

# Technical Publications

Direction DOC0913087

*Revision 1.0*

## **VOLUSON<sup>®</sup> Voluson S6/S8 11.x.x DICOM CONFORMANCE STATEMENT**

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### REVISION HISTORY

<b>Revision</b>	<b>Date</b>	<b>Description</b>
1	2011/02/07	Release for Voluson S6/S8 M3

## CONFORMANCE STATEMENT OVERVIEW

The VOLUSON S6/S8 is a self-contained networked computer system used for acquiring ultrasound diagnostic medical images. The system implements the necessary DICOM services to download work list from an information system, save acquired US images to a network storage device or media, print to a networked hardcopy device, query and move US images from a networked storage and inform the information system about the work actually done. The system conforms to the DICOM standard to allow the sharing of medical information with other digital imaging systems.

Table A.1 provides an overview of the network services supported by Voluson S6/S8.

**Table A.1 Network Services**

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
<b>Transfer</b>		
Verification	Yes	Yes
US Image Storage	Yes	Yes
US Multi-frame Storage	Yes	Yes
Enhanced US Volume Storage	Yes	Yes
Secondary Capture Image Storage	Yes	Yes
<b>Query/Retrieve</b>		
Study Root Q/R – FIND	Yes	No
Study Root Q/R – MOVE	Yes	No
<b>Print Management</b>		
Basic Grayscale Print Management	Yes	No
Basic Color Print Management	Yes	No
<b>Workflow Management</b>		
Modality Worklist	Yes	No
Modality Performed Procedure	Yes	No
Storage Commitment Push Model	Yes	No
<b>Notes, Reports, Measurements Transfer</b>		
Comprehensive SR Storage	Yes	No

Table A.2 provides an overview of the Media Storage Application Profile supported by VOLUSON S6/S8.

**Table A.2 Media Services**

Media Storage Augmented Profile	Write Files (FSC or FSU)	Read Files (FSR)
<b>Compact Disk - R</b>		
AUG-US-SC-SF-CDR, AUG-US-SC-MF-CDR	Yes	No
<b>DVD</b>		
AUG-US-SC-SF-DVD, AUG-US-SC-MF-DVD	Yes	No

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# 1. INTRODUCTION

## 1.1 OVERVIEW

This DICOM Conformance Statement is divided into Sections as described below:

**Section 1 (Introduction)**, which describes the overall structure, intent, and references for this Conformance Statement.

**Section 2 (Network Conformance Statement)**, which specifies the GEMS equipment compliance to the DICOM requirements for the implementation of Networking features.

**Section 3 (Media Storage Conformance Statement)**, which specifies the GEMS equipment compliance to the DICOM requirements for the implementation of Media Storage features.

**Section 4 (Ultrasound Information Object Implementation)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of an Ultrasound Medicine Information Object.

**Section 5 (Ultrasound Multi-Frame Information Object Implementation)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of an Ultrasound Multi-Frame Information.

**Section 6 (SC Object Implementation)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of a Secondary Capture Information Object.

**Section 7 (SR Object Implementation)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of a Comprehensive Structured Reporting Information Object.

**Section 8 (Basic Directory Information Object Implementation)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of a Basic Directory Information Object.

**Section 9 (Modality Worklist Information Model)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of the Modality Worklist service.

**Section 10 (Modality Performed Procedure Step SOP Class Definition)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of Modality Performed Procedure Step Service.

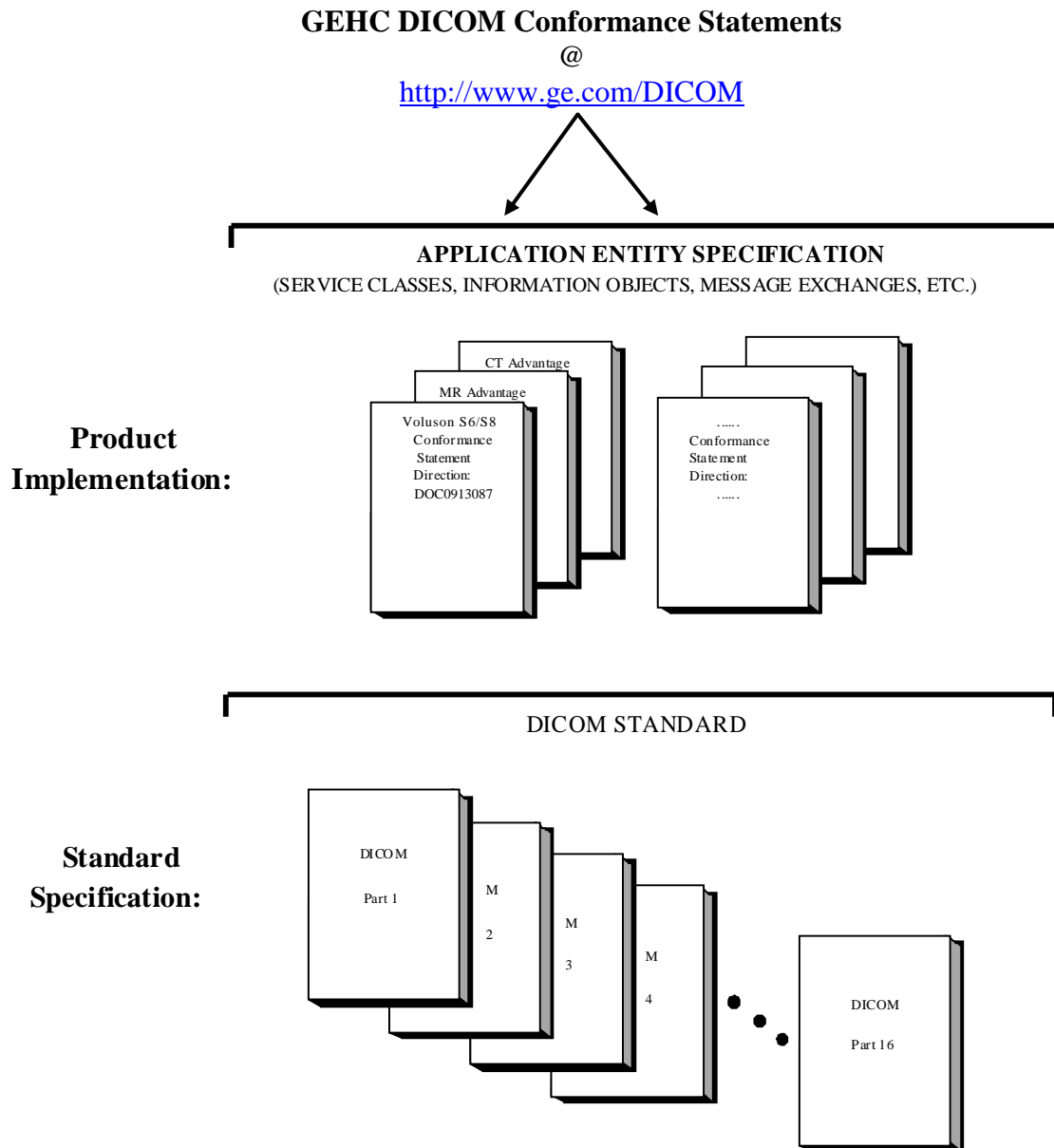
**Section 11 (Storage Commitment Push Model SOP Class Definition)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of the Storage Commitment Push Model Service.

**Section 12 (Basic Print Meta SOP Class Information Object Implementation)**, which specifies the GEMS equipment compliance to DICOM requirements for the implementation of Basic Print Meta SOP Classes (Gray and Color).

**Section 13 (Study Root Query/Retrieve Information Model)**, which specifies the GEMS equipment compliance to DICOM requirements for the Study Root Query/Retrieve Information Model.

## 1.2 OVERALL DICOM CONFORMANCE STATEMENT DOCUMENT STRUCTURE

The Documentation Structure of the GEHC Conformance Statements and their relationship with the DICOM Conformance Statements is shown in the Illustration below.



This document specifies the DICOM implementation. It is entitled:

*VOLUSON S6/S8 version 11.x.x*  
*Conformance Statement for DICOM*  
*DOC0913087*

This DICOM Conformance Statement documents the DICOM Conformance Statement and Technical Specification required to inter-operate with the VOLUSON S6/S8 network interface.

The VOLUSON S6/S8 Conformance Statement, contained in this document, also specifies the Lower Layer communications, which it supports (e.g. TCP/IP). However, the Technical Specifications are defined in the DICOM Part 8 standard.

For more information regarding DICOM, copies of the Standard may be obtained on the Internet at <http://medical.nema.org>. Comments on the Standard may be addressed to:

DICOM Secretariat  
NEMA  
1300 N. 17<sup>th</sup> Street, Suite 1752  
Rosslyn, VA 22209  
USA  
Phone: +1.703.841.3200

### **1.3 INTENDED AUDIENCE**

The reader of this document is concerned with software design and/or system integration issues. It is assumed that the reader of this document is familiar with the DICOM Standard and with the terminology and concepts, which are used in this standard.

### **1.4 SCOPE AND FIELD OF APPLICATION**

It is the intent of this document, to provide an unambiguous specification for GE Healthcare implementations. This specification, called a Conformance Statement, includes a DICOM Conformance Statement and is necessary to ensure proper processing and interpretation of GE Healthcare medical data exchanged using DICOM. The VOLUSON S6/S8 Conformance Statements are available to the public.

Included in this DICOM Conformance Statement are the Module Definitions, which define all data elements, used by the VOLUSON S6/S8 implementation. If the user encounters unspecified private data elements while parsing a VOLUSON S6/S8 Data Set, the user is well advised to ignore those data elements (per the DICOM standard). Unspecified private data element information is subject to change without notice. If, however, the device is acting as a "full fidelity storage device", it should retain and re-transmit all of the private data elements which are sent by the VOLUSON S6/S8.

### **1.5 IMPORTANT REMARKS**

The use of these DICOM Conformance Statements, in conjunction with the DICOM Standards, is intended to facilitate communication with the VOLUSON S6/S8 equipment. However, **by itself, it is not sufficient to ensure that inter-operation will be successful.** The **user (or user's agent)** needs to proceed with caution and address at least four issues:

- **Integration** - The integration of any device into an overall system of interconnected devices goes beyond the scope of standards (DICOM v3.0), and of this introduction and associated DICOM Conformance Statements when interoperability with non-GE equipment is desired. The responsibility to analyze the applications

requirements and to design a solution that integrates GE imaging equipment with non-GE systems is the **user's** responsibility and should not be underestimated. The **user** is strongly advised to ensure that such an integration analysis is correctly performed.

- **Validation** - Testing the complete range of possible interactions between any GE device and non-GE devices, before the connection is declared operational, should not be overlooked. Therefore, the **user** should ensure that any non-GE provider accepts full responsibility for all validation required for their connection with GE devices. This includes the accuracy of the image data once it has crossed the interface between the GE imaging equipment and the non-GE device and the stability of the image data for the intended applications.  
Such a validation is required before any clinical use (diagnosis and/or treatment) is performed. It applies when images acquired on GE imaging equipment are processed/displayed on a non-GE device, as well as when images acquired on non-GE equipment is processed/displayed on a GE console or workstation.
- **Future Evolution** - GE understands that the DICOM Standard will evolve to meet the user's growing requirements. GE is actively involved in the development of the DICOM Standard. DICOM will incorporate new features and technologies and GE may follow the evolution of the Standard. The GEHC protocol is based on DICOM as specified in each DICOM Conformance Statement. Evolution of the Standard may require changes to devices which have implemented DICOM. In addition, GE reserves the right to discontinue or make changes to the support of communications features (on its products) described by these DICOM Conformance Statements. The user should ensure that any non-GE provider, which connects with GE devices, also plans for the future evolution of the DICOM Standard. Failures to do so will likely result in the loss of function and/or connectivity as the DICOM Standard changes and GE Products are enhanced to support these changes.
- **Interaction** - It is the sole responsibility of the non-GE provider to ensure that communication with the interfaced equipment does not cause degradation of GE imaging equipment performance and/or function.

## 1.6 REFERENCES

NEMA PS3 Digital Imaging and Communications in Medicine (DICOM) Standard, available free at <http://medical.nema.org/>

## 1.7 DEFINITIONS

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

**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).

**Information Object Definition (IOD)** – the specified set of *Attributes* that comprise a type of data object; does not represent a specific instance of the data object, but rather a class of similar data objects that have the same properties. The *Attributes* may be specified as Mandatory (Type 1), Required but possibly unknown (Type 2), or Optional (Type 3), and there may be conditions associated with the use of an Attribute (Types 1C and 2C). Examples: MR Image IOD, CT Image IOD, Print Job IOD.

**Joint Photographic Experts Group (JPEG)** – a set of standardized image compression techniques, available for use by DICOM applications.

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

**Module** – a set of *Attributes* within an *Information Object Definition* that are logically related to each other. Example: Patient Module includes 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.

**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. Devices must specify the maximum size packet they can receive for DICOM messages.

**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)** – 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)** – 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.

**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.

### **1.8 SYMBOLS AND ABBREVIATIONS**

A list of symbols and abbreviations, which is applicable to all GEMS Conformance Statements, is included in the *Introduction to the Integrated DICOM/Network v3.0 (ID/Net v3.0) Conformance Statement, Direction: 2118780*. Additional abbreviations and terms used in this Conformance Statement document are listed below:

<b><u>TERM</u></b>	<b><u>DESCRIPTION</u></b>
AE	Application Entity
CD-R	Compact Disk Recordable
DVD	Digital Video Disc
CT	Computed Tomography
DICOM	Digital Imaging and Communications in Medicine
FSC	File-Set Creator
IOD	Information Object Definition
ISO	International Organization for Standards
JPEG	Joint Photographic Experts Group
LUT	Look-up Table
MPPS	Modality Performed Procedure Step
MR	Magnetic Resonance Imaging
O	Optional (Key Attribute)
PDU	Protocol Data Unit
R	Required (Key Attribute)
SC	Secondary Capture
SCP	Service Class Provider
SCU	Service Class User
SOP	Service-Object Pair
SR	Structured Reporting
TCP/IP	Transmission Control Protocol/Internet Protocol
U	Unique (Key Attribute)
US	Ultrasound

VR            Value Representation

## **2. NETWORK CONFORMANCE STATEMENT**

### **2.1 INTRODUCTION**

This section of the DICOM Conformance Statement specifies the compliance to DICOM conformance requirements for the relevant Networking features for VOLUSON S6/S8 version R11.x.x. Note that the format of this section strictly follows the format defined in DICOM Standard PS 3.2 (Conformance). Please refer to that part of the standard while reading this section.

VOLUSON S6/S8 is an Ultrasound scanner running on a commercial computer. It allows for the following DICOM functionality:

- Sending and receiving Echo messages to and from DICOM Verification SCP and client.
- Exporting DICOM images and results to a DICOM SCP.
- Querying and retrieving DICOM Modality Worklist from a Worklist SCP.
- Sending start and end of examination to a DICOM Modality Performed Procedure Step SCP.
- Sending storage commitment requests to and receiving replies from a DICOM Storage Commitment SCP.
- Printing images to a DICOM Printer.
- Querying and retrieving for examinations from a DICOM Query/Retrieve SCP.

### **2.2 IMPLEMENTATION MODEL**

#### **2.2.1 Application Data Flow Diagram**

The Basic and Specific Application models for this device are shown in Figure 1:

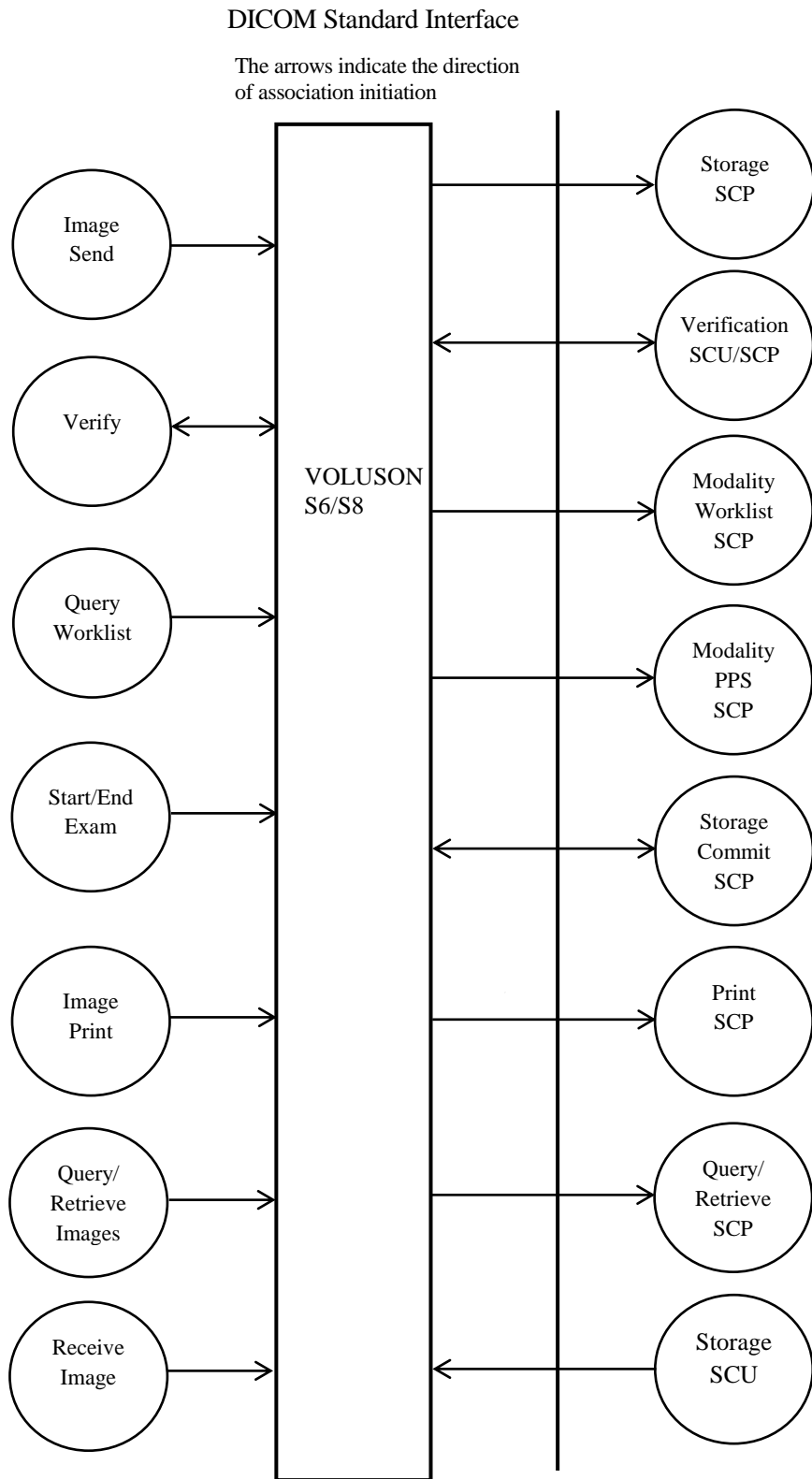


Figure 1: Application Data Flow Diagram

There are seven local real-world activities that occur in VOLUSON S6/S8- **Image Send, Verify, Query Worklist, Start/End Exam, Print Image, Query/Retrieve and Receive Image.**

- **Image Send** spools images or SR documents into a send queue. The queue manager then initiates a connection with the DICOM SCP and transmits the images and SR documents to the DICOM SCP. If Storage Commitment is configured, a commitment request will be sent for the images, SR documents and results.
- **Verify** initiates a connection with the DICOM SCP, posts a Verification request and closes the connection. It also responds to incoming Verification requests.
- **Query Worklist** initiates a connection with the DICOM SCP, performs a query and retrieves the matching entries to the product.
- **Start/End exam:** If Modality Performed Procedure Step is configured N-CREATE and N-SET messages will be sent for the exam.
- **Print Image** will send images to a DICOM Print SCP. It uses the same spooling mechanism as Image Send.
- **Query/Retrieve** will send queries to a DICOM Query/Retrieve SCP and retrieve examinations/images.
- **Receive Image:** The modality will accept requests for DICOM image storage and store the received images into a local database.

