar Artery of Kidney (SRT, T-4667D)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ]                                  |                                                        |
| R Renal A [Ao-R]                                 | Location: Renal Artery (SRT, T-46600)                                                                                      |                                                        |
| R Dist Renal A                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                          | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Renal A                                    | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                          | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Renal A                                   | [ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                          | Topographical modifier: Proximal (SRT, G-A118)         |
| R Renal A Origin [Ao-R]                          | Location: Renal Artery (SRT, T-46600)<br>[ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Origin of vessel (SRT, G-036A) |
| R Renal V [Ao-R]                                 | Location: Renal Vein (SRT, T-48740)                                                                                        |                                                        |
| R Dist Renal V                                   | [ Diam, Vmax ]                                                                                                             | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Renal V                                    | [ Diam, Vmax ]                                                                                                             | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Renal V                                   | [ Diam, Vmax ]                                                                                                             | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                     | Code Meaning (Coding Scheme Designator, Code Value)                            | Modifiers                             |
|---------------------------|--------------------------------------------------------------------------------|---------------------------------------|
| R Inf Seg A [Ao-R]        | Location: Segmental Artery (SRT, T-46659)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ] | Vessel Branch: Inferior (SRT, G-A115) |
| R Med Seg A [Ao-R]        | Location: Segmental Artery (SRT, T-46659)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ] | Vessel Branch: Medial (SRT, G-A109)   |
| R Sup Seg A [Ao-R]        | Location: Segmental Artery (SRT, T-46659)<br>[ AT, ED, PI, PS, RI, S/D, TAMx ] | Vessel Branch: Superior (SRT, G-A116) |
| R Kidney                  | Location: Kidney (SRT, T-71000)                                                |                                       |
| R Kidney A/P [Ao-R 2D]    | Height (DCM, 121207)                                                           |                                       |
| R Kidney A/P [Ao-R 2D]    | Height (DCM, 121207)                                                           | Derivation: Mean (SRT, R-00317)       |
| R Kidney Length [Ao-R 2D] | Length (SRT, G-A22A)                                                           |                                       |
| R Kidney Length [Ao-R 2D] | Length (SRT, G-A22A)                                                           | Derivation: Mean (SRT, R-00317)       |
| R Kidney Width [Ao-R 2D]  | Width (SRT, G-A220)                                                            |                                       |
| R Kidney Width [Ao-R 2D]  | Width (SRT, G-A220)                                                            | Derivation: Mean (SRT, R-00317)       |

### 9.2.12 Artery of Abdomen (Unilateral)

For Ao-Renal [Ao-R], there are separate worksheets for 2D, Velocities, and Acceleration Times. The measurements are grouped on these worksheets as follows:

|                      |                                         |
|----------------------|-----------------------------------------|
| [2D]                 | InA, InD, OutA, OutD, TrD, StenA, StenD |
| [Velocities]         | ED, PI, PS, RI, S/D, TAMx               |
| [Acceleration Times] | AT                                      |
| [VF]                 | OutD, TAMn, VolF                        |