### 2.2.2 Functional Definition of AE's

Application Entity VOLUSON S6/S8 supports the following functions:

- Initiates a DICOM association to send images and SR documents.
- Transmits DICOM images and SR documents to the DICOM Storage SCP.
- Initiates a DICOM verification to assist in network diagnostics.
- Responds to DICOM verification requests from other devices.
- Initiates a DICOM worklist query to receive worklist information.
- Initiates a DICOM association to notify start of examination.
- Initiates a DICOM association to notify end of examination.
- Initiates a DICOM association to request storage commitment of images and SR documents.
- Responds to replies from DICOM Storage SCPs, for storage commitment requests of images and SR documents sent by VOLUSON S6/S8.
- Initiates a DICOM association to print images.
- Initiates a DICOM association to query for and retrieve images.
- Responds to Image Storage requests from Storage SCU (as part of examination retrieve)

### 2.2.3 Sequencing of Real-World Activities

Not applicable.

**2.3 AE SPECIFICATIONS**

**2.3.1 VOLUSON S6/S8 AE Specification**

This Application Entity provides Standard Conformance to the following DICOM SOP Classes as an SCU:

Table 2.3-1: SCU SOP Classes

SOP Class Name	SOP Class UID
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1
Enhanced Ultrasound Volume Storage	1.2.840.10008.5.1.4.1.1.6.2
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Verification SOP Class	1.2.840.10008.1.1
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18
Study Root Query/Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1
Study Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2
Comprehensive Structured Report Storage	1.2.840.10008.5.1.4.1.1.88.33

This Application Entity provides Standard Conformance to the following DICOM SOP Classes as an SCP:

Table 2.3-2: SCP SOP Classes

SOP Class Name	SOP Class UID
Verification SOP Class	1.2.840.10008.1.1
Ultrasound Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1
Enhanced Ultrasound Volume Storage	1.2.840.10008.5.1.4.1.1.6.2
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7

**2.3.1.1 Association Establishment Policies**

**2.3.1.1.1 General**

The DICOM Application Context Name (ACN), which is always proposed, is:

Table 2.3-3: Application Context Name

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

The Maximum Length PDU negotiation is included in all association establishment requests. The maximum length PDU for an association initiated by the equipment is:

Table 2.3-4: PDU Size

<b>Maximum Length PDU</b>	<b>28872 bytes</b>
---------------------------	--------------------

The maximum length PDU is a fixed number - not configurable.

The SOP Class Extended Negotiation is not supported.

The user information Items sent by this product are:

- Maximum PDU Length
- Implementation UID
- Implementation Version Name

**2.3.1.1.2 Number of Associations and Error Processing**

The VOLUSON S6/S8 AE will initiate multiple DICOM associations. The maximum numbers of associations are based on the connectivity service configuration.

The default connection time out value is 45 second. User can configurable this value from 30 to 120 second. There is no response during the time out value, the request service is treated failure and forced to terminate and cancel. This Error processing provide common through the user configuration interface and effect to all requested service. Also, any unknown status values received in response to any request will be treated as failed.

**2.3.1.1.3 Asynchronous Nature**

Asynchronous mode is not supported. All operations will be performed synchronously.

**2.3.1.1.4 Implementation Identifying Information**

The Implementation UID for this DICOM Implementation is:

<b>VOLUSON S6/S8 Implementation UID</b>	<b>1.2.276.0.26.20010718.240</b>
---	----------------------------------

The Implementation Version Name for this DICOM Implementation is:

<b>VOLUSON S6/S8 Implementation Version Name</b>	<b>KRETZDICOM_240</b>
--	-----------------------

Note: The Implementation Version Name may change in the future without modification of this document.

**2.3.1.2 Association Initiation Policy**

The VOLUSON S6/S8 AE attempts to establish a new association with a remote device due to six Real-World Activities:

- Image Send initiated by the operator for images and SR documents and sending requests for Storage Commitment.
- Verification, which verifies application level communication between peer DICOM AE's for service purposes.
- Worklist initiated by the operator for receiving worklist information.



- Start/End Exam sending messages to Modality Performed Procedure Step.
- Print initiated by the operator for a specific image or group of images.
- Query/Retrieve initiated by the operator for querying and receiving images.

**2.3.1.2.1 Real-World Activity A ('Image Send' Operation)**

**2.3.1.2.1.1 Associated Real-World Activity**

Upon a request by the operator (manual or automatic), images or SR documents will be sent a DICOM Storage SCP.

**2.3.1.2.1.2 Proposed Presentation Context Tables**

The Proposed Presentation Context Table depends on compression according to the following tables:

Table 2.3-5: Presentation Context Table

<b>Presentation Context Table - Proposed</b>					
<b>Abstract Syntax</b>		<b>Transfer Syntax Name</b>		<b>Role</b>	<b>Ext Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None
Ultrasound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None
Ultrasound Multi-frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.3	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None
<b>Presentation Context Table for Compression set to JPEG</b>					
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	JPEG Baseline(Lossy) JPEG Lossless Non Hierarchical (Process14)	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	JPEG Baseline(Lossy) JPEG Lossless Non Hierarchical (Process14)	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70	SCU	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70	SCU	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	JPEG Baseline(Lossy) JPEG Lossless Non Hierarchical (Process14)	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70	SCU	None
Ultrasound Multi-frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.3	JPEG Baseline coding Process 1	1.2.840.10008.1.2.4.50	SCU	None
<b>Presentation Context Table for Structured Reports</b>					
Comprehensive Structured Report	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None

The operation also sends a Storage Commitment Request, with the following proposed presentation context. The result from the SCP is expected on another association for the Storage Commitment result.

Table 2.3-6: Presentation Context Table - Proposed - Storage Commitment

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None

**2.3.1.2.1.2.1 SOP Specific DICOM Conformance Statement for all Storage SOP Classes**

For these SOP classes (Storage and Storage Commitment), all status codes with status Refused or Error are treated as failures and terminate the association and operation. On a failure, the request will be put in a holding queue for the user to manually retry the request. All status codes with status Warning or Success are treated as successes. If the storage SCP does not support service, Voluson S6/S8 issues an “association was aborted” message and does not send image and close the connection in negotiation step.

**2.3.1.2.2 Real-World Activity B (‘Verify’ Operation)**

**2.3.1.2.2.1 Associated Real-World Activity**

The user may initiate a DICOM Verification Request in the Config screen. Associations will be released upon the receipt of each C-ECHO confirmation. In the event that the SCP does not respond, the operation will time out and the VOLUSON S6/S8 close the association and inform the user.

**2.3.1.2.2.2 Proposed Presentation Context Table**

Table 2.3-7: Presentation Context Table - Proposed

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None

**2.3.1.2.3 Real-World Activity C (‘Query Worklist’ Operation)**

**2.3.1.2.3.1 Associated Real-World Activity**

The user may initiate a DICOM Worklist Query in Search screen, which will send a C-FIND-RQ to the Worklist SCP. Associations will be released upon the receipt of C-FIND-RSP confirmation.

**2.3.1.2.3.2 Proposed Presentation Context Tables**

Table 2.3-8: Presentation Context Table - Proposed

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None

**2.3.1.2.3.2.1 SOP Specific DICOM Conformance Statement for Worklist SOP Classes**

The VOLUSON S6/S8 includes matching keys in the Modality Worklist queries as described in Section 9.5.

All status codes with status Refused or Error are treated as failures and terminate the association and operation. On a failure, the user will be informed and the last successful query will be used as Worklist. All status codes with status Warning or Success are treated as successes. In the event of exceed time value while query service, VOLUSON S6/S8 terminate and cancel service automatically.

Service Status	Status Code	Further Meaning	Application Behaviour When receiving Status Codes	Related Fields Processed if received
Refused	A700	Out of resources	Terminate the association and operation	(0000,0902)
	0122	SOP Class not Supported	Terminate the association and operation	(0000,0902)
Failed	A900	Identifier does not match SOP Class	Terminate the association and operation	(0000, 0901) (0000, 0902)
	Cxxx	Unable to process	Terminate the association and operation	(0000,0901) (0000,0902)
Cancel	FE00	Matching terminated due to exceed max retries and timeout.	Terminate the association and operation	(0000, 0901) (0000, 0902)
Success	0000	Matching is complete – No final identifier is supplied		None
Pending	FF00	Matches are continuing – Current Match is supplied and any Optional Keys were supported in the same manner	Receiving process of the matches continues.	Identifier
	FF01	Matches are continuing – Warning that one or more Optional Keys were not supported for existence for this Identifier	Receiving process of the matches continues without any warnings or errors	Identifier

**2.3.1.2.4 Real-World Activity D ('Start/End Exam' Operation)**

**2.3.1.2.4.1 Associated Real-World Activity**

The Modality Performed Procedure Step messages are sent when the exam is started by the user after a worklist entry has been selected or patient data have been entered on the patient data entry screen. At this time the N-CREATE message is sent. The N-SET will be sent when 'End Exam' is being pressed. The status is set to COMPLETED by default, however the operator may choose to manually set the status to DISCONTINUED and select the discontinuation reason from a predefined list.

**2.3.1.2.4.2 Proposed Presentation Context Table**

Table 2.3-9: Presentation Context Table – Proposed

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None

**2.3.1.2.4.2.1 SOP Specific DICOM Conformance Statement for Modality Performed Procedure Step Class**

The VOLUSON S6/S8 includes Attributes in the Modality Performed Procedure Step N-CREATE as described in Section 10.2.1.

The VOLUSON S6/S8 includes Attributes in the Modality Performed Procedure Step N-SET as described in Section 10.2.1. The mapping from Worklist attributes is described in Section 9.5.

VOLUSON S6/S8 sends N-SET after the exam is ended. The N-SET will include all acquired images SOP Instance UIDs and the status of COMPLETED or DISCONTINUED.

For this SOP class, all status codes with status Refused or Error are treated as failures and terminate the association and operation. All status codes with status Warning or Success are treated as successes.

**2.3.1.2.5 Real-World Activity E ('Image Print' Operation)**

**2.3.1.2.5.1 Associated Real-World Activity**

Upon a request by the operator, print jobs will be sent to a DICOM Print SCP. The jobs are entered into a send queue and processed by the spool manager. If an error occurs during the transmission the operation may be retried manually. The number of automatic entries is configurable. The maximum number of retries is configurable.

**2.3.1.2.5.2 Proposed Presentation Context Tables**

Table 2.3-10: Presentation Context Table – Proposed

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Implicit VR Little Endian	1.2.840.10008.1.2		

**2.3.1.2.5.2.1 SOP Specific DICOM Conformance Statement for all Print Management SOP Classes**

The VOLUSON S6/S8 treats all status codes with status Refused or Error are treated as failures and the spool manager retries the operation. After the configurable number of retries has been exceeded the spooler's job status is set to FAILED and the print job may be retired manually. Please refer to section 12 Print Management SOP Class Definition for more details about printing implementation.

**2.3.1.2.6 Real-World Activity F ('Query/Retrieve Images' Operation)**

**2.3.1.2.6.1 Associated Real-World Activity**

The user may initiate a DICOM Exam Query in Search screen, which will send a C-FIND-RQ to the Query/Retrieve SCP. Associations will be released upon the receipt of C-FIND-RSP confirmation.

The user may then select an examination to be retrieved, using the C-MOVE-RQ command to the Query/Retrieve SCP. The result from the SCP is expected on another association for the retrieved examinations.

**2.3.1.2.6.2 Proposed Presentation Context Tables**

Table 2.3-11: Presentation Context Table - Proposed

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Study Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Implicit VR Little Endian	1.2.840.10008.1.2		

**2.3.1.2.6.2.1 SOP Specific DICOM Conformance Statement for Study Root Query/Retrieve SOP Classes**

Only a single information model, Study Root is supported.

All queries are initiated at the highest level of the information model (the STUDY level), and then for each response received, recursively repeated at the next lower level (SERIES). The user then can select one "Exam" (Series) and retrieve it. Retrieving is being done at the SERIES level.

CANCEL requests can be issued during the queries via graphical user interface.

The VOLUSON S6/S8 treats all status codes with status Refused or Error as failures and terminates the association and operation. All status codes with status Warning or Success are treated as success.

Table 2.3-12: Study Root Request Identifier for Query

Attribute Name	Tag	Types of Matching	Filtering is supported
STUDY Level			
Study Date	(0008,0020)	R	
Study Time	(0008,0030)	R	Yes
Referring Physicians Name	(0008,0090)	S,*, U	Yes
Accession Number	(0008,0050)	S,*, U	
Patient Name	(0010,0010)	*, U	Yes
Patient ID	(0010,0020)	*, U	Yes
Patient Birth Date	(0010,0030)	R	Yes
Patient Sex	(0010,0040)	S,*,U	Yes
Study Instance UID	(0020,000D)	UNIQUE	
Number of Patient Related Studies	(0020,1200)	U	
Number of Patient Related Series	(0020,1202)	U	
SERIES Level			
Modality	(0008,0060)	S	always "US"
Series Date	(0008,0021)	R	
Series Time	(0008,0031)	R	
Series Instance UID	(0020,000E)	UNIQUE	
Number of Series Related Instances	(0020,1209)	U	

**Types of Matching**

- Single Value Matching (S)
- Universal Matching (U)
- Wildcard Matching (\*)
- Date, Time Range Matching (R)

The types of Matching supported by the C-FIND SCU are: `S' indicates the identifier attribute uses Single Value Matching, an `R' indicates Range Matching, a "\*" indicates wildcard matching, a `U' indicates Universal Matching, and `UNIQUE' indicates that this is the Unique Key for 16 that query level, in which case Universal Matching or Single Value Matching is used depending on the query level.

"Filtering is supported" means that matching strings can be controlled from the Search screen.

**2.3.1.2.6.2.2 SOP Specific DICOM Conformance Statement for Study Root Query/Retrieve Information SOP Classes**

The VOLUSON S6/S8 all status codes with status Refused or Error are treated as failures and terminate the association and operation. All status codes with status Warning or Success are treated as successes.

**2.3.1.3 Association Acceptance Policy**

The VOLUSON S6/S8 AE accepts an association when it receives a Verification Request from another network device, an

image storage request from an SCU or a Storage Commitment result from a Storage Commitment SCP.

**2.3.1.3.1 Real-World Activity A – ('Verify' operation)**

**2.3.1.3.1.1 Associated Real-World Activity**

An incoming Verification Request will cause the AE to accept the association and respond with a Verification Response.

**2.3.1.3.1.2 Accepted Presentation Context Table**

Table 2.3-13: Presentation Context Table - Accepted

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCP	None

**2.3.1.3.1.2.1 SOP Specific DICOM Conformance Statement for Verify SOP Class**

The AE provides standard conformance to the Verification SOP Class as an SCP. The port number used is configured on Config screen, default is 104.

**2.3.1.3.1.3 Presentation Context Acceptance Criterion**

No criterion.

**2.3.1.3.1.4 Transfer Syntax Selection Policies**

The selected transfer syntax is based on the proposed transfer syntax list. The priority order is Explicit VR Little Endian, Explicit VR Big Endian and Implicit VR Little Endian.

**2.3.1.3.2 Real-World Activity B ('End Exam' Operation)**

**2.3.1.3.2.1 Associated Real-World Activity**

VOLUSON S6/S8 will only listen for an N-EVENT-REPORT (Storage Commitment Result) from a Storage Commitment SCP in a new association.

**2.3.1.3.2.2 Accepted Presentation Context Table**

Table 2.3-14: Presentation Context Table - Accepted - Storage Commitment

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
StorageCommitment Push Model SOP Class	1.2.840.10008.1.20.1	Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCU	None

**2.3.1.3.2.2.1 SOP Specific DICOM Conformance Statement for the Storage Commitment Push Model SOP Class SCU**

The VOLUSON S6/S8 will only accept the SCU role (which must be proposed via SCP/SCU Role Selection Negotiation) within a Presentation Context for the Storage Commitment Push Model SOP Class. The result from the SCP is expected on another association for the Storage Commitment result.

The VOLUSON S6/S8 behavior after receiving an N-EVENT-REPORT (Storage Commitment Result) is described in Section 9.5.

For this SOP class, all status codes with status Refused or Error are treated as failures and terminate the association and operation. All status codes with status Warning or Success are treated as successes.

Below are all possible status codes which VOLUSON S6/S8 would send upon N-EVENT-REPORT request as EVENT-REPORT response. The port number used is configured on Config screen, default is 104.

Service Status	Status Code	Conditions
Failed	0110H	Processing Error
Success	0000	N-Even Report received successfully.

**2.3.1.3.3 Real-World Activity C ('Receive Image' Operation)**

**2.3.1.3.3.1 Associated Real-World Activity**

VOLUSON S6/S8 will accept associations for C-STORE-RQs. The received images will be stored into a local database.

**2.3.1.3.3.2 Accepted Presentation Context Table**

Table 2.3-15: Presentation Context Table - Accepted

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax Name	Transfer Syntax UID	Role	Ext Neg.
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	JPEG Baseline (Lossy) JPEG Lossless Non Hierarchical (Process 14) Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70  1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCP	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	JPEG Baseline (Lossy) JPEG Lossless Non Hierarchical (Process 14) Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70  1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCP	None
Ultrasound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	JPEG Baseline (Lossy) JPEG Lossless Non Hierarchical (Process 14) Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70  1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCP	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	JPEG Baseline (Lossy) JPEG Lossless Non Hierarchical (Process 14) Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70  1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	JPEG Baseline (Lossy) JPEG Lossless Non Hierarchical (Process 14) Explicit VR Little Endian Explicit VR Big Endian Implicit VR Little Endian	1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70  1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2	SCP	None

**2.3.1.3.3.2.1 SOP Specific DICOM Conformance Statement for Storage SOP Classes**

The AE provides standard conformance to the Storage SOP Classes as an SCP. The port number used is configured on Config screen, default is 104. The storage level is 0.

**2.3.1.3.3.2.2 Presentation Context Acceptance Criterion**

No criterion.

### **2.3.1.3.3.2.3 Transfer Syntax Selection Policies**

The accepted transfer syntaxes are based on the proposed transfer syntax list. There is no defined priority order. All supported transfer syntaxes are accepted.

## **2.4 COMMUNICATION PROFILES**

### **2.4.1 Supported Communication Stacks (PS 3.8)**

DICOM Upper Layer (PS 3.8) is supported using TCP/IP.

### **2.4.2 TCP/IP Stack**

The TCP/IP stack is inherited from the product's operating system. Please refer to product documentation for more information.

#### **2.4.2.1 API**

Not applicable to this product.

## **2.5 EXTENSIONS / SPECIALIZATIONS / PRIVATIZATIONS**

The product will send ultrasound raw volume data information in private data elements designated by the private tag 7FE1,00xx VR OB, VM 1.

## **2.6 CONFIGURATION**

### **2.6.1 AE Title/Presentation Address Mapping**

The Local AE title is configurable through the Config screen, see below.