| Label                                 | Code Meaning (Coding Scheme Designator, Code Value)      | Modifiers                                              |
|---------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| <b>Artery of Abdomen (Unilateral)</b> | Finding Site: Artery of Abdomen (SRT, T-46002)           | Laterality: Unilateral (SRT, G-A103)                   |
| Aorta [Abd-Mes]                       | Location: Aorta (SRT, T-42000)                           |                                                        |
| Dist Aorta                            | [ InA, InD, OutA, OutD, TrD, StenA, StenD, ED, PS, S/D ] | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Aorta                             | [ InA, InD, OutA, OutD, TrD, StenA, StenD, ED, PS, S/D ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Aorta                            | [ InA, InD, OutA, OutD, TrD, StenA, StenD, ED, PS, S/D ] | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                        | Code Meaning (Coding Scheme Designator, Code Value)                                                | Modifiers                                              |
|------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Aorta [Ao-I]                 | Location: Aorta (SRT, T-42000)                                                                     |                                                        |
| Dist Aorta                   | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]                                       | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Aorta                    | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Aorta                   | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PS, S/D ]                                       | Topographical modifier: Proximal (SRT, G-A118)         |
| Aorta [Ao-R]                 | Location: Aorta (SRT, T-42000)                                                                     |                                                        |
| Dist Aorta                   | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]             | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Aorta                    | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]             | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Aorta                   | [ InA, InD, OutA, OutD, TrD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]             | Topographical modifier: Proximal (SRT, G-A118)         |
| Aortic Bifurcation [Abd-Mes] | Location: Aortic Bifurcation (SRT, T-42580)<br>[ InA, InD, OutA, OutD, StenA, StenD, ED, PS, S/D ] |                                                        |
| Celiac A Origin [Abd-Mes]    | Location: Celiac Axis (SRT, T-46400)<br>[ InD, OutD, StenD, ED, PS, S/D ]                          |                                                        |
| CHA [Abd-Hep]                | Location: Common Hepatic Artery (SRT, T-46421)                                                     |                                                        |
| Dist CHA                     | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                              | Topographical modifier: Distal (SRT, G-A119)           |
| Mid CHA                      | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                              | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox CHA                     | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                              | Topographical modifier: Proximal (SRT, G-A118)         |
| CHA [Abd-LTr]                | Location: Common Hepatic Artery (SRT, T-46421)                                                     |                                                        |
| Dist CHA                     | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                          | Topographical modifier: Distal (SRT, G-A119)           |
| Mid CHA                      | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                          | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox CHA                     | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                          | Topographical modifier: Proximal (SRT, G-A118)         |
| CHA [Abd-Mes]                | Location: Common Hepatic Artery (SRT, T-46421)                                                     |                                                        |
| Dist CHA                     | [ InD, OutD, StenD, ED, PS, S/D ]                                                                  | Topographical modifier: Distal (SRT, G-A119)           |
| Mid CHA                      | [ InD, OutD, StenD, ED, PS, S/D ]                                                                  | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox CHA                     | [ InD, OutD, StenD, ED, PS, S/D ]                                                                  | Topographical modifier: Proximal (SRT, G-A118)         |
| IMA [Abd-Mes]                | Location: Inferior Mesenteric Artery (SRT, T-46520)                                                |                                                        |
| Dist IMA                     | [ InD, OutD, StenD, ED, PS, S/D ]                                                                  | Topographical modifier: Distal (SRT, G-A119)           |
| Mid IMA                      | [ InD, OutD, StenD, ED, PS, S/D ]                                                                  | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox IMA                     | [ InD, OutD, StenD, ED, PS, S/D ]                                                                  | Topographical modifier: Proximal (SRT, G-A118)         |
| IMA Origin [Abd-Mes]         | Location: Inferior Mesenteric Artery (SRT, T-46520)<br>[ InD, OutD, StenD, ED, PS, S/D ]           | Topographical modifier: Origin of vessel (SRT, G-036A) |