### **2.6.2 Configurable Parameters**

#### **Network:**

- Local IP address
- Local IP netmask
- Local routing table information

#### **Local:**

- Local AE Title
- Local TCP Port Number

#### **Verification:**

- The AE Title, IP address and port number of the SCP

#### **Modality Worklist:**

- The AE Title, IP address and port number of the SCP

#### **Storage**



- The AE Title, IP address and port number of the SCP
- Max retries, Retry interval, Timeout
- Enable/disable raw data
- Frame rate reduction
- Enable/disable multi-frame
- Compression selections
- Color support
- Association strategies: one association per image or one association per exam
- Include images and/or results
- Template selection

**Modality Performed Procedure Step:**

- The AE Title, IP address and port number of the SCP

**Storage Commitment:**

- The AE Title, IP address and port number of the SCP
- Max retries, Retry interval, Timeout

**Print:**

- The AE Title, IP address and port number of the SCP
- Max retries, Retry interval
- Configuration for each print job in setup dialog.

**Query/Retrieve:**

- The AE Title, IP address and port number of the SCP
- Max retries, Retry interval, Timeout
- Disabling/enabling and setting constant values for query fields

## **2.7 SUPPORT OF EXTENDED CHARACTER SETS**

VOLUSON S6/S8 will support the ISO\_IR 100 (ISO 8859-1:1987 Latin alphabet N 1. supplementary set) as extended character set.

## **2.8 CODES AND CONTROLLED TERMINOLOGY**

The product uses the fixed (non-configurable, non-extensible) coded terminology in SR Document attributes, as described in Section 8 SR INFORMATION OBJECT IMPLEMENTATION.

## **2.9 SECURITY PROFILES**

The product does not conform to any defined DICOM Security Profiles.

It is assumed that the product is used within a secured environment. It is assumed that a secured environment includes at a minimum:

1. Firewall or router protections to ensure that only approved external hosts have network access to the product.
2. Firewall or router protections to ensure that the product only has network access to approved external hosts and services.
3. Any communications with external hosts and services outside the locally secured environment use appropriate secure network channels (such as a Virtual Private Network(VPN)).

### 3. MEDIA STORAGE CONFORMANCE STATEMENT

#### 3.1 INTRODUCTION

This section of the DICOM Conformance Statement specifies the compliance to DICOM Media Interchange for the VOLUSON S6/S8.

VOLUSON S6/S8 supports the following DICOM functionality:

VOLUSON S6/S8 is able to export images and structured reports to DICOM media. Browsing media and reading images from DICOM media is not supported.

- Create a new DICOM File-set on media.

#### 3.2 IMPLEMENTATION MODEL

##### 3.2.1 Application Data Flow Diagram

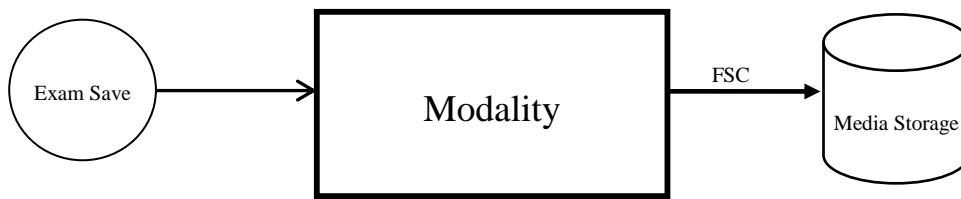


Figure 2: AE Data Flow Diagram

There is one local real-world activity that occurs in VOLUSON S6/S8- Export.

- Export creates a new DICOM File-set on CD-R or DVD-R

##### 3.2.2 Functional Definition of AE's

Application Entity VOLUSON S6/S8 supports the following functions:

- Create a new DICOM File-set on CD-R or DVD-R

##### 3.2.3 Sequencing Requirements

None applicable

#### 3.3 File Meta Information Options (See PS3.10)

The File Meta-Information for this implementation is:

Table 3.3-1: File Meta-Information for this implementation

Meta Informartion	Value
File Meta-Information Version	1
Implementation UID	1.2.276.0.26.20010718.240
Implementation Version Name	KRETZDICOM_240

Note: The Implementation Version Name and may change in the future without modification of this document.

**3.4 AE SPECIFICATIONS**

**3.4.1 VOLUSON S6/S8 AE Specification**

The Voluson S6/S8 Application Entity provides standard conformance to DICOM Interchange Option of the Media Storage Service Class. The Application Profiles and roles are listed below, the standard profiles are augmented with Secondary Capture images.

Table 3.4-1: Application Profiles and roles

Profile	Real World Activity	Role	Description
AUG-US-SC-SF-CDR AUG-US-SC-MF-CDR AUG-US-SC-SF-DVD AUG-US-SC-MF-DVD	Export	FSC	Interchange

**3.4.1.1 File Meta Information for the VOLUSON S6/S8 Application Entity**

The Source Application Entity is set from the VOLUSON S6/S8 local AE title. The local AE title is configurable.

**3.4.1.2 Real-World Activities for the VOLUSON S6/S8 Application Entity**

**3.4.1.2.1 Real-World Activity “Export”**

‘Export’ saves selected DICOM SOP instances to media and creates a DICOM File Set.

**3.4.1.2.1.1 Media Storage Application Profile for the Real-World Activity “Export”:**

For the list of Application Profiles that invoke this AE for ‘Export’ Real-World Activity, see the Table in Section 3.4.1 where the table describing the profiles and real-world activities is defined.

**3.4.1.2.1.2 Options**

Following are the SOP Classes supported by the Real-World Activity “Exam save”:

Table 3.4-2: Supported SOP Classes for ‘Export’

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
DICOM Media Storage Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian JPEG Baseline	1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian JPEG Baseline	1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Explicit VR Little Endian JPEG Baseline	1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50
Enhanced Ultrasound Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Explicit VR Little Endian JPEG Baseline	1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50
Comprehensive Structured Report Storage	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Little Endian	1.2.840.10008.1.2.1

## 4. ULTRASOUND (US) INFORMATION OBJECT IMPLEMENTATION

### 4.1 INTRODUCTION

This section specifies the use of the DICOM US Image IOD to represent the information included in US images produced by this implementation. Corresponding attributes are conveyed using the module construct. The contents of this section are:

- IOD Implementation
- IOD Module Table
- IOD Module Definition

### 4.2 US IOD IMPLEMENTATION

This section defines the implementation of US image information object.

### 4.3 US ENTITY-RELATIONSHIP MODEL

#### 4.3.1 Entity Descriptions

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities contained within the US Information Object.

#### 4.3.2 VOLUSON S6/S8 Mapping of DICOM Entities

Table 4.3-1: Mapping of DICOM Entities to Equipment Entities

DICOM	Equipment
Patient	Patient
Study	Exam
Series	Exam
Image	Image
Curve	Not used

### 4.4 IOD MODULE TABLE

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

Table 4.4-1 identifies the defined modules within the entities, which comprise the DICOM US IOD. Modules are identified by Module Name and Modules not described are not used.

See DICOM Part 3 for a complete definition of the entities, modules, and attributes. Only the single frame US Image IOD is described here.

Table 4.4-1: US Image IOD Modules

Entity Name	Module Name	Reference
Patient	Patient	4.5.1.1

Study	General Study	4.5.2.1
	Patient Study	4.5.2.2
Series	General Series	4.5.3.1
Frame of Reference	Frame of Reference	Not used
Frame of Reference	US Frame of Reference	Not used
Equipment	General Equipment	4.5.4.1
Image	General Image	4.5.5.1
	Image Pixel	4.5.5.2
	Contrast/Bolus	Not used
	Palette Color Lookup Table	Not used
	US Region Calibration	4.5.7.1
	US Image	4.5.7.2
	Overlay Plane	Not used
	VOI LUT	Not used
	SOP Common	4.5.6.1
Curve		Not used

**4.5 INFORMATION MODULE DEFINITIONS**

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities and modules contained within the US Information Object.

The following modules are included to convey Enumerated Values, Defined Terms, and Optional Attributes supported. Type 1 & Type 2 Attributes are also included for completeness and to define what values they may take and where these values are obtained. It should be noted that they are the same ones as defined in the DICOM Standard Part 3 (Information Object Definitions). Not described tag is not used and out of scope in VOLUSON S6/S8.

**4.5.1 Common Patient Entity Modules**

**4.5.1.1 Patient Module**

Table 4.5-1: Patient Module Attributes

Attribute Name	Tag	Type	Attribute Description
Patient's Name	(0010,0010)	2	May be entered from User Interface. Taken from worklist if it is there. Patient name with ^ delimiters
Patient ID	(0010,0020)	2	May be entered from User Interface. Taken from worklist if it is there. 64 char max
Patient's Birth Date	(0010,0030)	2	May be entered from User Interface. Taken from worklist if it is there.
Patient's Sex	(0010,0040)	2	May be entered from User Interface. Taken from worklist if it is there.
Referenced Patient Sequence	(0008,1120)	3	Not used
Patient's Birth Time	(0010,0032)	3	Not used
Other Patient Ids	(0010,1000)	3	Taken from worklist if it is there
Other Patient Names	(0010,1001)	3	Not used
Issuer of Patient Identifier	(0010,0021)	3	Included only if present in worklist
Other Patient IDs Sequence	(0010,1002)	3	Not used

Ethnic Group	(0010,2160)	3	Not used
Patient Comments	(0010,4000)	3	Not used

## 4.5.2 Common Study Entity Modules

### 4.5.2.1 General Study Module

Table 4.5-2: General Study Module Attributes

Attribute Name	Tag	Type	Attribute Description
Study Instance UID	(0020,000D)	1	Uniquely generated by the equipment. Taken from worklist if it is there.
Study Date	(0008,0020)	2	Is set to examination date
Study Time	(0008,0030)	2	Is set to examination time
Referring Physician's Name	(0008,0090)	2	May be entered from User Interface. Taken from worklist if it is there.
Study ID	(0020,0010)	2	Taken from worklist if it is there (From Requested Procedure Id)
Accession Number	(0008,0050)	2	May be entered from User Interface. Taken from worklist if it is there.
Study Description	(0008,1030)	3	Taken from worklist if it is present. (From Requested Procedure Description).
Name of Reading Physician(s)	(0008,1060)	3	May be entered from user interface.
Referenced Study Sequence	(0008,1110)	3	Taken from the worklist if present.
>Referenced SOP Class UID	(0008,1150)	1C	Taken from the worklist if present.
>Referenced SOP Instance UID	(0008,1155)	1C	Taken from the worklist if present.

### 4.5.2.2 Patient Study Module

No attributes from this module are used.

## 4.5.3 Common Series Entity Modules

### 4.5.3.1 General Series Module

This section specifies the attributes that identify and describe general information about the Series within a Study.

Table 4.5-3: General Series Module Attributes

Attribute Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	Defined Term "US" used.
Series Instance UID	(0020,000E)	1	Uniquely generated by the equipment
Series Number	(0020,0011)	2	Internal number which is incremented for each new series within a study.
Laterality	(0020,0060)	2C	Not used
Series Date	(0008,0021)	3	Is set to Series date
Series Time	(0008,0031)	3	Is set to Series time
Performing Physicians' Name	(0008,1050)	3	May be entered from User Interface. Taken from worklist if it is there (from Scheduled Performing Physician's Name)
Series Description	(0008,103E)	3	May be entered from User Interface (in Diagnosis).
Operator's Name	(0008,1070)	3	May be entered from User Interface. Default is login id.
Referenced Performed Procedure Step Sequence	(0008,1111)	3	Used if Modality Performed Procedure Step is enabled.
>Referenced SOP Class UID	(0008,1150)	1C	Used if Modality Performed Procedure Step is enabled.
>Referenced SOP Instance UID	(0008,1155)	1C	Used if Modality Performed Procedure Step is enabled.
Body Part Examined	(0018,0015)	3	Not used
Patient Position	(0018,5100)	2C	Not used

Attribute Name	Tag	Type	Attribute Description
Smallest Pixel Value in Series	(0028,0108)	3	Not used
Largest Pixel Value in Series	(0028,0109)	3	Not used
Request Attributes Sequence	(0040,0275)	3	Used if Modality Worklist and/or Modality Performed Procedure Step is enabled.
>Requested Procedure ID	(0040,1001)	1C	Taken from worklist if present.
>Scheduled Procedure Step ID	(0040,0009)	1C	Taken from worklist if present.
>Scheduled Procedure Step Description	(0040,0007)	3	Taken from worklist if present.
>Scheduled Protocol Code Sequence	(0040,0008)	3	Taken from worklist if present.
>Include 'Code Sequence Macro'			
Performed Procedure Step ID	(0040,0253)	3	Used if Modality Performed Procedure Step is enabled.
Performed Procedure Step Start Date	(0040,0244)	3	Used if Modality Performed Procedure Step is enabled.
Performed Procedure Step Start Time	(0040,0245)	3	Used if Modality Performed Procedure Step is enabled.
Performed Procedure Step Description	(0040,0254)	3	Used if Modality Performed Procedure Step is enabled.
Performed Protocol Code Sequence	(0040,0260)	3	Taken from worklist if it is there (from Scheduled Protocol Code Sequence)
>Include 'Code Sequence Macro'			

#### 4.5.4 Common Equipment Entity Modules

##### 4.5.4.1 General Equipment Module

This section specifies the attributes that identify and describe the piece of equipment, which produced a Series of Images.

Table 4.5-4: General Equipment Module Attributes

Attribute Name	Tag	Type	Attribute Description
Manufacturer	(0008,0070)	2	"GE Medical Systems Kretztechnik GmbH & Co OHG"
Institution Name	(0008,0080)	3	Used
Institution Address	(0008,0081)	3	Not used
Station Name	(0008,1010)	3	Used
Institutional Department Name	(0008,1040)	3	Not used
Manufacturer's Model Name	(0008,1090)	3	"V830"
Device Serial Number	(0018,1000)	3	Not used
Software Versions	(0018,1020)	3	Used
Spatial Resolution	(0018,1050)	3	Not used
Date of Last Calibration	(0018,1200)	3	Not used
Time of Last Calibration	(0018,1201)	3	Not used
Pixel Padding Value	(0028,0120)	3	Not used

#### 4.5.5 Common Image Entity Modules

##### 4.5.5.1 General Image Module

Table 4.5-5: General Image Module Attributes

Attribute Name	Tag	Type	Attribute Description
Instance Number	(0020,0013)	2	Image number in exam
Patient Orientation	(0020,0020)	2C	Zero length
Content Date	(0008,0023)	2C	Used
Content Time	(0008,0033)	2C	Used
Image Type	(0008,0008)	3	The first two values contain "ORIGINAL\ PRIMARY" or "DERIVED\ PRIMARY". Value 3 is the description of the type of application per the DICOM PS3.3, section C.8.5.6.1.1

Attribute Name	Tag	Type	Attribute Description
			Value 4 is the description of the type of application per the DICOM PS3.3, section C.8.5.6.1.1 Values 5 and 6 may be used for private data. See the Image Type in Table 4.5-10
Acquisition Number	(0020,0012)	3	Not used
Acquisition Date	(0008,0022)	3	Not used
Acquisition Time	(0008,0032)	3	Not used
Acquisition Datetime	(0008,002A)	3	Supported
Referenced Image Sequence	(0008,1140)	3	Not used
Derivation Description	(0008,2111)	3	Not used
Source Image Sequence	(0008,2112)	3	Not used
Images in Acquisition	(0020,1002)	3	Not used
Image Comments	(0020,4000)	3	Used
Lossy Image Compression	(0028,2110)	3	for lossy compressed image

#### 4.5.5.2 Image Pixel Module

This section specified the attributes that describe the pixel data of the image.

Table 4.5-6: Image Pixel Module Elements

Attribute Name	Tag	Type	Attribute Description
Samples Per Pixel	(0028,0002)	1	RGB: 3 YBR FULL 422: 3 MONOCHROME2: 1
Photometric Interpretation	(0028,0004)	1	Defined Values used: "MONOCHROME2", "RGB", "YBR FULL 422"
Rows	(0028,0010)	1	SC Images, Configurable per DICOM destination, US Image : always (800x600)
Columns	(0028,0011)	1	SC Images, Configurable per DICOM destination, US Image : always (800x600)
Bits Allocated	(0028,0100)	1	Value always = 0008H.
Bits Stored	(0028,0101)	1	Value always = 0008H.
High Bit	(0028,0102)	1	Value always = 0007H.
Pixel Representation	(0028,0103)	1	Defined Value '0' - unsigned integer.
Pixel Data	(7FE0,0010)	1	Pixel Data of image.
Planar Configuration	(0028,0006)	1C	Used unless MONOCHROME2. Enumerated value 0000H, color-by-pixel, if Photometric Interpretation element value has value 'RGB' or if image is JPEG compressed or if image is uncompressed.
Pixel Aspect Ratio	(0028,0034)	1C	"1\1" if MONOCHROME2, else "Not used"
Smallest Image Pixel Value	(0028,0106)	3	Not used
Largest Image Pixel Value	(0028,0107)	3	Not used

#### 4.5.5.3 Contrast/Bolus Module

This module is not being used.

#### 4.5.5.4 Palette Color Lookup Table Module

This module is not being used

#### 4.5.5.5 VOI LUT Module



Table 4.5-7: VOI LUT Module Attributes

Attribute Name	Tag	Type	Attribute Description
VOI LUT Sequence	(0028,3010)	3	Not used
>LUT Descriptor	(0028,3002)	3	Not used
>LUT Explanation	(0028,3003)	3	Not used
>LUT Data	(0028,3006)	3	Not used
Window Center	(0028,1050)	3	Set to 127 if MONOCHROME2.
Window Width	(0028,1051)	3	Set to 256 if MONOCHROME2.
Window Center & Width Explanation	(0028,1055)	3	Not used

#### 4.5.6 General Modules

The SOP Common Module is mandatory for all DICOM IODs.

##### 4.5.6.1 SOP Common Module

Table 4.5-8: SOP Common Module Attributes

Attribute Name	Tag	Type	Attribute Description
SOP Class UID	(0008,0016)	1	Set to "1.2.840.10008.5.1.4.1.1.3.1" "1.2.840.10008.5.1.4.1.1.6.1" "1.2.840.10008.5.1.4.1.1.7"
SOP Instance UID	(0008,0018)	1	Uniquely generated by the equipment
Specific Character Set	(0008,0005)	1C	Set to "ISO_IR 100" if extended characters are used. Image Read: images using other extended character set than "ISO_IR 100" are rejected.
Instance Creation Date	(0008,0012)	3	Not used
Instance Creation Time	(0008,0013)	3	Not used
Instance Creator UID	(0008,0014)	3	Not used
Instance Number	(0020,0013)	3	Not used

#### 4.5.7 US Modules

This Section describes US Series, Equipment, and Image Modules. These Modules contain attributes that are specific to US Image IOD.

##### 4.5.7.1 US Region Calibration Module

The US Region Calibration Module is used to describe multiple regions.

Table 4.5-9: US Region Calibration Module elements

Attribute Name	Tag	Type	Attribute Description
Sequence of Ultrasound Regions	(0018,6011)	1	
>Region Location Min $x_0$	(0018,6018)	1	0..959
>Region Location Min $y_0$	(0018,601A)	1	0..661
>Region Location Max $x_1$	(0018,601C)	1	0..959
>Region Location Max $y_1$	(0018,601E)	1	0..661
>Physical Units X Direction	(0018,6024)	1	3,4
>Physical Units Y Direction	(0018,6026)	1	3,4
>Physical Delta X	(0018,602C)	1	Used
>Physical Delta Y	(0018,602E)	1	Used
>Reference Pixel $x_0$	(0018,6020)	3	0
>Reference Pixel $y_0$	(0018,6022)	3	0
>Ref. Pixel Physical Value X	(0018,6028)	3	0

Attribute Name	Tag	Type	Attribute Description
>Ref. Pixel Physical Value Y	(0018,602A)	3	0
>Region Spatial Format	(0018,6012)	1	Used
>Region Data Type	(0018,6014)	1	1
>Region Flags	(0018,6016)	1	Bit 0: 0 = Opaque

#### 4.5.7.2 US Image Module

This section specifies the attributes that describe ultrasound images

Table 4.5-10: US Image Module Elements

Attribute Name	Tag	Type	Attribute Description
Samples Per Pixel	(0028,0002)	1	RGB: 3 YBR FULL 422: 3 MONOCHROME2: 1"
Photometric Interpretation	(0028,0004)	1	Value set to: "MONOCHROME2", "YBR FULL 422" or "RGB"
Bits Allocated	(0028,0100)	1	Value always = 0008H
Bits Stored	(0028,0101)	1	Value always = 0008H
High Bit	(0028,0102)	1	Value always = 0007H
Planar Configuration	(0028,0006)	1	Used unless MONOCHROME2. Enumerated value 0000H, color-by-pixel, if Photometric Interpretation element value has value 'RGB' or if image is JPEG compressed or if image is uncompressed.
Pixel Representation	(0028,0103)	1	Always 0000H = unsigned integer.
Frame Increment Pointer	(0028,0009)	1C	Not used
Image Type	(0008,0008)	2	The first two values contain "ORIGINAL/PRIMARY" or "DERIVED/ PRIMARY". Value 3 and 4 are the description of the type of application per the DICOM PS3.3, section C.8.5.6.1.1 ABDOMINAL GYNECOLOGY OBSTETRICAL PEDIATRIC SMALL PARTS VASCULAR SCROTAL INTRACARDIAC  Value 4 is the description of the type of application per the DICOM PS3.3, section C.8.5.6.1.1 0001 2D Imaging 0002 M- Mode 0004 CW Doppler 0008 PW Doppler 0010 Color Doppler 0020 Color M-Mode 0040 3D Rendering 0100 Color Power Mode  Values 5 and 6 may be used for private data
Lossy Image Compression	(0028,2110)	1C	for lossy compressed image
Ultrasound Color Data Present	(0028,0014)	3	Not used
Referenced Overlay Sequence	(0008,1130)	3	Not used
>Referenced SOP Class UID	(0008,1150)	1C	Not used
>Referenced SOP Instance UID	(0008,1150)	1C	Not used
Referenced Curve Sequence	(0008,1155)	3	Not used

Attribute Name	Tag	Type	Attribute Description
>Referenced SOP Class UID	(0008,1150)	1C	Not used
>Referenced SOP Instance UID	(0008,1150)	1C	Not used
Number of Event Timers	(0008,2129)	3	Not used
Event Elapsed Times	(0008,2130)	3	Not used
Event Timer Name	(0008,2132)	3	Not used
Anatomic Region Sequence	(0008,2218)	3	Not used
>Include 'Code Sequence Macro'			
>Anatomic Region Modifier Sequence	(0008,2220)	3	Not used
>>Include 'Code Sequence Macro'			
Primary Anatomic Structure Sequence	(0008,2228)	3	Not used
>Include 'Code Sequence Macro'			
>>Include 'Code Sequence Macro'			
>Primary Anatomic Structure Modifier Sequence	(0008,2230)	3	Not used
Transducer Position Sequence	(0008,2240)		
>Include 'Code Sequence Macro'		3	Not used
>Transducer Position Modifier Sequence	(0008,2242)		
>>Include 'Code Sequence Macro'			
Transducer Orientation Sequence	(0008,2244)	3	Not used
>Include 'Code Sequence Macro'			
>Transducer Orientation Sequence	(0008,2246)	3	Not used
>>Include 'Code Sequence Macro'			
Trigger Time	(0018,1060)	3	Not used
Nominal Interval	(0018,1062)	3	Not used
Beat Rejection Flag	(0018,1080)	3	Not used
Low R-R Value	(0018,1081)	3	Not used
High R-R Value	(0018,1082)	3	Not used
Heart Rate	(0018,1088)	3	Not used
Output Power	(0018,5000)	3	Not used
Transducer Data	(0018,5010)	3	Not used
Transducer Type	(0018,6031)	3	Not used
Focus Depth	(0018,5012)	3	Not used
Preprocessing Function	(0018,5020)	3	Not used
Mechanical Index	(0018,5022)	3	Not used
Bone Thermal Index	(0018,5024)	3	Not used
Cranial Thermal Index	(0018,5026)	3	Not used
Soft Tissue Thermal Index	(0018,5027)	3	Not used
Soft Tissue-focus Thermal Index	(0018,5028)	3	Not used
Soft Tissue-surface Thermal Index	(0018,5029)	3	Not used
Depth of Scan Field	(0018,5050)	3	Not used
Image Transformation Matrix	(0018,5210)	3	Not used
Image Translation Vector	(0018,5212)	3	Not used
Overlay Subtype	(60xx,0045)	3	Not used

## 5. ULTRASOUND MULTIFRAME (US MF) INFORMATION OBJECT IMPLEMENTATION

### 5.1 INTRODUCTION

This section specifies the use of the DICOM US Multi-frame Image IOD to represent the information included in US images produced by this implementation. Corresponding attributes are conveyed using the module construct. The contents of this section are:

- IOD Implementation
- IOD Module Table
- IOD Module Definition

### 5.2 US MF IOD IMPLEMENTATION

This section defines the implementation of US Multi-Frame image information object.

### 5.3 US MF ENTITY-RELATIONSHIP MODEL

#### 5.3.1 Entity Descriptions

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities contained within the US Multi-Frame Information Object.

#### 5.3.2 VOLUSON S6/S8 Mapping of DICOM entities

Table 5.3-1: Mapping of DICOM Entities to Equipment Entities

DICOM	VOLUSON S6/S8 Entity
Patient	Patient
Study	Exam
Series	Exam
Image	Image
Curve	Not used

### 5.4 IOD MODULE TABLE

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

The table below identifies the defined modules within the entities, which comprise the DICOM US Multi- Frame IOD. Modules are identified by Module Name and Modules not described are not used.

See DICOM Part 3 for a complete definition of the entities, modules, and attributes.

Table 5.4-1: US Multi-Frame Image IOD Modules

Entity Name	Module Name	Reference
Patient	Patient	4.5.1.1
Study	General Study	4.5.2.1
	Patient Study	4.5.2.2
Series	General Series	4.5.3.1
Equipment	General Equipment	4.5.4.1
Image	General Image	4.5.5.1
	Image Pixel	4.5.5.2
	Contrast/Bolus	Not used
	Cine	5.5.1.1
	Multi-frame	5.5.1.2
	Palette Color Lookup Table	Not used
	US Region Calibration	4.5.7.1
	US Image	4.5.7.2
	Overlay Plane	Not used
	VOI LUT	Not used
SOP Common	4.5.6.1	
Curve		Not used

## 5.5 INFORMATION MODULE DEFINITIONS

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities and modules contained within the US Multi-Frame Information Object.

The following modules are included to convey Enumerated Values, Defined Terms, and Optional Attributes supported. Type 1 & Type 2 Attributes are also included for completeness and to define what values they may take and where these values are obtained. It should be noted that they are the same ones as defined in the DICOM Standard Part 3 (Information Object Definitions).

### 5.5.1 Common Image Modules

#### 5.5.1.1 Cine Module

Table 5.5-1: Cine Module Elements

Attribute Name	Tag	Type	Attribute Description
Frame Time	(0018,1063)	1C	Is set to the interframe time
Frame Time Vector	(0018,1065)	1C	Not Used
Start Trim	(0008,2142)	3	Not Used
Stop Trim	(0008,2143)	3	Not Used
Recommended Display Frame Rate	(0008,2144)	3	Not Used
Cine Rate	(0018,0040)	3	Not Used
Frame Delay	(0018,1066)	3	Not Used
Effective Duration	(0018,0072)	3	Not Used
Actual Frame Duration	(0018,1242)	3	Not Used
Preferred Playback Sequencing	(0018,1244)	3	Not Used

**5.5.1.2 Multi-frame Module**

Table 5.5-2: Multi Frame Module Elements

<b>Attribute Name</b>	<b>Tag</b>	<b>Type</b>	<b>Attribute Description</b>
Number of Frames	(0028,0008)	1	Set to number of frames in image.
Frame Increment Pointer	(0028,0009)	1	Set o Frame Time (0018,0063)

## 6. Enhanced Ultrasound (US) Volume Information Object Implementation

### 6.1 INTRODUCTION

This section specifies the use of the DICOM Enhanced US Volume IOD to represent the information included in Enhanced US Volumes produced by this implementation. Corresponding attributes are conveyed using the module construct. The contents of this section are:

- IOD Implementation
- IOD Module Table
- IOD Module Definition

### 6.2 Enhanced US Volume IOD IMPLEMENTATION

This section defines the implementation of Enhanced US Volume information object.

### 6.3 Enhanced US Volume ENTITY-RELATIONSHIP MODEL

#### 6.3.1 Entity Descriptions

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities contained within the Enhanced US Volume Information Object.

#### 6.3.2 VOLUSON S6/S8 Mapping of DICOM entities

Table 6.3-1: Mapping of DICOM Entities to Equipment Entities

DICOM	VOLUSON S6/S8 Entity
Patient	Patient
Study	Exam
Series	Exam
Image	Image
Curve	Not used

### 6.4 IOD MODULE TABLE

Within an entity of the DICOM Enhanced US Volume IOD, attributes are grouped into related set of attributes. A set of related attributes is termed a module. A module facilitates the understanding of the semantics concerning the attributes and how the attributes are related with each other. A module grouping does not infer any encoding of information into data sets. The table below identifies the defined modules within the entities, which comprise the DICOM Enhanced US Volume IOD. Modules are identified by Module Name.

See DICOM Part 3 for a complete definition of the entities, modules, and attributes. Only the Enhanced US Volume IOD is described here.

Some references in the following table may also refer to information contained in the US image IOD if the contents is identical. Not described elements are not used and out of scope in VOLUSON S6/S8.

Table 6.4-1: Enhanced US Volume IOD Modules

Entity Name	Module Name	Reference
Patient	Patient	4.5.1.1
	Clinical Trial Subject	Not used
Study	General Study	4.5.2.1
	Patient Study	4.5.2.2

	Clinical Trial Subject	Not used
Series	General Series	4.5.3.1
	Enhanced US Series	6.5.3.2
	Clinical Trial Series	Not used
Frame of Reference	Frame of Reference	6.5.4.1
	US Frame of Reference	6.5.4.2
	Synchronization	6.5.4.3
Equipment	General Equipment	4.5.4.1
	Enhanced General Equipment	6.5.5.2
Image	General Image	4.5.5.1
	Image Pixel	4.5.5.2
	Enhanced Contrast/Bolus	Not used
	Multi-frame Dimension	6.5.6.7
	Multi-frame Functional Groups	6.5.6.3
	Respiratory Synchronization	Not used
	Cardiac Synchronization	Not used
	Device	Not used
	Acquisition Context	6.5.6.4
	Specimen	Not used
	Enhanced Palette Color Lookup Table	6.5.6.5
	Enhanced US Image	6.5.6.6
	IVUS Image	Not used
	Excluded Intervals	Not used
	SOP Common	4.5.6.1
Frame Extraction	Not used	

**6.5 INFORMATION MODULE DEFINITIONS**

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities and modules contained within the Enhanced US Volume Information Object. Only the used modules are listed below.

**6.5.1 Patient Entity Module**

This module is defined in section 4.5.1.1.

**6.5.2 Study Entity Modules**

These modules are defined in section 4.5.2.1 and 4.5.2.2.

**6.5.3 Series Entity Modules**

**6.5.3.1 General Series Module**

This module is defined in section 4.5.3.1.

**6.5.3.2 Enhanced US Series Module**

Table 6.5-1: Enhanced US Series Module Attributes

Attribute Name	Tag	Type	Attribute Description
Modality	(0008, 0060)	1	Set to number of frames in image.
Referenced Performed Procedure Step Sequence	(0008, 1111)	3	Used if Modality Performed Procedure Step is enabled.
>Referenced SOP Class UID	(0008, 1150)	3	Used if Modality Performed Procedure Step is enabled.



>Referenced SOP Instance UID	(0008, 1155)	3	Used if Modality Performed Procedure Step is enabled.
Performed Protocol Code SQ	(0040, 0260)	3	Taken from worklist if present. (from Scheduled Protocol Code Sequence)
>Include "Code SQ Macro"			

**6.5.4 Frame of Reference Modules**

**6.5.4.1 Frame of Reference**

Table 6.5-2: Frame Of Reference Module Attributes

Attribute Name	Tag	Type	Attribute Description
Frame of Reference UID	(0020,0052)	1	Used
Position Reference Indicator	(0020,1040)	2	Empty

**6.5.4.2 US Frame of Reference**

Table 6.5-3: US Frame Of Reference Module Attributes

Attribute Name	Tag	Type	Attribute Description
Volume Frame of Reference UID	(0020,9312)	1	Used
Ultrasound Acquisition Geometry	(0020,9307)	1	Defined Term "APEX" used
Apex Position	(0020,9308)	1C	Used
Volume To Transducer Mapping Matrix	(0020,9309)	1C	not used
Patient Frame of Reference Source	(0020,930C)	1C	not used
Table Frame of Reference UID	(0020,9313)	1C	not used
Volume to Table Mapping Matrix	(0020,930A)	1C	not used

**6.5.4.3 Synchronization Module**

Table 6.5-4: Synchronization Module Attributes

Attribute Name	Tag	Type	Attribute Description
Synchronization Frame of Reference UID	(0020,0200)	1	Used
Synchronization Trigger	(0018,106A)	1	Enumerated Value "NO TRIGGER" used
Synchronization Channel	(0018,106C)	1C	Not used
Acquisition Time Synchronized	(0018,1800)	1	Enumerated Value "Y" used
Time Source	(0018,1801)	3	Not used
Time Distribution Protocol	(0018,1802)	3	Not used
NTP Source Address	(0018,1803)	3	Not used

**6.5.5 Equipment Entity Modules**

**6.5.5.1 General Equipment Module**

This module is defined in section 4.5.5.1.

**6.5.5.2 Enhanced General Equipment Module**

Table 6.5-5: Enhanced General Equipment Module Attributes

Attribute Name	Tag	Type	Attribute Description
Manufacturer	(0008,0070)	1	"GE Medical Systems Kretztechnik GmbH & Co OHG"

Manufacturer's Model Name	(0008,1090)	1	""V830""
Device Serial Number	(0018,1000)	1	Example: "D012345"
Software Versions	(0018,1020)	1	Used

## 6.5.6 Image Entity Modules

### 6.5.6.1 General Image Module

This module is defined in section 4.5.5.1.

### 6.5.6.2 Image Pixel Module

This module is defined in section 4.5.5.2.

### 6.5.6.3 Multi-frame Functional Groups

Table 6.5-6: Multi-frame Functional Module Attributes

Attribute Name	Tag	Type	Attribute Description
Shared Functional Groups Sequence	(5200,9229)	2	Used
>US Image Description Sequence	(0018,9806)	1	Used
>>Frame Type	(0018,9007)	1	Used
>>Volumetric Properties	(0018,9206)	1	Used
>>Volume Based Calculation Technique	(0018,9207)	1	Used
>Plane Orientation (Volume)	(0020,930F)	1	Used
>>Image Orientation (Volume)	(0020,9302)	1	"1\0\0\0\1\0"
>Temporal Position Sequence	(0020,9310)	1	Used
>>Temporal Position Time Offset	(0020,930D)	1	Used
Per-frame Functional Groups Sequence	(5200,9230)	1	Used
>Image Data Type Sequence	(0018,9807)	1	Used
>>Data Type	(0018,9808)	1	Used
>>>Aliased Data Type	(0018,980B)	1	Enumerated Value "NO"
>Frame Content Sequence	(0020,9111)	1	Used
>>Frame Acquisition Number	(0020,9156)	3	Not used
>>Frame Acquisition Datetime	(0018,9074)	1C	Used
>>Frame Reference Datetime	(0018,9151)	1C	Used
>>Frame Acquisition Duration	(0018,9220)	1C	Used
>>Cardiac Cycle Position	(0018,9236)	3	Not used
>>Respiratory Cycle Position	(0018,9214)	3	Not used
>>Dimension Index Values	(0020,9157)	1C	Used
>>Temporal Position Index	(0020,9128)	1C	Not used
>>Stack ID	(0020,9056)	1C	Not used
>>In-Stack Position Number	(0020,9057)	1C	Not used
>>Frame Comments	(0020,9158)	3	Not used
>>Frame Label	(0020,9453)	3	Not used
>Plane Position Volume Sequence	(0020,930e)	1	Used
>>Image Position (Volume)	(0020,9301)	1	Used
Include VOI LUT Macro Table 4.5-7			

### 6.5.6.4 Acquisition Context

Table 6.5-7: Acquisition Context Module Attributes

Attribute Name	Tag	Type	Attribute Description
Acquisition Context Sequence	(0050,0555)	2	Empty

6.5.6.5 Enhanced Palette Color Lookup Table

Table 6.5-8: Enhanced Palette Color Lookup Table Module Attributes

Attribute Name	Tag	Type	Attribute Description
Data Frame Assignment Sequence	(0028,1401)	1	Sequence of items each assigning frames of one particular value of Data Type (0018,9808) to a data path in the Enhanced Blending and Display Pipeline. One, two, or three items shall be included in this sequence.
>Data Type	(0018,9808)	1	TISSUE_INTENSITY TISSUE_VELOCITY FLOW_VELOCITY FLOW_POWER FLOW_VARIANCE ELASTICITY PERFUSION SOUND_SPEED ATTENUATION DICOM PS3.3-2009, section C.7.6.16.2.24.1
>Data Path Assignment	(0028,1402)	1	"PRIMARY_SINGLE", "SECONDARY_SINGLE", "SECONDARY_LOW", "SECONDARY_HIGH"
>Bits Mapped to Color Lookup Table	(0028,1403)	3	Not used
>Include VOI LUT Macro Table 4.5-7			
Blending LUT1 Sequence	(0028,1404)	1C	Used
>Blending LUT1 Transfer Function	(0028,1405)	1	"CONSTANT","TABLE"
>Blending Weight Constant	(0028,1406)	1C	used if (0028,140D) is "CONSTANT"
>Blending Lookup Table Descriptor	(0028,1407)	1C	Used if (0028,1405) is "TABLE"
>Blending Lookup Table Data	(0028,1408)	1C	Used if (0028,1405) is "TABLE"
Blending LUT2 Sequence	(0028,140C)	1C	used
>Blending Weight Constant	(0028,1406)	1C	Used if (0028,140D) is "CONSTANT"
>Blending LUT2 Transfer Function	(0028,140D)	1	"CONSTANT","ONE MINUS"
>Blending Lookup Table Descriptor	(0028,1407)	1C	Not used
>Blending Lookup Table Data	(0028,1408)	1C	Not used
Enhanced Palette Color Lookup Table Sequence	(0028,140B)	1C	Used
>Red Palette Color Lookup Table Descriptor	(0028,1101)	1C	Used
>Green Palette Color Lookup Table Descriptor	(0028,1102)	1C	Used
>Blue Palette Color Lookup Table Descriptor	(0028,1103)	1C	Used
>Red Palette Color Lookup Table Data	(0028,1201)	1C	Used
>Green Palette Color Lookup Table Data	(0028,1202)	1C	Used
>Blue Palette Color Lookup Table Data	(0028,1203)	1C	Used
>Data Path ID	(0028,140E)	1	"PRIMARY","SECONDARY"
>RGB LUT Transfer Function	(0028,140F)	1	"TABLE"
>Alpha LUT Transfer Function	(0028,1410)	1	"NONE","TABLE"
ICC Profile	(0028,2000)	1C	Fixed neutral profile