| Label                   | Code Meaning (Coding Scheme Designator, Code Value)                                                                             | Modifiers                                              |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| L Hepatic A [Abd-Hep]   | Location: Left Branch of Hepatic Artery (SRT, T-46427)                                                                          |                                                        |
| L Dist Hepatic A        | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                                                           | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Hepatic A         | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                                                           | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Hepatic A        | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                                                           | Topographical modifier: Proximal (SRT, G-A118)         |
| L Hepatic A [Abd-LTr]   | Location: Left Branch of Hepatic Artery (SRT, T-46427)                                                                          |                                                        |
| L Dist Hepatic A        | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                                                       | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Hepatic A         | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Hepatic A        | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                                                       | Topographical modifier: Proximal (SRT, G-A118)         |
| R Hepatic A [Abd-Hep]   | Location: Right Branch of Hepatic Artery (SRT, T-46423)                                                                         |                                                        |
| R Dist Hepatic A        | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                                                           | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Hepatic A         | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                                                           | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Hepatic A        | [ InD, OutD, StenD, ED, PS, RI, S/D ]                                                                                           | Topographical modifier: Proximal (SRT, G-A118)         |
| R Hepatic A [Abd-LTr]   | Location: Right Branch of Hepatic Artery (SRT, T-46423)                                                                         |                                                        |
| R Dist Hepatic A        | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                                                       | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Hepatic A         | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                                                       | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Hepatic A        | [ InD, OutD, StenD, AT, ED, PS, RI, S/D ]                                                                                       | Topographical modifier: Proximal (SRT, G-A118)         |
| Splenic A [Abd-Mes]     | Location: Splenic Artery (SRT, T-46460)                                                                                         |                                                        |
| Dist Splenic A          | [ InD, OutD, StenD, ED, PS, S/D ]                                                                                               | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Splenic A           | [ InD, OutD, StenD, ED, PS, S/D ]                                                                                               | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Splenic A          | [ InD, OutD, StenD, ED, PS, S/D ]                                                                                               | Topographical modifier: Proximal (SRT, G-A118)         |
| SMA [Abd-Mes]           | Location: Superior Mesenteric Artery (SRT, T-46510)                                                                             |                                                        |
| Dist SMA                | [ InD, OutD, StenD, ED, PS, S/D ]                                                                                               | Topographical modifier: Distal (SRT, G-A119)           |
| Mid SMA                 | [ InD, OutD, StenD, ED, PS, S/D ]                                                                                               | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox SMA                | [ InD, OutD, StenD, ED, PS, S/D ]                                                                                               | Topographical modifier: Proximal (SRT, G-A118)         |
| SMA Origin [Abd-Mes]    | Location: Superior Mesenteric Artery (SRT, T-46510)<br>[ InD, OutD, StenD, ED, PS, S/D ]                                        | Topographical modifier: Origin of vessel (SRT, G-036A) |
| Suprarenal Aorta [Ao-R] | Location: Supra-renal Aorta (SRT, T-42510)<br>[ InA, InD, OutA, OutD, StenA, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] |                                                        |

### 9.2.13 Vein of Abdomen (Unilateral)

| Label                               | Code Meaning (Coding Scheme Designator, Code Value)      | Modifiers                                              |
|-------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| <b>Vein of Abdomen (Unilateral)</b> | Finding Site: Vein of Abdomen (SRT, T-487A0)             | Laterality: Unilateral (SRT, G-A103)                   |
| IVC [Abd-Hep], [Abd-LTr]            | Location: Inferior Vena Cava (SRT, T-48710)              |                                                        |
| Dist IVC                            | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Distal (SRT, G-A119)           |
| Mid IVC                             | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox IVC                            | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Proximal (SRT, G-A118)         |
| IVC [Ao-R]                          | Location: Inferior Vena Cava (SRT, T-48710)              |                                                        |
| Dist IVC                            | [ Diam ]                                                 | Topographical modifier: Distal (SRT, G-A119)           |
| Mid IVC                             | [ Diam ]                                                 | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox IVC                            | [ Diam ]                                                 | Topographical modifier: Proximal (SRT, G-A118)         |
| L Hepatic V [Abd-Hep], [Abd-LTr]    | Location: Left Hepatic Vein (SRT, T-48727)               |                                                        |
| L Dist Hepatic V                    | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Hepatic V                     | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Hepatic V                    | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Proximal (SRT, G-A118)         |
| L Hepatic V [Abd-TIPS]              | Location: Left Hepatic Vein (SRT, T-48727)               |                                                        |
| L Dist Hepatic V                    | [ Diam, Vmax ]                                           | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Hepatic V                     | [ Diam, Vmax ]                                           | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Hepatic V                    | [ Diam, Vmax ]                                           | Topographical modifier: Proximal (SRT, G-A118)         |
| L Portal V [Abd-Hep], [Abd-LTr]     | Location: Left Main Branch of Portal Vein (SRT, T-4881F) |                                                        |
| L Dist Portal V                     | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Portal V                      | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Portal V                     | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Proximal (SRT, G-A118)         |
| L Portal V [Abd-TIPS]               | Location: Left Main Branch of Portal Vein (SRT, T-4881F) |                                                        |
| L Dist Portal V                     | [ Diam, Vmax ]                                           | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Portal V                      | [ Diam, Vmax ]                                           | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Portal V                     | [ Diam, Vmax ]                                           | Topographical modifier: Proximal (SRT, G-A118)         |
| M Hepatic V [Abd-Hep], [Abd-LTr]    | Location: Middle Hepatic Vein (SRT, T-48726)             |                                                        |
| Dist M Hepatic V                    | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Distal (SRT, G-A119)           |
| Mid M Hepatic V                     | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox M Hepatic V                    | [ Diam, PI, Vmin, Vmax ]                                 | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                              | Code Meaning (Coding Scheme Designator, Code Value)       | Modifiers                                              |
|------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|
| M Hepatic V [Abd-TIPS]             | Location: Middle Hepatic Vein (SRT, T-48726)              |                                                        |
| Dist M Hepatic V                   | [ Diam, Vmax ]                                            | Topographical modifier: Distal (SRT, G-A119)           |
| Mid M Hepatic V                    | [ Diam, Vmax ]                                            | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox M Hepatic V                   | [ Diam, Vmax ]                                            | Topographical modifier: Proximal (SRT, G-A118)         |
| Main Portal V [Abd-Hep], [Abd-LTr] | Location: Portal Vein (SRT, T-48810)                      |                                                        |
| Dist Main Portal V                 | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Main Portal V                  | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Main Portal V                 | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Proximal (SRT, G-A118)         |
| Main Portal V [Abd-TIPS]           | Location: Portal Vein (SRT, T-48810)                      |                                                        |
| Dist Main Portal V                 | [ Diam, Vmax ]                                            | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Main Portal V                  | [ Diam, Vmax ]                                            | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Main Portal V                 | [ Diam, Vmax ]                                            | Topographical modifier: Proximal (SRT, G-A118)         |
| R Hepatic V [Abd-Hep], [Abd-LTr]   | Location: Right Hepatic Vein (SRT, T-48725)               |                                                        |
| R Dist Hepatic V                   | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Hepatic V                    | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Hepatic V                   | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Proximal (SRT, G-A118)         |
| R Hepatic V [Abd-TIPS]             | Location: Right Hepatic Vein (SRT, T-48725)               |                                                        |
| R Dist Hepatic V                   | [ Diam, Vmax ]                                            | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Hepatic V                    | [ Diam, Vmax ]                                            | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Hepatic V                   | [ Diam, Vmax ]                                            | Topographical modifier: Proximal (SRT, G-A118)         |
| R Portal V [Abd-Hep], [Abd-LTr]    | Location: Right Main Branch of Portal Vein (SRT, T-4882A) |                                                        |
| R Dist Portal V                    | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Portal V                     | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Portal V                    | [ Diam, PI, Vmin, Vmax ]                                  | Topographical modifier: Proximal (SRT, G-A118)         |
| R Portal V [Abd-TIPS]              | Location: Right Main Branch of Portal Vein (SRT, T-4882A) |                                                        |
| R Dist Portal V                    | [ Diam, Vmax ]                                            | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Portal V                     | [ Diam, Vmax ]                                            | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Portal V                    | [ Diam, Vmax ]                                            | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                        | Code Meaning (Coding Scheme Designator, Code Value)                                     | Modifiers                                              |
|------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------|
| Splenic V [Abd-Hep]          | Location: Splenic Vein (SRT, T-48890)                                                   |                                                        |
| Dist Splenic V               | [ Diam, Vmax ]                                                                          | Topographical modifier: Distal (SRT, G-A119)           |
| Mid Splenic V                | [ Diam, Vmax ]                                                                          | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox Splenic V               | [ Diam, Vmax ]                                                                          | Topographical modifier: Proximal (SRT, G-A118)         |
| SMV [Abd-Hep]                | Location: Superior Mesenteric Vein (SRT, T-48840)                                       |                                                        |
| Dist SMV                     | [ Diam, Vmax ]                                                                          | Topographical modifier: Distal (SRT, G-A119)           |
| Mid SMV                      | [ Diam, Vmax ]                                                                          | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox SMV                     | [ Diam, Vmax ]                                                                          | Topographical modifier: Proximal (SRT, G-A118)         |
| SVC [Abd-LTr]                | Location: Superior Vena Cava (SRT, T-48610)                                             |                                                        |
| Dist SVC                     | [ Diam, PI, Vmin, Vmax ]                                                                | Topographical modifier: Distal (SRT, G-A119)           |
| Mid SVC                      | [ Diam, PI, Vmin, Vmax ]                                                                | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Prox SVC                     | [ Diam, PI, Vmin, Vmax ]                                                                | Topographical modifier: Proximal (SRT, G-A118)         |
| Stent-Hepatic End [Abd-TIPS] | Location: Transjugular Intrahepatic Portosystemic Shunt (SRT, G-036C)<br>[ Diam, Vmax ] | Topographical modifier: Distal (SRT, G-A119)           |
| Stent-Mid [Abd-TIPS]         | Location: Transjugular Intrahepatic Portosystemic Shunt (SRT, G-036C)<br>[ Diam, Vmax ] | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| Stent-Portal End [Abd-TIPS]  | Location: Transjugular Intrahepatic Portosystemic Shunt (SRT, G-036C)<br>[ Diam, Vmax ] | Topographical modifier: Proximal (SRT, G-A118)         |