6.5.6.6 Enhanced US Image

Table 6.5-9: Enhanced US Image Module Attributes

Attribute Name	Tag	Type	Attribute Description
Image Type	(0008,0008)	1	The first two values contain "ORIGINAL/PRIMARY" or "DERIVED/ PRIMARY". Value 3 and 4 are the description of the type of application per the DICOM PS3.3, section C.8.5.6.1.1 ABDOMINAL GYNECOLOGY OBSTETRICAL PEDIATRIC SMALL PARTS VASCULAR SCROTAL INTRACARDIAC  Value 4 is the description of the type of application per the DICOM PS3.3, section C.8.5.6.1.1 0001 2D Imaging 0002 M- Mode 0004 CW Doppler 0008 PW Doppler 0010 Color Doppler 0020 Color M-Mode 0040 3D Rendering 0100 Color Power Mode  Values 5 and 6 may be used for private data.
Samples Per Pixel	(0028,0002)	1	1
Photometric Interpretation	(0028, 0004)	1	"MONOCHROME2"
Bits Allocated	(0028,0100)	1	Always 0008H
Bits Stored	(0028,0101)	1	Always 0008H
High Bit	(0028,0102)	1	Always 0007H
Planar Configuration	(0028, 0006)	1C	Not used
Pixel Representation	(0028, 0103)	1	Set to zero
Dimension Organization Type	(0020,9311)	1	"3D"
Acquisition Datetime	(0008,002A)	1	Used
Acquisition Duration	(0018,9073)	1	Set to zero
Pixel Spacing	(0028,0030)	1	Used
Position Measuring Device Used	(0018,980C)	1C	"RIGID"
Lossy Image Compression	(0028,2110)	1C	Set to 01 if images is lossy compressed.
Lossy Image Compression Ratio	(0028,2112)	1C	Required if Lossy Images Compression (0028,2110) is "01".
Lossy Image Compression Method	(0028,2114)	1C	Required if Lossy Images Compression (0028,2110) is "01".
Presentation LUT Shape	(2050,0020)	1	IDENTITY - output is in P-Values.
Rescale Intercept	(0028,1052)	1	Set to zero
Rescale Slope	(0028,1053)	1	Set to 1
Source Image Sequence	(0008,2112)	1C	Not used
Referenced Image Sequence	(0008,1140)	3	Not used
Referenced Raw Data Sequence	(0008,9121)	3	Not used
Referenced Instance Sequence	(0008,114A)	1C	Not used
Number of Stages	(0008,2124)	1C	Not used
Stage Number	(0008,2122)	1C	Not used
Stage Code Sequence	(0040,000A)	1C	Not used
View Code Sequence	(0054,0220)	1	Used
>Code Value	(0008,0100)	1	"G-A112"
>Coding Scheme Designator	(0008,0102)	1	"SRT"
>Code Meaning	(0008,0104)	1	"External"

Attribute Name	Tag	Type	Attribute Description
Event Timer Sequence	(0008,2133)	3	Not used
Burned In Annotation	(0028,0301)	1	"NO"
Icon Image Sequence	(0088,0200)	3	Not used
Transducer Data	(0018,5010)	3	Not used
Transducer Scan Pattern Code Sequence	(0018,9809)	1	Used
>Code Value	(0008,0100)	1	"125242"
>Coding Scheme Designator	(0008,0102)	1	"DCM"
>Code Meaning	(0008,0104)	1	"Volume scan pattern"
Transducer Geometry Code Sequence	(0018,980D)	1	Used
>Code Value	(0008,0100)	1	"125254"
>Coding Scheme Designator	(0008,0102)	1	"DCM"
>Code Meaning	(0008,0104)	1	"Sector ultrasound transducer geometry"
Transducer Beam Steering Code Sequence	(0018,980E)	1	Used
>Code Value	(0008,0100)	1	"125259"
>Coding Scheme Designator	(0008,0102)	1	"DCM"
>Code Meaning	(0008,0104)	1	"Phased beam steering"
Transducer Application Code Sequence	(0018,980F)	1	Used
>Code Value	(0008,0100)	1	"125263"
>Coding Scheme Designator	(0008,0102)	1	"DCM"
>Code Meaning	(0008,0104)	1	"Endovaginal Transducer"
Preprocessing Function	(0018,5020)	1	Not used
Mechanical Index	(0018,5022)	1	Used
Bone Thermal Index	(0018,5024)	1	Used
Cranial Thermal Index	(0018,5026)	1	Used
Soft Tissue Thermal Index	(0018,5027)	1	Used
Depths Of Focus	(0018,9801)	1	Used
Depth Of Scan Field	(0018,5050)	1	Used

### 6.5.6.7 Multi-Frame Dimension Module

Table 6.5-10: MULTI-FRAME DIMENSION MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Dimension Organization Sequence	(0020,9221)	1	Used
>Dimension Organization UID	(0020,9164)	1	Used
Dimension Organization Type	(0020,9311)	3	"3D"
Dimension Index Sequence	(0020,9222)	1	Used
>Dimension Index Pointer	(0020,9165)	1	Used, There are three values. "Temporal Position Time Offset" or "Image Position (Volume)" or "Data Type".
>Dimension Index Private Creator	(0020,9213)	1C	Not used
>Functional Group Pointer	(0020,9167)	1C	Used. Required if there is the value of the Dimension Index Pointer. There are three values. "Temporal Position Sequence" or "Plane Position Volume Sequence" or "Image Data Type Sequence".
>Functional Group Private Creator	(0020,9238)	1C	Not Used
>Dimension Organization UID	(0020,9164)	1C	Used. Required if there is the value of the Dimension Organization Sequence contains items.
>Dimension Description Label	(0020,9421)	3	Not used.

**6.5.6.8 SOP Common**

This module is defined in section 4.5.6.1.

## 7. SC INFORMATION OBJECT IMPLEMENTATION

### 7.1 INTRODUCTION

This section specifies the use of the DICOM SC Image IOD to represent the information included in SC images produced by this implementation. Corresponding attributes are conveyed using the module construct. The contents of this section are:

- IOD Implementation
- IOD Module Table
- IOD Module Definition

### 7.2 SC IOD IMPLEMENTATION

This section defines the implementation of SC image information object.

### 7.3 SC ENTITY-RELATIONSHIP MODEL

#### 7.3.1 Entity Descriptions

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities contained within the SC Information Object.

#### 7.3.2 VOLUSON S6/S8 Mapping of DICOM Entities

Table 7.3-1: Mapping of DICOM Entities to Equipment Entities

DICOM	Equipment
Patient	Patient
Study	Exam
Series	Exam
Image	Image
Frame	Not Applicable

### 7.4 IOD MODULE TABLE

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

The table below identifies the defined modules within the entities, which comprise the DICOM SC IOD. Modules are identified by Module Name and Modules not described are not used.

See DICOM Part 3 for a complete definition of the entities, modules, and attributes.

Table 7.4-1: SC Image IOD Modules

Entity Name	Module Name	Reference
Patient	Patient	4.5.1.1
Study	General Study	4.5.2.1
	Patient Study	4.5.2.2
Series	General Series	4.5.3.1

Equipment	General Equipment	4.5.4.1
	SC Equipment	6.5.1.1
Image	General Image	4.5.5.1
	Image Pixel	4.5.5.2
	SC Image	7.5.1.2
	Overlay Plane	Not used
	Modality LUT	Not used
	VOI LUT	4.5.5.5
	SOP Common	4.5.6.1

**7.5 INFORMATION MODULE DEFINITIONS**

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities and modules contained within the SC Information Object.

The following modules are included to convey Enumerated Values, Defined Terms, and Optional Attributes supported. Type 1 & Type 2 Attributes are also included for completeness and to define what values they may take and where these values are obtained. It should be noted that they are the same ones as defined in the DICOM Standard Part 3 (Information Object Definitions).

**7.5.1 SC Modules**

This Section describes SC Equipment, and Image Modules. These Modules contain attributes that are specific to SC Image IOD.

**7.5.1.1 SC Equipment Module**

This Module describes equipment used to convert images into a DICOM format.

Table 7.5-1: Secondary Capture Equipment Module Elements

Attribute Name	Tag	Type	Attribute Description
Conversion Type	(0008,0064)	1	Set to WSD
Modality	(0008,0060)	3	Defined Value "US" used.
Secondary Capture Device ID	(0018,1010)	3	Not used
Secondary Capture Device Manufacturer	(0018,1016)	3	Not used
Secondary Capture Device Manufacturer's Model Name	(0018,1018)	3	Not used
Secondary Capture Device Software Version	(0018,1019)	3	Not used
Video Image Format Acquired	(0018,1022)	3	Not used
Digital Image Format Acquired	(0018,1023)	3	Not used

**7.5.1.2 SC Image Module**

The table in this Section contains IOD attributes that describe SC images

Table 7.5-2: Secondary Capture Image Module Elements

Attribute Name	Tag	Type	Attribute Description
Date of Secondary Capture	(0018,1012)	3	Not used
Time of Secondary Capture	(0018,1014)	3	Not used



## **8. SR INFORMATION OBJECT IMPLEMENTATION**

### **8.1 INTRODUCTION**

This section specifies the use of the DICOM Comprehensive SR IOD to represent results produced by this implementation. Corresponding attributes are conveyed using the module construct. The contents of this section are:

- IOD Implementation
- IOD Module Table
- IOD Module Definition

In this section, supported means that tag is sent with value.

### **8.2 COMPREHENSIVE SR IOD IMPLEMENTATION**

This section defines the implementation of Comprehensive SR information object.

### **8.3 COMPREHENSIVE SR ENTITY-RELATIONSHIP MODEL**

#### **8.3.1 Entity Descriptions**

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities contained within the Comprehensive SR Information Object.

#### **8.3.2 VOLUSON S6/S8 Mapping of DICOM Entities**

Table 8.3-1: Mapping of DICOM Entities to Equipment Entities

<b>DICOM</b>	<b>Equipment</b>
Patient	Patient
Study	Exam
Series	Exam
SR Document	Results

**8.4 IOD MODULE TABLE**

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

Table 7.4-1 identifies the defined modules within the entities, which comprise the DICOM Comprehensive SR IOD. Modules are identified by Module Name and Modules not described are not used.

See DICOM Part 3 for a complete definition of the entities, modules, and attributes.

Table 8.4-1: SR IOD Modules

Entity Name	Module Name	Reference
Patient	Patient	4.5.1.1
	Specimen Identification	Not used
Study	General Study	4.5.2.1
	Patient Study	4.5.2.2
Series	SR Document Series	8.5.1
Equipment	General Equipment	4.5.4.1
Document	SR Document General	8.5.2
	SR Document Content	8.5.3
	SOP Common	4.5.6.1

**8.5 INFORMATION MODULE DEFINITIONS**

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities and modules contained within the Comprehensive SR Information Object.

The following modules are included to convey Enumerated Values, Defined Terms, and Optional Attributes supported. Type 1 & Type 2 Attributes are also included for completeness and to define what values they may take and where these values are obtained. It should be noted that they are the same ones as defined in the DICOM Standard Part 3 (Information Object Definitions).

**8.5.1 SR Document Series Module**

Table 8.5-1: SR Document Series Module Attributes

Attribute Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	Defined Term "SR" used.
Series Instance UID	(0020,000E)	1	Uniquely generated by the equipment
Series Number	(0020,0011)	2	Internal number which is incremented for each new series.
Referenced Performed Procedure Step Sequence	(0008,1111)	3	Used if Modality Performed Procedure Step is enabled.
>Referenced SOP Class UID	0008, 1150	3	Used if Modality Performed Procedure Step is enabled.
>Referenced SOP Instance UID	0008, 1155	3	Used if Modality Performed Procedure Step is enabled.

8.5.2 SR Document General Module

Table 8.5-2: SR Document General Module Attributes

Attribute Name	Tag	Type	Attribute Description
Instance Number	(0020,0013)	1	Internal number which is incremented for each new SR document
Completion Flag	(0040,A491)	1	Defined Term "PARTIAL" used.
Completion Flag Description	(0040,A492)	3	Not used
Verification Flag	(0040,A493)	1	Defined Term "UNVERIFIED" used.
Content Date	(0008,0023)	1	Used
Content Time	(0008,0033)	1	Used
Verifying Observer Sequence	(0040,A073)	1C	Not used
>Verifying Observer Name	(0040,A075)	1	
>Verifying Observer Identification Code Sequence	(0040,A088)	2	
>>Include 'Code Sequence Macro'			
>Verifying Organization	(0040,A027)	1	
>Verification DateTime	(0040,A030)	1	
Predecessor Documents Sequence	(0040,A360)	1C	Not used.
>Include 'SOP Instance Reference Macro'			
Identical Documents Sequence	(0040,A525)	1C	Not used
>Include 'SOP Instance Reference Macro'			
Referenced Request Sequence	(0040,A370)	1C	Filled if the exam is based on a Worklist entry
>Study Instance UID	(0020,000D)	1	Taken from Study Instance UID in General Study Module
>Referenced Study Sequence	(0008,1110)	2	Taken from Worklist if MPPS is being used
>>Referenced SOP Class UID	(0008,1150)	1	Not used
>>Referenced SOP Instance UID	(0008,1155)	1	Not used
>Accession Number	(0008,0050)	2	Taken from Accession Number in General Study Module
>Placer Order Number/Imaging Service Request	(0040,2016)	2	Not used
>Filler Order Number/Imaging Service Request	(0040,2017)	2	Not used
>Requested Procedure ID	(0040,1001)	2	Taken from worklist if it is there
>Requested Procedure Description	(0032,1060)	2	Taken from worklist if it is there
>Requested Procedure Code Sequence	(0032,1064)	2	Taken from Worklist if present
>>Include 'Code Sequence Macro'			
Current Requested Procedure Evidence Sequence	(0040,A375)	1C	Not used
>Study Instance UID	(0020,000D)	1	
>Referenced Series Sequence	(0008,1115)	1	
>>Series Instance UID	(0020,000E)	1	
>>Retrieve AE Titles	(0008,0054)	3	
>>Storage Media File-Set ID	(0088,0130)	3	
>>Storage Media File-Set UID	(0088,0140)	3	
>>Referenced SOP Sequence	(0008,1199)	1	
>>>References SOP Class UID	(0008,1150)	1	

Attribute Name	Tag	Type	Attribute Description
>>>References SOP Instance UID	(0008,1155)	1	
Pertinent Other Evidence Sequence	(0040,A385)	1C	

### 8.5.3 SR Document Content Module

Table 8.5-3: SR Document Content Module Attributes

Attribute Name	Tag	Type	Attribute Description
Observation DateTime	(0040,A032)	1C	Not used
Content Template Sequence	(0040,A504)	1C	Not used
> <i>Template Identification Macro'</i>			
Value Type	(0040,A040)	1	CONTAINER
Continuity of Content	(0040,A050)	1C	SEPARATE
Concept Name Code Sequence	(0040,A043)	1C	
> <i>Code Sequence Macro'</i>			
<i>Concept Value attribute(s)</i>			Not used for CONTAINER
Content Sequence	(0040,A730)	1C	See Template "OB-GYN Ultrasound Procedure Report" (TID 5000)
> Relationship Type	(0040,A010)	1	See Template "OB-GYN Ultrasound Procedure Report" (TID 5000)
> Referenced Content Item Identifier	(0040,DB73)	1C	Not used
> <i>SR Document Content Module</i>			See Template "OB-GYN Ultrasound Procedure Report" (TID 5000)

#### 8.5.3.1 SR Document Content Descriptions

##### 8.5.3.1.1 Content Template

The equipment supports the following root Templates for SR SOP Instances created, processed, or displayed by the equipment.

Table 8.5-4: SR Root Templates

SOP Class	Template ID	Template Name	Use
Comprehensive SR	5000	"OB-GYN Ultrasound Procedure Report"	Create

### 8.6 STANDARD EXTENDED AND PRIVATE CONTEXT GROUPS

All needed context items which are not defined in the DICOM Standard are privately defined and listed in Appendix A.

### 8.7 STANDARD EXTENDED AND PRIVATE TEMPLATES

All needed Templates which are not defined in the DICOM Standard are privately defined and listed in Appendix B.

## 9. MODALITY WORKLIST INFORMATION MODEL DEFINITION

### 9.1 INTRODUCTION

This section specifies the use of the DICOM Modality Worklist Information Model used to organize data and against which a Modality Worklist Query will be performed. The contents of this section are:

- Information Model Description
- Information Model Entity-Relationship Model
- Information Model Module Table
- Information Model Keys

### 9.2 MODALITY WORKLIST INFORMATION MODEL DESCRIPTION

This section defines the implementation of Modality Worklist Information Model.

### 9.3 MODALITY WORKLIST INFORMATION MODEL ENTITY-RELATIONSHIP MODEL

#### 9.3.1 Entity Descriptions

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities contained within the Modality Worklist Information Model.

##### 9.3.1.1 Scheduled Procedure Step

Schedule Procedure Step is implemented in a basic form to allow for the user to retrieve a subset of attributes.

##### 9.3.1.2 Requested Procedure Entity Description

Requested Procedure Step is implemented in a basic form to allow for the user to retrieve a subset of attributes.

##### 9.3.1.3 Imaging Service Request Entity Description

Image Service is implemented in a basic form to allow for the user to retrieve a subset of attributes.

##### 9.3.1.4 Visit Entity Description

Visit Entity is implemented in a basic form to allow for the user to retrieve a subset of attributes.

##### 9.3.1.5 Patient Entity Description

Patient Entity Description is implemented in a basic form to allow for the user to retrieve a subset of attributes.

#### 9.3.2 VOLUSON S6/S8 Mapping of DICOM entities

Table 9.3-1: Mapping of DICOM Entities to Equipment Entities

DICOM	VOLUSON S6/S8 Entity
Scheduled Procedure Step	Not Applicable
Requested Procedure	Exam

Imaging Service Request	Exam
Visit	Not Applicable
Patient	Patient

**9.4 INFORMATION MODEL MODULE TABLE**

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

The table below identifies the defined modules within the entities, which comprise the DICOM Modality Worklist IOD. Modules are identified by Module Name.

See DICOM Part 3 for a complete definition of the entities, modules, and attributes.

Table 9.4-1: Modality Worklist Information Model Modules

Entity Name	Module Name	Reference
Scheduled Procedure Step	SOP Common	9.5.2.1
	Scheduled Procedure Step	9.5.2.2
Requested Procedure	Requested Procedure	9.5.3.1
Imaging Service Request	Imaging Service Request	9.5.4.1
Visit	Visit Identification	9.5.5.1
	Visit Status	9.5.5.2
	Visit Relationship	9.5.5.3
	Visit Admission	Not used
Patient	Patient Relationship	Not used
	Patient Identification	9.5.6.1
	Patient Demographic	9.5.6.2
	Patient Medical	9.5.6.3

**9.5 INFORMATION MODEL KEYS**

Please refer to DICOM Standard PS 3.3. (Information Object Definitions) and PS 3.4 (Service Class Specifications) for a description of each of the Entities contained within the Modality Worklist Information Model.

The following Module descriptions are included to specify what data elements are supported and what type of matching can be applied. It should be noted that they are the same ones as defined in the DICOM Standard PS 3.4 (Service Class Specifications).

The term Instance is used for Images and Results in examinations that are based on Worklist entries.

**9.5.1 Supported Matching**

Following are the types of matching that can be requested by the implementation:

- Universal Value Matching.
- Single Value Matching.
- Wild Card Matching.
- Range of date.

Fields with "Filtering is supported" in the Matching column can be controlled from the Search screen.