## 9.2.14 Vascular Graft 1

| Label                                     | Code Meaning (Coding Scheme Designator, Code Value)             | Modifiers                                                                                                                                                |
|-------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vascular Graft 1</b>                   | Finding Site: Vascular Graft (SRT, T-D000F)                     | Proximal anastomosis: Graft 1 Inflow Vessel<br>(99SIEMENS, Graft1InVessel)<br>Distal anastomosis: Graft 1 Outflow Vessel<br>(99SIEMENS, Graft1OutVessel) |
| Abd: 2D/Doppler/Volume Flow<br>Dist Anast | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VoIF ] | Topographical modifier: Graft to cited segment, distal anastomosis (SRT, G-D872)                                                                         |
| Abd: 2D/Doppler/Volume Flow<br>Prox Anast | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VoIF ] | Topographical modifier: Graft to cited segment, proximal anastomosis (SRT, G-D871)                                                                       |
| Abd: 2D/Doppler/Volume Flow<br>Dist Graft | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VoIF ] | Topographical modifier: Graft to cited segment, distal section (DCM, 122104)                                                                             |

| Label                                     | Code Meaning (Coding Scheme Designator, Code Value)             | Modifiers                                                                      |
|-------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------|
| Abd: 2D/Doppler/Volume Flow<br>Mid Graft  | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Graft to cited segment, mid section (DCM, 122103)      |
| Abd: 2D/Doppler/Volume Flow<br>Prox Graft | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Graft to cited segment, proximal section (DCM, 122102) |

### 9.2.15 Vascular Graft 2

| Label                                     | Code Meaning (Coding Scheme Designator, Code Value)             | Modifiers                                                                                                                                          |
|-------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vascular Graft 2</b>                   | Finding Site: Vascular Graft (SRT, T-D000F)                     | Proximal anastomosis: Graft 2 Inflow Vessel (99SIEMENS, Graft2InVessel)<br>Distal anastomosis: Graft 2 Outflow Vessel (99SIEMENS, Graft2OutVessel) |
| Abd: 2D/Doppler/Volume Flow<br>Dist Anast | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Graft to cited segment, distal anastomosis (SRT, G-D872)                                                                   |
| Abd: 2D/Doppler/Volume Flow<br>Prox Anast | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Graft to cited segment, proximal anastomosis (SRT, G-D871)                                                                 |
| Abd: 2D/Doppler/Volume Flow<br>Dist Graft | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Graft to cited segment, distal section (DCM, 122104)                                                                       |
| Abd: 2D/Doppler/Volume Flow<br>Mid Graft  | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Graft to cited segment, mid section (DCM, 122103)                                                                          |
| Abd: 2D/Doppler/Volume Flow<br>Prox Graft | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Topographical modifier: Graft to cited segment, proximal section (DCM, 122102)                                                                     |

### 9.2.16 Private Section: Transplant

The Liver Transplant measurements and the Kidney Transplant measurements are each contained within a Private section as described below.

| Parameter Name | Parameter Usage                                                                                                                                                              |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| \$AnatomyGroup | The concept name of the vascular anatomy.                                                                                                                                    |
| \$Anatomy      | See <i>Section 9.2.16.1 Liver Transplant</i> for Liver Transplant vascular anatomy.<br>See <i>Section 9.2.16.2 Kidney Transplant</i> for Kidney Transplant vascular anatomy. |
| \$AnatomyRatio | The concept name of anatomy-coordinated ratio concepts.<br>See <i>Section 9.2.16.1 Liver Transplant</i> for Liver Transplant ratios.                                         |

## TID 5100 Extension

|    | NL | Rel with Parent | VT      | Concept Name                    | VM  | Req Type | Condition | Value Set Constraint |
|----|----|-----------------|---------|---------------------------------|-----|----------|-----------|----------------------|
| 31 | >  | CONTAINS        | INCLUDE | Private TID: Transplant Section | 1-n | U        |           |                      |

## Private TID: Transplant Section

|   | NL | Rel with Parent | VT        | Concept Name                              | VM  | Req Type | Condition | Value Set Constraint                                                                                 |
|---|----|-----------------|-----------|-------------------------------------------|-----|----------|-----------|------------------------------------------------------------------------------------------------------|
| 1 |    |                 | CONTAINER | EV (121070, DCM, "Findings")              | 1   | M        |           |                                                                                                      |
| 2 | >  | HAS CONCEPT MOD | CODE      | EV (121058, DCM, "Procedure reported")    | 1   | M        |           | \$Procedure = (P1-5BD10, SRT, "Transplantation of liver") or (P1-71D00, SRT, "Transplant of kidney") |
| 3 | >  | CONTAINS        | INCLUDE   | Private TID: Transplant Measurement Group | 1-n | M        |           | \$AnatomyGroup = \$Anatomy                                                                           |
| 4 | >  | CONTAINS        | INCLUDE   | DTID (300) Measurement                    | 1-n | U        |           | \$Measurement = \$AnatomyRatio                                                                       |

## Private TID: Transplant Measurement Group

|   | NL | Rel with Parent | VT        | Concept Name                               | VM  | Req Type | Condition | Value Set Constraint                                                                                     |
|---|----|-----------------|-----------|--------------------------------------------|-----|----------|-----------|----------------------------------------------------------------------------------------------------------|
| 1 |    |                 | CONTAINER | \$AnatomyGroup                             | 1   | M        |           |                                                                                                          |
| 2 | >  | HAS CONCEPT MOD | CODE      | EV (G-C171, SRT, "Laterality")             | 1   | U        |           | \$MeasurementGroupLaterality = (G-A101, SRT, "Left") or (G-A100, SRT, "Right")                           |
| 3 | >  | HAS CONCEPT MOD | CODE      | EV (G-A1F8, SRT, "Topographical Modifier") | 1   | U        |           | DCID (12116) Vessel Segment Modifiers                                                                    |
| 4 | >  | HAS CONCEPT MOD | CODE      | EV (125101, DCM, "Vessel Branch")          | 1   | U        |           | DCID (12117) Vessel Branch Modifiers                                                                     |
| 5 | >  | CONTAINS        | INCLUDE   | DTID (300) Measurement                     | 1-n | M        |           | See Section 9.2.16.1 Liver Transplant or Section 9.2.16.2 Kidney Transplant for the list of measurements |

## 9.2.16.1 Liver Transplant

| Label                                | Code Meaning (Coding Scheme Designator, Code Value)                                       | Modifiers |
|--------------------------------------|-------------------------------------------------------------------------------------------|-----------|
| <b>Liver Transplant</b>              | Procedure reported: Transplantation of liver (SRT, P1-5BD10)                              |           |
| Portal V Anast/Pre-Anast [Abd-LTr D] | Portal Vein Anastomosis/Pre-Anastomosis Peak Velocity Ratio (99SIEMENS, PortlVnVmaxRatio) |           |

| Label                        | Code Meaning (Coding Scheme Designator, Code Value)                                                          | Modifiers |
|------------------------------|--------------------------------------------------------------------------------------------------------------|-----------|
| CBD-Extrahepatic [Abd-LTr]   | Location: Extrahepatic duct structure (SRT, T-64000)<br>[ Diam ]                                             |           |
| CBD-Intrahepatic [Abd-LTr]   | Location: Intrahepatic bile duct (SRT, T-62111)<br>[ Diam ]                                                  |           |
| Portal V Anast [Abd-LTr]     | Location: Liver Transplant Anastomosis Site Portal Vein from graft (LN, 44775-5)<br>[ Diam, PI, Vmin, Vmax ] |           |
| Portal V Pre-Anast [Abd-LTr] | Location: Portal Vein (SRT, T-48810)<br>[ Diam, PI, Vmin, Vmax ]                                             |           |