**9.5.2 Scheduled Procedure Step Entity**

**9.5.2.1 SOP Common Module**

Table 9.5-1: SOP Common Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Specific Character Set	(0008,0005)	O	1C	Yes/Yes	Not supported

**9.5.2.2 Scheduled Procedure Step Module**

Table 9.5-2: Scheduled Procedure Step Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Scheduled Procedure Step Sequence	(0040,0100)	R	1	No/No	Matching is supported
>Scheduled Station AE Title	(0040,0001)	R	1	No/No	Matching is supported.
>Scheduled Procedure Step Start Date	(0040,0002)	R	1	No/No	Matching is supported Filtering is supported
>Scheduled Procedure Step Start Time	(0040,0003)	R	1	No/No	Matching is supported

>Modality	(0008,0060)	R	1	Yes/Yes (but always "US")	Matching is supported
>Scheduled Performing Physician's Name	(0040,0006)	R	2	Yes/Yes	Matching is supported
>Scheduled Procedure Step Description	(0040,0007)	O	1C	Yes/Yes	Matching is supported
>Scheduled Station Name	(0040,0010)	O	2	No/No	Matching is supported
>Scheduled Procedure Step Location	(0040,0011)	O	2	No/No	Matching is supported
>Scheduled Procedure Step ID	(0040,0009)	O	1	Yes/Yes	Matching is supported
>Scheduled Protocol Code Sequence	(0040,0008)	O	1C	Yes/Yes	Matching is supported

**9.5.3 Requested Procedure Entity**

**9.5.3.1 Requested Procedure Module**

Table 9.5-3: Requested Procedure Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Requested Procedure ID	(0040,1001)	O	1	Yes/Yes	Matching is supported Filtering is supported
Requested Procedure Description	(0032,1060)	O	1C	Yes/Yes	Matching is supported
Requested Procedure Code Sequence	(0032,1064)	O	1C	No/Yes	Matching is supported
Requested Procedure Comments	(0040,1400)	O	3	No/No	Matching is supported
Study Instance UID	(0020,000D)	O	1	Yes/Yes	Matching is supported
Referenced Study Sequence	(0008,1110)	O	2	Yes/Yes	Matching is supported
>Referenced SOP Class UID	(0008,1150)	O	1C	Yes/Yes	Matching is supported
>Referenced SOP Instance UID	(0008,1155)	O	1C	Yes/Yes	Matching is supported



Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
>Names of Intended Recipients of Results	(0040,1010)	O	3	No/No	Matching is supported

## 9.5.4 Imaging Service Request Entity

### 9.5.4.1 Imaging Service Request Module

Table 9.5-4: Imaging Service Request Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Accession Number	(0008,0050)	O	2	Yes/Yes	Matching is supported Filtering is supported
Referring Physician's Name	(0008,0090)	O	2	Yes/No	Matching is supported
Imaging Service Request Comments	(0040,2400)	O	3	No/No	Matching is supported
Requesting Physician	(0032,1032)	O	2	No/No	Matching is supported
Requesting Service	(0032,1033)	O	3	No/No	Matching is supported

## 9.5.5 Visit Entity

### 9.5.5.1 Visit Identification

Table 9.5-5: Visit Identification Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Admission ID	(0038,0010)	O	2	No/No	Matching is supported

### 9.5.5.2 Visit Status

Table 9.5-6: Visit Status Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Current Patient Location	(0038,0300)	O	2	No/No	Matching is supported

### 9.5.5.3 Visit Relationship

Table 9.5-7: Visit Relationship Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Referenced Patient Sequence	(0008,1120)	O	2	Yes/Yes	Matching is supported
>Referenced SOP Class UID	(0008,1150)	O	2	Yes/Yes	Matching is supported
>Referenced SOP Instance UID	(0008,1155)	O	2	Yes/Yes	Matching is supported

## 9.5.6 Patient Entity

### 9.5.6.1 Patient Identification

Table 9.5-8: Patient Identification Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Patient's Name	(0010,0010)	R	1	Yes/Yes	Matching is supported Filtering is supported
Patient ID	(0010,0020)	R	1	Yes/Yes	Matching is supported Filtering is supported
Other Patient Ids	(0010,1000)	O	3	No/No	Not supported
Issue of patient Identifier	(0010,0021)	O	3	Yes/No	Matching is supported Filtering is supported

### 9.5.6.2 Patient Demographic

Table 9.5-9: Patient Demographic Module Attributes

Attribute Name	Tag	Expected Matching Key Type	Expected Returned Key Type	Mapped into Instance/MPPS	Matching
Patients Birth Date	(0010,0030)	O	2	No/No	Matching is supported Filtering is supported
Patients Birth Time	(0010,0032)	O	3	No/No	Not supported
Patient's Sex	(0010,0040)	O	2	Yes/Yes	Matching is supported Filtering is supported
Patient's Size	(0010,1020)	O	3	No/No	Not supported
Patient's Weight	(0010,1030)	O	2	Yes/Yes	Matching is supported
Ethnic Group	(0010,2160)	O	3	No/No	Not supported
Patient Comments	(0010,4000)	O	3	No/No	Not supported

**9.5.6.3 Patient Medical**

Table 9.5-10: Patient Medical Module Attributes

<b>Attribute Name</b>	<b>Tag</b>	<b>Expected Matching Key Type</b>	<b>Expected Returned Key Type</b>	<b>Mapped into Instance/MPPS</b>	<b>Matching</b>
Additional Patient History	(0010,21B0)	O	3	No/No	Matching is supported
Contrast Allergies	(0010,2210)	O	2	No/No	Matching is supported
Medical Alerts	(0010,2000)	O	2	No/No	Matching is supported
Pregnancy Status	(0010,21C0)	O	2	No/No	Matching is supported

## 10. MODALITY PERFORMED PROCEDURE STEP SOP CLASS DEFINITION

### 10.1 INTRODUCTION

This section of the DICOM Conformance Statement specifies the Modality Performed Procedure Step SOP Class, the optional attributes and service elements supported, the valid range of values for mandatory and optional attributes, and the status code behavior.

### 10.2 MODALITY PERFORMED PROCEDURE STEP SOP CLASS DEFINITION

In this section, supported means that tag is sent with value if entered by user or from worklist.

#### 10.2.1 IOD Description

This is the description of the DICOM tags to be sent for Modality Performed Procedure Step SOP class. The following tables describe the Modality Performed Procedure Step Sop Class N-CREATE, N-SET and Final State Attributes.

Table 10.2-1: PerformedProcedure Step Relationship

Attribute Name	Tag	Req. Type N-CREATE	Req. Type N-SET
Scheduled Step Attribute Sequence	(0040,0270)	1	Not allowed
>Study Instance UID	(0020,000D)	1	Not allowed
>Referenced Study Sequence	(0008,1110)	2, supported	Not allowed
>>Referenced SOP Class UID	(0008,1150)	1C, supported	Not allowed
>>Referenced SOP Instance UID	(0008,1155)	1C, supported	Not allowed
>Accession Number	(0008,0050)	2, supported	Not allowed
>Placer Order Number/Imaging Service Request	(0040,2016)	3, not supported	Not allowed
>Filler Order Number/Imaging Service Request	(0040,2017)	3, not supported	Not allowed
>Requested Procedure ID	(0040,1001)	2, supported	Not allowed
>Requested Procedure Description	(0032,1060)	2, supported	Not allowed
>Scheduled Procedure Step ID	(0040,0009)	2, supported	Not allowed
>Scheduled Procedure Step Description	(0040,0007)	2, supported	
>Scheduled Protocol Code Sequence	(0040,0008)	2, supported	
>>Include 'Code Sequence Macro'			
Patient's Name	(0010,0010)	2, supported	Not allowed
Patient ID	(0010,0020)	2, supported	Not allowed
Patient's Birth Date	(0010,0032)	2, supported	Not allowed
Patient's Sex	(0010,0040)	2, supported	Not allowed
>Referenced Patient Sequence	(0008,1120)	2, supported	Not allowed
>>Referenced SOP Class UID	(0008,1150)	1C, supported	Not allowed
>>Referenced SOP Instance UID	(0008,1155)	1C, supported	Not allowed

Table 10.2-2: PerformedProcedure Step Information

Attribute Name	Tag	Req. Type N-CREATE	Req. Type N-SET
Performed Procedure Step ID	(0040,0253)	1	Not allowed
Performed Station AE Title	(0040,0241)	1	Not allowed
Performed Station Name	(0040,0242)	2, supported	Not allowed

Attribute Name	Tag	Req. Type N-CREATE	Req. Type N-SET
Performed Location	(0040,0243)	2, supported	Not allowed
Performed Procedure Step Start Date	(0040,0244)	1	Not allowed
Performed Procedure Step Start Time	(0040,0245)	1	Not allowed
Performed Procedure Step Status	(0040,0252)	1	3, supported
Performed Procedure Step Description	(0040,0254)	2, supported	3, supported
Performed Procedure Type Description	(0040,0255)	2, always empty	3, always empty
Procedure Code Sequence	(0008,1032)	2, supported	3, supported
>Include 'Code Sequence Macro'			
Performed Procedure Step End Date	(0040,0250)	2, always empty	3, supported
Performed Procedure Step End Time	(0040,0251)	2, always empty	3, supported

Table 10.2-3: Image Acquisition Results

Attribute Name	Tag	Req. Type N-CREATE	Req. Type N-SET
Modality	(0008,0060)	1	Not allowed
Study ID	(0020,0010)	2, supported	Not allowed
Performed Protocol Code Sequence	(0040,0260)	2, always empty	3, always empty
>Include 'Code Sequence Macro'			
Performed Series Sequence	(0040,0340)	2, always empty	3, supported
>Performing Physician's Name	(0008,1050)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Protocol Name	(0018,1030)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>Operator's Name	(0008,1070)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Series Instance UID	(0020,000E)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Series Description	(0008,103E)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Retrieve AE Title	(0008,0054)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Referenced Image Sequence	(0008,1140)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>>Referenced SOP Class UID	(0008,1150)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>>Referenced SOP Instance UID	(0008,1155)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>>Referenced SOP Class UID	(0008,1150)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>>Referenced SOP Instance UID	(0008,1155)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>Referenced Frame Number	(0008,1150)	3, not supported	3, not supported

## 10.2.2 Operations

### 10.2.2.1 Action Information

Covered under IOD Description in Section 10.2.1.

**10.2.2.2 Service Class User Behavior**

The equipment sends N-CREATE when first image in examination is acquired or when the exam is ended for the case where there are no images.

The equipment sends N-SET after the exam is ended. The N-SET will include all acquired images' and reports' UIDs and the status of COMPLETED or DISCONTINUED.

**10.2.2.3 Status Codes**

No Service Class specific status values are defined for the N-ACTION Service. See PS 3.7 for general response status codes.

## 11. STORAGE COMMITMENT PUSH MODEL SOP CLASS DEFINITION

### 11.1 INTRODUCTION

This section of the DICOM Conformance Statement specifies the Storage Commitment Push Model SOP Class, the optional attributes and service elements supported, the valid range of values for mandatory and optional attributes, and the status code behavior.

### 11.2 STORAGE COMMITMENT PUSH MODEL SOP CLASS DEFINITION

#### 11.2.1 IOD Description

##### 11.2.1.1 STORAGE COMMITMENT MODULE

Table 11.2-1: Image Acquisition Results

Attribute Name	Tag	Req. Type N-CREATE	Req. Type N-SET
Modality	(0008,0060)	1	Not allowed
Study ID	(0020,0010)	2, supported	Not allowed
Performed Protocol Code Sequence	(0040,0260)	2, always empty	3, always empty
>Include 'Code Sequence Macro'			
Performed Series Sequence	(0040,0340)	2, always empty	3, supported
>Performing Physician's Name	(0008,1050)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Protocol Name	(0018,1030)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>Operator's Name	(0008,1070)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Series Instance UID	(0020,000E)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Series Description	(0008,103E)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Retrieve AE Title	(0008,0054)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>Referenced Image Sequence	(0008,1140)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>>Referenced SOP Class UID	(0008,1150)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>>Referenced SOP Instance UID	(0008,1155)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	2C (Required if SQ Item is present)	2C (Required if SQ Item is present)
>>Referenced SOP Class UID	(0008,1150)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>>Referenced SOP Instance UID	(0008,1155)	1C (Required if SQ Item is present)	1C (Required if SQ Item is present)
>Referenced Frame Number	(0008,1150)	3, not supported	3, not supported

#### 11.2.2 DIMSE Service Group

Table 11.2-2: DIMSE Service Group

DIMSE Service Element	Usage SCU/SCP
N-EVENT-REPORT	M/M

N-ACTION	M/M
----------	-----

**11.2.3 Operations**

**11.2.3.1 Action Information**

Covered under IOD Description in Table 11.2.1.

**11.2.3.2 Service Class User Behavior**

The equipment sends the N-ACTION primitive (Storage Commitment Request) after successful exam save to a DICOM Storage SCP.

The equipment may request storage commitment for all generated SOP Class UIDs:

Table 11.2-3: SOP Class Table

Name	UID
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33

The association for the N-ACTION is disconnected after processing the response. Thus, the N-EVENT- REPORT must be sent on a separate association.

The Referenced Study Component Sequence Attribute is not supported.

The Transaction UID is valid for two days. If no answer is received, the request will be removed without warning the user.

The optional Storage Media File-Set ID & UID Attributes in the N-ACTION are not supported. On receipt of an unsuccessful N-ACTION Response Status Code from the SCP, the request will be put in a holding queue for the user to manually retry the request

**11.2.3.3 Status Codes**

No Service Class specific status values are defined for the N-ACTION Service. See PS 3.7 for general response status codes.

**11.2.4 Notifications**

The equipment will only listen for an N-EVENT-REPORT from the SCP in a new association on the listen port for Verification and Storage Commitment.

**11.2.4.1 Event Information**

Table 11.2-4: Storage Commitment Result - Event Information

Event Type Name	Event Type ID	Attribute	Tag	Requirement Type SCU/SCP
Storage Commitment Request Successful	1	Transaction UID	(0008,1195)	-/1
		Retrieve AE Title	(0008,0054)	Not used
		Storage Media File-Set ID	(0088,0130)	Not used
		Storage Media File-Set UID	(0088,0140)	Not used
		Referenced SOP Sequence	(0008,1199)	-/1
		>Referenced SOP Class UID	(0008,1150)	-/1
		>Referenced SOP Instance UID	(0008,1155)	-/1



		>Retrieve AE Title	(0008,0054)	Not used
		>Storage Media File-Set ID	(0088,0130)	Not used
		>Storage Media File-Set UID	(0088,0140)	Not used
Storage Commitment Request Complete - Failures Exist	2	Transaction UID	(0008,1195)	-/1
		Retrieve AE Title	(0008,0054)	Not used
		Storage Media File-Set ID	(0088,0130)	Not used
		Storage Media File-Set UID	(0088,0140)	Not used
		Referenced SOP Sequence	(0008,1199)	-/1C
		>Referenced SOP Class UID	(0008,1150)	-/1
		>Referenced SOP Instance UID	(0008,1155)	-/1
		>Retrieve AE Title	(0008,0054)	Not used
		>Storage Media File-Set ID	(0088,0130)	Not used
		>Storage Media File-Set UID	(0088,0140)	Not used
		Failed SOP Sequence	(0008,1198)	-/1
		>Referenced SOP Class UID	(0008,1150)	-/1
		>Referenced SOP Instance UID	(0008,1155)	-/1
		>Failure Reason	(0008,1197)	-/1

**11.2.4.2 Service Class User Behavior**

If a successful answer is received, the request will be removed automatically without warning the user. If a non-successful answer is received, the request will be left in the holding queue.  
 If no answer is received, the request will remain in the queue for manual retry or manual deletion.

**11.2.4.3 Status Codes**

No Service Class specific status values are defined for the N-EVENT-REPORT Service. See PS 3.7 for general response status code.

## 12. PRINT MANAGEMENT SOP CLASS DEFINITION

### 12.1 INTRODUCTION

This section of the DICOM Conformance Statement specifies the supported Print Management SOP and Meta SOP Classes, the optional attributes and service elements supported, the valid range of values for mandatory and optional attributes, and the status code behavior.

- Basic Print Management Meta SOP Classes
- Print Management SOP Class Definitions
- Print Management IODs
- IOD Module Definition

### 12.2 BASIC PRINT MANAGEMENT META SOP CLASSES

The Basic Print Management Meta SOP Classes correspond with the minimum functionality that an implementation of the Print Management Service Class shall support. The equipment supports the Basic Grayscale Print Management Meta SOP Class and the Basic Color Print Management Meta SOP Class. These are defined in Table 12.1-1 and Table 12.2-1.

#### 12.2.1 Basic Grayscale Print Management Meta SOP Class

The Basic Grayscale Print Management Meta SOP Class is defined by the following set of supported SOP Classes.

TABLE 12.2-1 BASIC GRAYSCALE PRINT MANAGEMENT META SOP CLASS

SOP Class Name	Usage SCU	Reference
Basic Film Session SOP Class	M	see 12.3.1
Basic Film Box SOP Class	M	see 12.3.2
Basic Grayscale Image Box SOP Class	M	see 12.3.3.1
Printer SOP Class	M	see 12.3.4

#### 12.2.2 Basic Color Print Management Meta SOP Class

The Basic Color Print Management Meta SOP Class is defined by the following set of supported SOP Classes.

TABLE 12.2-2 BASIC COLOR PRINT MANAGEMENT META SOP CLASS

SOP Class Name	Usage SCU	Reference
Basic Film Session SOP Class	M	see 12.3.1
Basic Film Box SOP Class	M	see 12.3.2
Basic Color Image Box SOP Class	M	see 12.3.3.2
Printer SOP Class	M	see 12.3.4

### 12.3 PRINT MANAGEMENT SOP CLASS DEFINITIONS

#### 12.3.1 Basic Film Session SOP Class

The Basic Color Print Management Meta SOP Class is defined by the following set of supported SOP Classes.

TABLE 12.3-1 DIMSE SERVICE GROUP

SOP Class Name	Usage SCU	Reference
N-CREATE	M	see 12.3.1.1.1
N-SET	U	see 12.3.1.1.2
N-DELETE	U	see 12.3.1.1.3

N-ACTION	U	see 12.3.1.1.4
----------	---	----------------

**12.3.1.1 DIMSE Service Group**

**12.3.1.1.1 N-CREATE**

The N-CREATE DIMSE Service is used by equipment to request that the SCP create a Film Session SOP Instance.

**12.3.1.1.2 N-SET**

Not used in this implementation.

**12.3.1.1.3 N-DELETE**

Not used in this implementation.

**12.3.1.1.4 N-ACTION**

Not used in this implementation

**12.3.2 Basic Film Box SOP Class**

The Basic Film Box IOD is an abstraction of the presentation of one film of the film session. The DIMSE services that are applicable to the IOD are shown in the following Table.

TABLE 12.3-2 DIMSE SERVICE GROUP

SOP Class Name	Usage SCU	Reference
N-CREATE	M	see 12.3.2.1.1
N-ACTION	M	see 12.3.2.1.1.1
N-SET	U	see 12.3.2.1.2
N-DELETE	U	see 12.3.2.1.3

**12.3.2.1 DIMSE Service Group**

**12.3.2.1.1 N-CREATE**

The N-CREATE DIMSE Service is used by equipment to request that the SCP create a Film Box SOP Instance. Table 12.4-2 defines the Basic Film Box Presentation Module attributes used in this request.

**12.3.2.1.1.1 N-ACTION**

The N-ACTION DIMSE Service is used by the equipment to request the SCP (printer) to print the number of copies configured by the user to a film of the Im session.

**12.3.2.1.1.2 N-SET**

Not used in this implementation.

**12.3.2.1.1.3 N-DELETE**

The N-DELETE DIMSE Service is used by VOLUSON S6/S8 to request the SCP (printer) to delete the complete Film Box. The root Film Box Instance UID is sent to the SCP to accomplish this.