### 9.2.16.2 Kidney Transplant

| Label                                                   | Code Meaning (Coding Scheme Designator, Code Value)                                                               | Modifiers                                              |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <b>Kidney Transplant</b>                                | Procedure reported: Transplant of kidney (SRT, P1-71D00)                                                          |                                                        |
| L Arterial Anastomosis<br>or L Arterial Anast [Abd-RTr] | Location: External Iliac Artery (SRT, T-46910)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Laterality: Left (SRT, G-A101)                         |
| R Arterial Anastomosis<br>or R Arterial Anast [Abd-RTr] | Location: External Iliac Artery (SRT, T-46910)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ] | Laterality: Right (SRT, G-A100)                        |
| L Renal V Anastomosis<br>[Abd-RTr]                      | Location: External Iliac Vein (SRT, T-48930)<br>[ Diam, Vmax ]                                                    | Laterality: Left (SRT, G-A101)                         |
| R Renal V Anastomosis<br>[Abd-RTr]                      | Location: External Iliac Vein (SRT, T-48930)<br>[ Diam, Vmax ]                                                    | Laterality: Right (SRT, G-A100)                        |
| L Transplant Renal A<br>or L Tr Renal A [Abd-RTr]       | Location: Renal Artery (SRT, T-46600)                                                                             | Laterality: Left (SRT, G-A101)                         |
| L Dist Transplant Renal A                               | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                                   | Topographical modifier: Distal (SRT, G-A119)           |
| L Mid Transplant Renal A                                | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                                   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| L Prox Transplant Renal A                               | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                                   | Topographical modifier: Proximal (SRT, G-A118)         |
| R Transplant Renal A<br>or R Tr Renal A [Abd-RTr]       | Location: Renal Artery (SRT, T-46600)                                                                             | Laterality: Right (SRT, G-A100)                        |
| R Dist Transplant Renal A                               | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                                   | Topographical modifier: Distal (SRT, G-A119)           |
| R Mid Transplant Renal A                                | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                                   | Topographical modifier: Mid-longitudinal (SRT, G-A188) |
| R Prox Transplant Renal A                               | [ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx, TAMn, VolF ]                                                   | Topographical modifier: Proximal (SRT, G-A118)         |

| Label                                         | Code Meaning (Coding Scheme Designator, Code Value)                                              | Modifiers                                                                |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| L Transplant Renal V [Abd-RTr]                | Location: Renal Vein (SRT, T-48740)                                                              | Laterality: Left (SRT, G-A101)                                           |
| L Dist Transplant Renal V                     | [ Diam, Vmax ]                                                                                   | Topographical modifier: Distal (SRT, G-A119)                             |
| L Mid Transplant Renal V                      | [ Diam, Vmax ]                                                                                   | Topographical modifier: Mid-longitudinal (SRT, G-A188)                   |
| L Prox Transplant Renal V                     | [ Diam, Vmax ]                                                                                   | Topographical modifier: Proximal (SRT, G-A118)                           |
| R Transplant Renal V [Abd-RTr]                | Location: Renal Vein (SRT, T-48740)                                                              | Laterality: Right (SRT, G-A100)                                          |
| R Dist Transplant Renal V                     | [ Diam, Vmax ]                                                                                   | Topographical modifier: Distal (SRT, G-A119)                             |
| R Mid Transplant Renal V                      | [ Diam, Vmax ]                                                                                   | Topographical modifier: Mid-longitudinal (SRT, G-A188)                   |
| R Prox Transplant Renal V                     | [ Diam, Vmax ]                                                                                   | Topographical modifier: Proximal (SRT, G-A118)                           |
| L Inf Segmental A<br>or L Inf Seg A [Abd-RTr] | Location: Segmental Artery (SRT, T-46659)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx ] | Laterality: Left (SRT, G-A101)<br>Vessel Branch: Inferior (SRT, G-A115)  |
| L Med Segmental A<br>or L Med Seg A [Abd-RTr] | Location: Segmental Artery (SRT, T-46659)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx ] | Laterality: Left (SRT, G-A101)<br>Vessel Branch: Medial (SRT, G-A109)    |
| L Sup Segmental A<br>or L Sup Seg A [Abd-RTr] | Location: Segmental Artery (SRT, T-46659)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx ] | Laterality: Left (SRT, G-A101)<br>Vessel Branch: Superior (SRT, G-A116)  |
| R Inf Segmental A<br>or R Inf Seg A [Abd-RTr] | Location: Segmental Artery (SRT, T-46659)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx ] | Laterality: Right (SRT, G-A100)<br>Vessel Branch: Inferior (SRT, G-A115) |
| R Med Segmental A<br>or R Med Seg A [Abd-RTr] | Location: Segmental Artery (SRT, T-46659)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx ] | Laterality: Right (SRT, G-A100)<br>Vessel Branch: Medial (SRT, G-A109)   |
| R Sup Segmental A<br>or R Sup Seg A [Abd-RTr] | Location: Segmental Artery (SRT, T-46659)<br>[ InD, OutD, StenD, AT, ED, PI, PS, RI, S/D, TAMx ] | Laterality: Right (SRT, G-A100)<br>Vessel Branch: Superior (SRT, G-A116) |
| L Transplant Kidney                           | Location: Kidney (SRT, T-71000)                                                                  | Laterality: Left (SRT, G-A101)                                           |
| L Transplant Kidney: Length<br>[Abd-RTr 2D]   | Length (SRT, G-A22A)                                                                             |                                                                          |
| L Transplant Kidney: Length<br>[Abd-RTr 2D]   | Length (SRT, G-A22A)                                                                             | Derivation: Mean (SRT, R-00317)                                          |
| R Transplant Kidney                           | Location: Kidney (SRT, T-71000)                                                                  | Laterality: Right (SRT, G-A100)                                          |
| R Transplant Kidney: Length<br>[Abd-RTr 2D]   | Length (SRT, G-A22A)                                                                             |                                                                          |
| R Transplant Kidney: Length<br>[Abd-RTr 2D]   | Length (SRT, G-A22A)                                                                             | Derivation: Mean (SRT, R-00317)                                          |