**12.3.3 Image Box SOP Class**

**12.3.3.1 Basic Grayscale Image Box SOP Class**

The Basic Grayscale Image Box IOD is an abstraction of the presentation of an image and image related data in the image area of a film. The DIMSE services that are applicable to the IOD are shown in Table 12.3-3

TABLE 12.3-3 DIMSE SERVICE GROUP

SOP Class Name	Usage SCU	Reference
N-SET	M	see 12.3.3.1.1

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

The N-SET DIMSE Service is used by the equipment to update the Basic Grayscale Image Box SOP Instance. Table 12.5.1.2.5 defines the Basic Image Box Presentation Module attributes used.

**12.3.3.2 Basic Color Image Box SOP Class**

The Basic Color Image Box IOD is an abstraction of the presentation of an image and image related data in the image area of a film. The DIMSE services that are applicable to the IOD are shown in Table 12.3.3-2.

TABLE 12.3-4 DIMSE SERVICE GROUP

SOP Class Name	Usage SCU	Reference
N-SET	M	see 12.3.3.2.1

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

The N-SET DIMSE Service is used by VOLUSON S6/S8 to update the Basic Color Image Box SOP Instance. Table 12.4-3 defines the Basic Image Box Presentation Module attributes used.

**12.3.4 Printer SOP Class**

The Printer IOD is an abstraction of the hard copy printer and is the basic Information Entity to monitor the status of the printer. The DIMSE services that are applicable to the IOD are shown in Table 12.3-5.

**12.3.4.1 DIMSE Service Group**

TABLE 12.3-5 DIMSE SERVICE GROUP

SOP Class Name	Usage SCU	Reference
N-EVENT-REPORT	M	see 12.3.4.1.1
N-GET	U	see 12.3.4.1.2

**12.3.4.1.1 N-EVENT\_REPORT**

VOLUSON S6/S8 confirms the N-EVENT-REPORT initiated by the SCP (printer).

**12.3.4.1.2 N-GET**

Used by the equipment to request the SCP to get a Printer SOP Instance. Table 12.5-7 defines the Printer Module attributes.

**12.4 PRINT MANAGEMENT IODS**

Within an entity of a DICOM Print Management, attributes are grouped into a related set of attributes. A set of related attributes is termed a module. A module facilitates the understanding of the semantics concerning the attributes and how the attributes are related with each other. A module grouping does not infer any encoding of information into datasets. Table 12.4-1, Table 12.4-2, Table 12.4-3 and Table 12.4-4 identify the defined modules within the entities which comprise the

DICOM Print Management Service IODs. Modules are identified by Module Name. See DICOM for a complete definition of the entities, modules and attributes.

**12.4.1 Film Session IOD Module**

TABLE 12.4-1 FILM SESSION IOD MODULES

Module Name	Reference	Module Description
SOP Common Module	see 12.5.1.1.1	Contains SOP Common information
Basic Film Session Presentation Module	see 12.5-2	Contains Film Session presentation information
Basic Film Session Relationship Module	see 12.5.1.2.2	References to related SOPs

**12.4.2 Basic Film Box IOD Module Table**

TABLE 12.4-2 BASIC FIIM BOX IOD MODULES

Module Name	Reference
SOP Common Module	see 12.5.1.1.1
Basic Film Box Presentation Module	see 12.5.2.2.3
Basic Film Box Relationship Module	see 12.5.2.4.4

**12.4.3 Basic Image Box IOD Module Table**

TABLE 12.4-3 BASIC IMAGE BOX IOD MODULES

Module Name	Reference
SOP Common Module	see 12.5.1.1.1
Image Box Pixel Presentation Module	see 12.5.1.2.5

**12.4.4 Printer IOD Module Table**

TABLE 12.4-4 PRINTER IOD MODULES

Module Name	Reference
SOP Common Module	see 12.5.1.1.1
Printer Module	see 12.5.1.2.6

**12.5 INFORMATION MODULE DEFINITIONS**

**12.5.1 General Modules**

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

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

**12.5.1.1 General Modules**

**12.5.1.1.1 SOP Common Module**

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

TABLE 12.5-1 SOP COMMON MODULE ATTRIBUTES

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

**12.5.1.2 Print Management Modules**

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

**12.5.1.2.1 Basic Film Session Presentation Module**

This section defines the attributes that are common for all films of a film session. The attributes described in table 12.5-2 apply when the N-CREATE DIMSE service is used.

TABLE 12.5-2 BASIC FILM SESSION PRESENTATION MODULE ATTRIBUTES

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Number of Copies	(2000,0010)	U	Defined Terms used (user configurable): Default is 1. Max is 99.
Print Priority	(2000,0020)	U	Defined Terms used (user configurable): HIGH, MED, LOW.
Medium Type	(2000,0030)	U	Defined Terms used (user configurable): PAPER BLUE FILM CLEAR FILM
Film Destination	(2000,0040)	U	Defined Terms used (user configurable): MAGAZINE, PROCESSOR
Film Session Label	(2000,0050)	U	Not used
Memory Allocation	(2000,0060)	U	Not used

**12.5.1.2.2 Basic Film Session Relationship Module**

TABLE 12.5-3 BASIC FILM SESSION RELATIONSHIP MODULE ATTRIBUTES

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

**12.5.1.2.3 Basic Film Box Presentation Module**

The attributes described in table 12.5-4 apply when the N-CREATE DIMSE service is used.

TABLE 12.5-4 BASIC FILM BOX PRESENTATION MODULE ATTRIBUTES

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Image Display Format	(2010,0010)	M	Standard\1,1 Standardn\1,2 Standardn\2,2 Standardn\2,3 Standardn\3,3 Standardn\3,4 Standardn\3,5 Standardn\4,4 Standardn\4,5 Standardn\4,6
Annotation Display Format ID	(2010,0030)	U	Not used.
Film Orientation	(2010,0040)	U	Defined Terms used (user configurable): PORTRAIT - default LANDSCAPE
Film Size ID	(2000,0050)	U	Defined Terms used (user configurable): 8INX10IN,10INX12IN,10INX14IN,11INX14IN 14INX14IN,14INX17IN,24CMX24CM, 24CMX30CM
Magnification Type	(2010,0060)	U	Defined Terms Used (user configurable): REPLICATE - default BILINEAR CUBIC, NONE
Smoothing Type	(2010,0080)	U	Not used
Border Density	(2010,0100)	U	Defined Terms Used (user configurable): BLACK WHITE
Empty Image Density	(2010,0110)	U	Defined Terms Used (user configurable): BLACK WHITE
Min Density	(2010,0120)	U	Limited by printer
Max Density	(2010,0130)	U	Limited by printer
Trim	(2010,0140)	U	Not used.
Configuration Information	(2010,0150)	U	User configurable.

**12.5.1.2.4 Basic Film Box Relationship Module**

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

TABLE 12.5-5 BASIC FILM BOX RELATIONSHIP MODULE ATTRIBUTES

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Referenced Film Session Sequence	(2010,0500)	M	Used
>Referenced SOP Class UID	(0008,1150)	M	Film Session SOP Class UID
>Referenced SOP Instance UID	(0008,1155)	M	Referenced Film Session SOP
Referenced Image Box Sequence	(2010,0510)	U	Not used
>Referenced SOP Class UID	(0008,1150)	U	
>Referenced SOP Instance UID	(0008,1155)	U	
Referenced Basic Annotation Sequence	(2010,0520)	U	Not used
>Referenced SOP Class UID	(0008,1150)	U	
>Referenced SOP Instance UID	(0008,1155)	U	

**12.5.1.2.5 Image Box Pixel Presentation Module**

The attributes described in table 12.5.2-6 apply when the DIMSE Service N-SET is used.

The first attributes in the table are used for both grayscale and color printing. The attributes within the sequences are used for each type of printing respectively.

TABLE 12.5-6 IMAGE BOX PIXEL PRESENTATION MODULE ATTRIBUTES

Attribute Name	Tag	USAGE (SCU)	Attribute Description
----------------	-----	-------------	-----------------------

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Image Position	(2020,0010)	M	1-n
Polarity	(2020,0020)	U	Not used
Requested Image Size	(2020,0030)	U	Not used
Basic Grayscale Image Sequence	(2020,0110)	M	
>Samples Per Pixel	(0028,0002)	M	Value = '1'
>Photometric Interpretation	(0028,0004)	M	MONOCHROM2, 0 = Black, 255 = White
>Rows	(0028,0010)	M	600 pixels
>Columns	(0028,0011)	M	800 pixels
>Pixel Aspect Ratio	(0028,0034)	MC	Not used
>Bits Allocated	(0028,0100)	M	Value always = 0008H
>Bits Stored	(0028,0101)	M	Value always = 0008H
>High Bit	(0028,0102)	M	Value always = 0007H
>Pixel Representation	(0028,0103)	M	Defined Value '0' - unsigned integer
>Pixel Data	(7FE0,0010)	M	
Basic Color Image Sequence	(2020,0111)	M	Only for Basic Color printing
>Samples Per Pixel	(0028,0002)	M	Value = '3'
>Photometric Interpretation	(0028,0004)	M	RGB
>Rows	(0028,0010)	M	600 pixels
>Columns	(0028,0011)	M	800 pixels
>Pixel Aspect Ratio	(0028,0034)	MC	Not used
>Bits Allocated	(0028,0100)	M	Value always = 0008H
>Bits Stored	(0028,0101)	M	Value always = 0008H
>High Bit	(0028,0102)	M	Value always = 0007H
>Pixel Representation	(0028,0103)	M	Defined Value '0' - unsigned integer
>Pixel Data	(7FE0,0010)	M	Color pixel planes data
>Planar Configuration	(0028, 0006)	M	0001H, Planar. Red plane first, then green, and blue

**12.5.1.2.6 Printer Module**

This section defines the attributes that are used to monitor the status of the printer. The attributes described in Table 12.5.2-7 apply when the DIMSE Service N-GET is used.

TABLE 12.5-7 PRINTER MODULE ATTRIBUTES

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Printer Status	(2110,0010)	U	Defined Values: NORMAL, WARNING, FAILURE. WARNING and FAILURE are reported to user.
Printer Status Info	(2110,0020)	U	Reported to user.
Printer Name	(2110,0030)	U	Ignored
Manufacturer	(0008,0070)	U	Ignored
Manufacturer Model Name	(0008,1090)	U	Not used
Device Serial Number	(0018,1000)	U	Not used
Software Versions	(0018,1020)	U	Not used
Date Last Calibration	(0018,1200)	U	Not used
Last Calibration	(0018,1201)	U	Requested, but not used



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

### **13.1 INTRODUCTION**

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

- Information Model Description
- Information Model Entity-Relationship Model
- Information Model Keys

### **13.2 STUDY ROOT INFORMATION MODEL DESCRIPTION**

This section defines the implementation of Study Root Query/Retrieve Information Model.

### **13.3 STUDY ROOT INFORMATION MODEL ENTITY-RELATIONSHIP MODEL**

#### **13.3.1 Entity Descriptions**

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

#### **13.3.2 VOLUSON S6/S8 Mapping of DICOM entities**

TABLE 13.3-1 MAPPING OF DICOM ENTITIES TO VOLUSON S6/S8 ENTITIES

<b>DICOM</b>	<b>Equipment</b>
Study	Patient
Series	Exam

### **13.4 INFORMATION MODEL KEYS**

Please refer to DICOM Standard PS 3.4 (Service Class Specifications) for a description of each of the levels contained within the Study Root Query/Retrieve Information Model. The following Level descriptions are included to specify what data elements are supported and what type of matching can be applied. It should be noted that they are the same ones as defined in the DICOM Standard PS 3.4 (Service Class Specifications).

#### **13.4.1 Study Level**

This section defines the keys at the Study Level of the Study Root Query/Retrieve Information Model that are supported by this implementation.

Table 13.4-1: Study Level Attributes - Study Root Q/R Information Model

<b>Attribute Name</b>	<b>Tag</b>	<b>Type</b>
Study Date	(0008,0020)	R
Study Time	(0008,0030)	R
Accession Number	(0008,0050)	S,*, U
Referring Physicians Name	(0008,0090)	S,*, U
Study Description	(0008,1030)	S,*, U
Performing Physicians Name	(0008,1050)	U
Operators Name	(0008,1070)	U
Admitting Diagnoses Description	(0008,1080)	U

Attribute Name	Tag	Type
Patients Name	(0010,0010)	*, U
Patient ID	(0010,0020)	*, U
Patients Birth Date	(0010,0030)	R
Patients Sex	(0010,0040)	S, *, U
Patients Size	(0010,1020)	U
Patients Weight	(0010,1030)	U
Study Instance UID	(0020,000D)	UNIQUE
Number of Patient Related Studies	(0020,1200)	U
Number of Study Related Series	(0020,1206)	U

Following are the types of matching that can be request by the implementation.

- Single Value Matching (S)
- Universal Matching (U)
- Wildcard Matching (\*)
- Date, Time Range Matching (R)

Table 13.4-3: Q/R Study Level and Location for Retrieve Attributes

Attribute Name	Tag	Note
Query Retrieve Level	(0008,0052)	Value = STUDY

Table 13.4-4: Q/R Specific Character Set Attributes

Attribute Name	Tag	Note
Specific Character Set	(0008,0005)	Set to "ISO_IR 100" if extended characters are used in query. ISO_IR 100 is supported in responses.

### 13.4.2 Series Level

This section defines the keys at the Series Level of the Study Root Query/Retrieve Information Model that are supported by this implementation.

Table 13.4-5: Series Level Attributes - Study Root Q/R Information Model

Attribute Name	Tag	Type of Matching
Study Date	(0008,0020)	R
Series Date	(0008,0021)	R
Study Time	(0008,0030)	R
Series Time	(0008,0031)	R
Modality	(0008,0060)	S
Referring Physicians Name	(0008,0090)	U
Study Description	(0008,1030)	U
Performing Physicians Name	(0008,1050)	U
Operators Name	(0008,1070)	U
Admitting Diagnoses Description	(0008,1080)	U
Patients Name	(0010,0010)	*, U
Patient ID	(0010,0020)	*, U
Patients Birth Date	(0010,0030)	R
Patients Sex	(0010,0040)	S, *, U
Patients Size	(0010,1020)	U
Patients Weight	(0010,1030)	U

<b>Attribute Name</b>	<b>Tag</b>	<b>Type of Matching</b>
Study Instance UID	(0020,000D)	U
Series Instance UID	(0020,000E)	UNIQUE
Number Of Patient Related Studies	(0020,1200)	U
Number Of Study Related Series	(0020,1206)	U
Number Of Series Related Images	(0020,1209)	U

The following conventions are used to define they of keys used in Query/Retrieve Information Models. Please refer to DICOM Standard part 4 for details on what Unique, Optional and Required attribute means.

Table 13.4-6: Q/R Study Level and Location for Retrieve Attributes

<b>Attribute Name</b>	<b>Tag</b>	<b>Note</b>
Query Retrieve Level	(0008,0052)	Value = SERIES

Table 13.4-7: Q/R Specific Character Set Attributes

<b>Attribute Name</b>	<b>Tag</b>	<b>Note</b>
Specific Character Set	(0008,0005)	Set to "ISO_IR 100" if extended characters are used in query. ISO_IR 100 is supported in responses.

## A. Standard Extended and Private Context Groups

Table A.0-1: Context ID 4 Anatomic Region

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SNM3		T-04000	Breast, NOS
SNM3		T-04002	Upper inner quadrant of breast, NOS
SNM3		T-04003	Lower inner quadrant of breast, NOS
SNM3		T-04004	Upper outer quadrant of breast, NOS
SNM3		T-04005	Lower outer quadrant of breast, NOS
SNM3		T-11218	Suprasternal notch
SNM3		T-15200	Fontanel of skull, NOS
SNM3		T-15460	Wrist joint, NOS
SNM3		T-15750	Ankle joint, NOS
SNM3		T-21000	Nose, NOS
SNM3		T-23000	Nasopharynx, NOS
SNM3		T-24100	Larynx, NOS
SNM3		T-25000	Trachea, NOS
SNM3		T-26000	Bronchus, NOS
SNM3		T-28000	Lung, NOS
SNM3		T-32000	Heart, NOS
SNM3		T-32100	Atrium, NOS
SNM3		T-32400	Ventricle, NOS
SNM3		T-51000	Mouth, NOS
SNM3		T-53000	Tongue, NOS
SNM3		T-55000	Pharynx, NOS
SNM3		T-55300	Hypopharynx, NOS
SNM3		T-56000	Esophagus, NOS
SNM3		T-57000	Stomach, NOS
SNM3		T-58200	Duodenum, NOS
SNM3		T-58400	Jejunum, NOS
SNM3		T-58600	Ileum, NOS
SNM3		T-59300	Colon, NOS
SNM3		T-59600	Rectum, NOS
SNM3		T-60610	Bile duct, NOS
SNM3		T-62000	Liver, NOS
SNM3		T-63000	Gallbladder, NOS
SNM3		T-65000	Pancreas, NOS
SNM3		T-65010	Pancreatic duct, NOS
SNM3		T-71000	Kidney, NOS
SNM3		T-72000	Renal pelvis, NOS
SNM3		T-72100	Calyx, NOS
SNM3		T-73000	Ureter, NOS
SNM3		T-74000	Bladder, NOS
SNM3		T-75000	Urethra, NOS
SNM3		T-81000	Vulva, NOS
SNM3		T-82000	Vagina, NOS
SNM3		T-83000	Uterus, NOS
SNM3		T-87000	Ovary, NOS
SNM3		T-91000	Penis, NOS
SNM3		T-94000	Testis, NOS
SNM3		T-98000	Scrotum, NOS
SNM3		T-A0100	Brain, NOS
SNM3		T-A7010	Spinal cord, NOS
SNM3		T-AA110	Sclera, NOS
SNM3		T-AA200	Cornea, NOS
SNM3		T-AA810	Eyelid, NOS
SNM3		T-AB000	Ear, NOS

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
SNM3		T-AB200	External auditory canal, NOS
SNM3		T-B3000	Adrenal gland, NOS
SNM3		T-B6000	Thyroid, NOS
SNM3		T-B7000	Parathyroid, NOS
SNM3		T-C3000	Spleen, NOS
SNM3		T-D1100	Head, NOS
SNM3		T-D1160	Scalp, NOS
SNM3		T-D1200	Face, NOS
SNM3		T-D1206	Buccal region of face
SNM3		T-D1206	Cheek, NOS
SNM3		T-D1212	Hypoglossal
SNM3		T-D1600	Neck, NOS
SNM3		T-D1603	Submandibular area
SNM3		T-D1620	Supraclavicular region of neck
SNM3		T-D2100	Back, NOS
SNM3		T-D2220	Shoulder, NOS
SNM3		T-D2310	Flank, NOS
SNM3		T-D2500	Hip, NOS
SNM3		T-D2600	Buttock, NOS
SNM3		T-D2600	Gluteal region
SNM3		T-D2700	Perineum, NOS
SNM3		T-D3000	Thorax, NOS
SNM3		T-D3300	Mediastinum, NOS
SNM3		T-D4000	Abdomen, NOS
SNM3		T-D4110	Right upper quadrant of abdomen
SNM3		T-D4120	Right lower quadrant of abdomen
SNM3		T-D4130	Left upper quadrant of abdomen
SNM3		T-D4140	Left lower quadrant of abdomen
SNM3		T-D4200	Epigastric region
SNM3		T-D4240	Hypogastric region
SNM3		T-D4240	Suprapubic region
SNM3		T-D4450	Omental bursa
SNM3		T-D4450	Omentum, NOS
SNM3		T-D4450	Retroperitoneum, NOS
SNM3		T-D6500	Pelvis, NOS
SNM3		T-D8100	Broad ligament, NOS
SNM3		T-D8200	Axilla, NOS
SNM3		T-D8300	Elbow, NOS
SNM3		T-D8700	Hand, NOS
SNM3		T-D9100	Thigh, NOS
SNM3		T-D9200	Knee, NOS
SNM3		T-D9310	Popliteal fossa
SNM3		T-D9400	Leg, NOS
SNM3		T-D9700	Foot, NOS
SNM3		A-04140	Vascular graft
SNM3		G-A15A	Intra-articular
SNM3		T-21300	Endo-nasal
SNM3		T-23050	Endo-nasopharyngeal
SNM3		T-32000	Endo-cardiac
SNM3		T-40000	Endo-vascular
SNM3		T-41000	Endo-arterial
SNM3		T-48000	Endo-venous
SNM3		T-56000	Endo-esophageal
SNM3		T-56000	Intra-esophageal
SNM3		T-59600	Endo-rectal
SNM3		T-71000	Endo-renal
SNM3		T-73000	Endo-ureteric
SNM3		T-74250	Endo-vesical