### 9.3 Appendix C: Supported Units in Structured Reports

The following UCUM units, Version 1.4, are used in the structured reports of the ACUSON SC2000 system.

| Label                           | Code Value | Code Meaning                        |
|---------------------------------|------------|-------------------------------------|
| %                               | %          | percent                             |
| 1/s                             | 1/s        | 1/s                                 |
| bpm                             | bpm        | beats per minute                    |
| circs/s                         | circs/s    | circles per second                  |
| cm                              | cm         | centimeters                         |
| cm/s                            | cm/s       | centimeters per second              |
| cm <sup>2</sup>                 | cm2        | square centimeters                  |
| cm <sup>2</sup> /m <sup>2</sup> | cm2/m2     | square centimeters per square meter |
| deg                             | deg        | degree of angle                     |
| deg/s                           | deg/s      | degrees per second                  |
| g                               | g          | grams                               |
| g/cm                            | g/cm       | grams per centimeter                |
| g/cm <sup>2</sup>               | g/cm2      | grams per square centimeter         |
| g/m <sup>2</sup>                | g/m2       | grams per square meter              |
| l/min                           | l/min      | liters per minute                   |
| l/min/m <sup>2</sup>            | l/min/m2   | liters per minute per square meter  |
| m                               | m          | meters                              |
| m/s                             | m/s        | meters per second                   |
| m/s <sup>2</sup>                | m/s2       | meters per square second            |
| m <sup>2</sup>                  | m2         | square meters                       |
| ml                              | ml         | milliliters                         |
| ml*%                            | ml*%       | milliliters percent                 |
| ml/m <sup>2</sup>               | ml/m2      | milliliters per square meter        |
| ml/s                            | ml/m2      | milliliters per second              |
| mm                              | mm         | millimeters                         |
| mm <sup>2</sup>                 | mm2        | square millimeters                  |
| mmHg                            | mm[Hg]     | millimeters of mercury column       |

| Label      | Code Value | Code Meaning                      |
|------------|------------|-----------------------------------|
| mmHg/s     | mm[Hg]/s   | millimeters of mercury per second |
| msec       | ms         | milliseconds                      |
| [unitless] | 1          | no units                          |
| years      | a          | years                             |
| days       | d          | days                              |
| weeks      | wk         | weeks                             |
| months     | mo         | months                            |