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SNM3		T-75000	Endo-urethral
SNM3		T-82000	Endo-vaginal
SNM3		T-D14000	Intracranial
SNM3		T-D3000	Intra-thoracic
SNM3		T-D3136	Parasternal
SNM3		T-D3213	Subxiphoid
SNM3		T-D4010	Intra-abdominal
SNM3		T-D4210	Subcostal
SNM3		T-D6221	Intra-pelvic
SNM3		T-D4212	Right hypochondriac region
SNM3		T-D4211	Left hypochondriac region
SNM3		T-D2300	Lumbar region
SNM3		T-D2342	Right lumbar region
SNM3		T-D2340	Left lumbar region
SNM3		T-D7000	Inguinal region
SNM3		T-D7010	Right inguinal region
SNM3		T-D7020	Left inguinal region
SNM3		T-D4230	Umbilical region

Table A.0-2: Context ID 220 Measurement Range Concepts

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
INCLUDE CID 226 Population Statistical Descriptors			
INCLUDE CID 227 Sample Statistical Descriptors			
INCLUDE CID 226 Population Statistical Descriptors			
INCLUDE CID 227 Sample Statistical Descriptors			

Table A.0-3: Context ID 223 Normal Range Values

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		R-0038B	Normal Range Upper Limit
SRT		R-10041	Normal Range Lower Limit

Table A.0-4: Context ID 225 Measurement Uncertainty Concepts

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		R-00363	+/- , range of measurement uncertainty
SRT		R-00364	+ , range of upper measurement uncertainty
SRT		R-00362	- , range of lower measurement uncertainty

Table A.0-5: Context ID 226 Population Statistical Descriptors

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		R-00337	95th Percentile Value of population
SRT		R-00338	90th Percentile Value of population
SRT		R-00346	1 Sigma Upper Value of population
SRT		R-00387	2 Sigma Upper Value of population
SRT		R-00317	Mean Value of population
SRT		R-00319	Median Value of population
SRT		R-00377	10th Percentile Value of population
SRT		R-00397	5th Percentile Value of population
SRT		R-00347	1 Sigma Lower Value of population
SRT		R-00388	2 Sigma Lower Value of population
DCM		121414	Standard deviation of population
DCM		121417	2 Sigma deviation of population

Table A.0-6: Context ID 227 Sample Statistical Descriptors

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121415	Percentile Ranking of measurement
DCM		121416	Z-Score of measurement

Table A.0-7: Context ID 228 Equation or Table

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121420	Equation
DCM		121421	Equation Citation
DCM		121424	Table of Values
DCM		121422	Table of Values Citation
DCM		121423	Method Citation

Table A.0-8: Context ID 244 Laterality

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		G-A100	Right
SRT		G-A101	Left
SRT		G-A102	Right and left
SRT		G-A103	Unilateral

Table A.0-9: Context ID 270 Observer Type

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121006	Person
DCM		121007	Device

Table A.0-10: Context ID 271 Observation Subject Class

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121025	Patient
DCM		121026	Fetus
DCM		121027	Specimen

Table A.0-11: Context ID 3627 Measurement Type

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		G-A437	Maximum
SRT		R-404FB	Minimum
SRT		R-00317	Mean
GEK		99006-0	last

Table A.0-12: Context ID 3627 Measurement Type

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		R-002E1	Best value
SRT		R-00317	Mean
SRT		R-00319	Median
SRT		R-0032E	Mode
SRT		R-00355	Point source measurement
SRT		R-00353	Peak to peak
SRT		R-41D27	Visual estimation
DCM		121427	Estimated
DCM		121428	Calculated

Table A.0-13: Context ID 3745 Calculation Method

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121427	Estimated
DCM		121428	Calculated

Table A.0-14: Context ID 6140 Calculation Methods

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121427	Estimated
DCM		112187	Unspecified method of calculation
DCM		112055	Agatston scoring method



Table A.0-15: Context ID 7452 Organizational Roles

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121081	Physician
DCM		121082	Nurse
DCM		121083	Technologist
DCM		121084	Radiographer
DCM		121085	Intern
DCM		121086	Resident
DCM		121087	Registrar
DCM		121088	Fellow
DCM		121089	Attending [Consultant]
DCM		121090	Scrub nurse
DCM		121091	Surgeon
DCM		121092	Sonologist
DCM		121093	Sonographer
DCM		121105	Radiation Physicist

Table A.0-16: Context ID 7453 Performing Roles

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		121094	Performing
DCM		121095	Referring
DCM		121096	Requesting
DCM		121097	Recording
DCM		121098	Verifying
DCM		121099	Assisting
DCM		121100	Circulating
DCM		121101	Standby

Table A.0-17: Context ID 7454 Species

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SNM3		L-85B00	homo sapiens

Table A.0-18: Context ID 7455 Sex

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		M	Male
DCM		F	Female
DCM		U	Unknown sex
DCM		MP	Male Pseudohermaphrodite
DCM		FP	Female Pseudohermaphrodite
DCM		H	Hermaphrodite
DCM		MC	Male changed to Female
DCM		FC	Female changed to Male
DCM		121104	Ambiguous sex
DCM		121102	Other sex
DCM		121103	Undetermined sex

Table A.0-19: Context ID 7456 Units of Measure for Age

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
UCUM	1.4	a	year
UCUM	1.4	mo	month
UCUM	1.4	wk	week
UCUM	1.4	d	day
UCUM	1.4	h	hour
UCUM	1.4	min	minute
Any copy made from the electronic version shall be considered an uncontrolled copy. Individuals with uncontrolled copies are responsible for ensuring the use of the current version.			

Table A.0-20: Context ID 12003 OB-GYN DATES

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11778-8	EDD
LN		11779-6	EDD from LMP
LN		11781-2	EDD from average ultrasound age
LN		11780-4	EDD from ovulation date
LN		11955-2	LMP
LN		33066-2	Estimated LMP by EDD
LN		11976-8	Ovulation date
LN		33067-0	Conception Date
GEK		99001-0	Conception Date by GA
GEK		99001-1	Conception Date from EDD
GEK		99002-0	Day of Cycle
GEK		99002-1	Day of Stimulation
GEK		99003-0	EDD by GA
GEK		99003-1	EDD from Conception Date
GEK		99004-0	Expected Ovulation
GEK		99005-0	Gestational Age
GEK		99005-1	Gestational Age by Conception Date
GEK		99005-2	Gestational Age by EDD
GEK		99005-3	Gestational Age by LMP
GEK		99005-4	Gestational Age by EFW
GEK		99007-0	EDD from composite ultrasound age

Table A.0-21: Context ID 12004 Fetal Biometry Ratios

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11947-9	HC/AC
LN		11871-1	FL/AC
LN		11872-9	FL/BPD
LN		11823-2	Cephalic Index
LN		11873-7	FL/HC
GEK		99401-0	Va/HEM
GEK		99402-0	Vp/HEM
GEK		99403-0	CC/TC

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99404-0	LHR LT
GEK		99405-0	LHR RT
GEK		99406-0	CVR LT
GEK		99407-0	CVR RT
GEK		99408-0	LTR

Table A.0-22: Context ID 12005 Fetal Long Bones Measurement

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11979-2	Abdominal Circumference
LN		11818-2	Anterior-Posterior Abdominal Diameter
LN		11819-0	Anterior-Posterior Trunk Diameter
LN		11820-8	Biparietal Diameter
LN		11824-0	BPD area corrected
LN		11860-4	Cisterna Magna
LN		11963-6	Femur Length
LN		11965-1	Foot length
LN		11984-2	Head Circumference
LN		11851-3	Occipital-Frontal Diameter
LN		11988-3	Thoracic Circumference
LN		33068-8	Thoracic Area
LN		11862-0	Tranverse Abdominal Diameter
LN		11863-8	Trans Cerebellar Diameter
LN		11864-6	Transverse Thoracic Diameter
LN		11853-9	Left Kidney thickness
LN		11834-9	Left Kidney length
LN		11825-7	Left Kidney width
LN		11855-4	Right Kidney thickness
LN		11836-4	Right Kidney length
LN		11827-3	Right Kidney width
SRT		GD705	Volume
GEK		33191-8	APAD * TAD
GEK		99502-0	Abdominal Diameter
99VP		99503-0	Binocular Distance
GEK		990202-1	EAR
GEK		99505-0	Fetal Trunk Area
GEK		99506-0	Min Abdominal Diameter
GEK		99507-0	AxT (APTD * TTD)
GEK		99508-0	nasal bone length
GEK		99509-0	Fractional Limb Arm Volume
GEK		99510-0	Fractional Limb Thigh Volume
GEK		99010-0	Cardiac Circumference
GEK		99008-0	Cavum Septum Pellucidum
LN		11792-7	Follicle Diameter
GEK		99706-0	Fibroid Diameter
GEK		99022-0	Anterior-Posterior Thoracic Diameter
GEK		99023-0	Transverse Cardiac Diameter
GEK		99024-0	Max Vertical Pocket
GEK		99025-0	Lt. Lung Area
GEK		99025-1	Lt. Lung Area Trace
GEK		99025-2	Lt. Lung Area Long Diameter
GEK		99025-5	Lt. Lung Area UCSF
GEK		99026-0	Lt. Lung CCAM D1
GEK		99026-1	Lt. Lung CCAM D2
GEK		99026-2	Lt. Lung CCAM D3
GEK		99026-3	Lt. Lung CCAM Vol

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
GEK		99027-0	Rt. Lung Area
GEK		99027-1	Rt. Lung Area Trace
GEK		99027-2	Rt. Lung Area Long Diameter
GEK		99027-5	Rt. Lung Area UCSF
GEK		99028-0	Rt. Lung CCAM D1
GEK		99028-1	Rt. Lung CCAM D2
GEK		99028-2	Rt. Lung CCAM D3
GEK		99028-3	Rt. Lung CCAM Vol
GEK		99029-0	Thorax Transverse Area

Table A.0-23: Context ID 12006 Fetal Long Bones Measurement

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
LN		11966-9	Humerus length
LN		11967-7	Radius length
LN		11969-3	Ulna length
LN		11968-5	Tibia length
LN		11964-4	Fibula length
LN		11962-8	Clavicle length

Table A.0-24: Context ID 12007 Fetal Cranium

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
LN		11966-9	Humerus length
LN		11967-7	Radius length
LN		11969-3	Ulna length
LN		11968-5	Tibia length
LN		11964-4	Fibula length
LN		11962-8	Clavicle length

Table A.0-25: Context ID 12008 OB-GYN Amniotic Sac

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
LN		11624-4	First Quadrant Diameter
LN		11626-9	Second Quadrant Diameter
LN		11625-1	Third Quadrant Diameter
LN		11623-6	Fourth Quadrant Diameter
SRT		M-02550	Diameter
LN		11627-7	Amniotic Fluid Index

Table A.0-26: Context ID 12009 Early Gestation Biometry Measurements

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
LN		11957-8	Crown Rump Length
LN		11850-5	Gestational Sac Diameter

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		33071-2	Spine Length
LN		11816-6	Yolk Sac length
LN		33069-6	Nuchal Translucency

Table A.0-27: Context ID 12011 Ultrasound Pelvis and Uterus

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11961-0	Cervix Length
LN		12145-9	Endometrium Thickness
LN		11842-2	Uterus Length
LN		11865-3	Uterus Width
LN		11859-6	Uterus Height
LN		33192-6	Uterus Volume
LN		11840-6	Left Ovary Length
LN		11829-9	Left Ovary Width
LN		11857-0	Left Ovary Height
LN		12164-0	Left Ovary Volume
LN		11841-4	Right Ovary Length
LN		11830-7	Right Ovary Width
LN		11858-8	Right Ovary Height
LN		12165-7	Right Ovary Volume
GEK		99017-1	Uterus Trace
GEK		99017-2	Endometrium Trace

Table A.0-28: Context ID 12013 Gestational Age Equations and Tables

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11885-1	Gestational Age by LMP
LN		11884-4	Average Ultrasound Age
LN		11889-3	AC, Campbell 1975
LN		33537-2	AC, Jeanty 1982
LN		33077-9	Abdominal Diameter, Lessoway 1998
LN		11901-6	BPDa, Hadlock 1982
LN		33086-0	BPD-oi, Chitty 1997
LN		33087-8	BPD-oo, Chitty 1997
LN		11918-0	Fibula, Merz 1987
GEK		99300-0	AD, Marsal
LN		33072-0	AC, ASUM 2000
LN		11892-7	AC, Hadlock 1984
LN		33073-8	AC, Hansmann1985
LN		11893-5	AC, Jeanty 1984
LN		33075-3	AC, Mertz 1988
LN		33076-1	AC, Shinozuka 1996
GEK		99301-0	AC, Tokyo
GEK		99301-1	AC, JSUM 2001
GEK		99301-2	AC, Kurmanavicius
GEK		99301-3	AC, Chitty
GEK		99301-4	AC, Nicolaidis
GEK		99301-5	AC, Hobbins
GEK		99301-6	AC, CFEF
GEK		99301-7	AC, Lessoway
GEK		99301-8	AC, Siriraj

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
GEK		99302-0	APAD, Merz
GEK		99303-0	APTD, Hansmann
LN		33078-7	AxT, Shinozuka 1996
GEK		99323-0	AxT, Tokyo
GEK		99304-0	BOD, Jeanty
LN		33079-5	BPD, ASUM 1989
LN		11902-4	BPD, Hadlock 1984
LN		33538-0	BPD, Hansmann 1986
LN		11905-7	BPD, Jeanty 1984
LN		11906-5	BPD, Kurtz 1980
LN		33081-1	BPD, Merz 1988
LN		33082-9	BPD, Osaka 1989
LN		33083-7	BPD, Rempen 1991
LN		11907-3	BPD, Sabbagha 1978
LN		33084-5	BPD, Shinozuka 1996
LN		33085-2	BPD, Tokyo 1986
GEK		99305-0	BPD, JSUM 2001
GEK		99305-1	BPD, Kurmanavicius
GEK		99305-2	BPD, Chitty
GEK		99305-3	BPD, Nicolaides
GEK		99305-4	BPD, Hobbins
GEK		99305-5	BPD, Campbell
GEK		99305-6	BPD, CFEF
GEK		99305-7	BPD, Johnsen
GEK		99305-8	BPD, Marsal
GEK		99305-9	BPD, ASUM-Old
GEK		99305-9	BPD, Chitty OI
GEK		99305-10	BPD, Lessoway
GEK		99305-11	BPD, Siriraj
GEK		99305-12	BPD, Verburg
GEK		99306-0	Cerebellum, Hill
GEK		99306-1	Cerebellum, Chitty
GEK		99306-2	Cerebellum, Goldstein
GEK		99306-3	Cerebellum, Nicolaides
GEK		99306-4	Cerebellum, Hobbins
LN		33089-4	CRL, ASUM 1991
LN		33090-2	CRL, ASUM 2000
LN		33091-0	CRL, Daya 1993
LN		11910-7	CRL, Hadlock 1992
LN		33540-6	CRL, Hansmann 1986
LN		11913-1	CRL, Nelson 1981
LN		33093-6	CRL, Osaka 1989
LN		33094-4	CRL, Rempen 1991
LN		11914-9	CRL, Robinson 1975
LN		33095-1	CRL, Shinozuka 1996
LN		33096-9	CRL, Tokyo 1986
GEK		99309-0	CRL, JSUM 2001
GEK		99309-1	CRL, Marsal
GEK		99309-2	CRL, Verburg
LN		33088-6	Clavical length, Yarkoni 1985
LN		33098-5	FL, Chitty 1997
LN		11920-6	FL, Hadlock 1984
LN		11921-4	FL, Hansmann 1985
LN		11922-2	FL, Hohler 1982
GEK		99310-0	FL, Jeanty
GEK		99310-1	FL, Merz
GEK		99310-2	FL, Tokyo
GEK		99310-3	FL, Warda
GEK		99310-4	FL, JSUM 2001

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99310-5	FL, Shinozuka 1996
GEK		99310-6	FL, Osaka
GEK		99310-7	FL, Kurmanavicius
GEK		99310-8	FL, ASUM 2000
GEK		99310-9	FL, Nicolaides
GEK		99310-10	FL, Hobbins
GEK		99310-11	FL, ASUMOLD
GEK		99310-12	FL, CFEF
GEK		99310-13	FL, Marsal
GEK		99310-14	FL, OBRIEN
GEK		99310-15	FL, Lessoway
GEK		99310-16	FL, Siriraj
GEK		99311-0	FTA, Osaka
LN		33097-7	Fibula, Jeanty 1983
GEK		99312-0	GS, Rempen
GEK		99312-1	GS, Hansmann
GEK		99312-2	GS, Hollaender
GEK		99312-3	GS, Hellman
GEK		99312-4	GS, Tokyo
GEK		99313-0	HC, Hadlock
GEK		99313-1	HC, Hansmann
GEK		99313-2	HC, Merz
GEK		99313-3	HC, Jeanty
GEK		99313-4	HC, Kurmanavicius
GEK		99313-5	HC, ASUM
GEK		99313-6	HC, Chitty
GEK		99313-8	HC, CFEF
GEK		99313-9	HC, JOHNSEN
GEK		99313-10	HC, Lessoway
GEK		99314-0	HL, Jeanty
GEK		99314-1	HL, Osaka
GEK		99314-2	HL, ASUM
GEK		99314-3	HL, Hobbins
GEK		99314-4	HL, Merz
GEK		99315-0	LV, Tokyo
LN		33118-1	Length of Vertebra, Tokyo 1986
GEK		99316-0	OFD, Hansmann
GEK		99316-1	OFD, Jeanty
GEK		99316-2	OFD, Kurmanavicius
GEK		99316-3	OFD, ASUM
GEK		99316-4	OFD, Chitty
GEK		99316-5	OFD, Nicolaides
GEK		99316-6	OFD, Merz
GEK		99317-0	RAD, Jeanty
GEK		99317-1	RAD, Merz
GEK		99318-0	TAD, Merz
GEK		99318-1	TAD, CFEF
GEK		99319-0	TIB, Merz
GEK		99319-1	TIB, Jeanty
GEK		99320-0	TTD, Hansmann
GEK		99321-0	ULNA, Jeanty
GEK		99321-1	ULNA, Merz
GEK		99322-0	MAD, Eik-Nes
GEK		99322-1	MAD, Kurmanavicius
GEK		99323-0	EFW, Hadlock
GEK		99323-1	EFW, Tokyo
GEK		99323-2	EFW, JSUM (2001)
GEK		99323-3	EFW, Shinozuka
GEK		99323-4	EFW, Osaka

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99324-0	HC/AC, Campbell 1977
GEK		99324-1	FL/HC, Hadlock 1984
GEK		99324-2	HSV <sub>a</sub> /HEM, Hansmann
GEK		99324-3	HSV <sub>a</sub> /HEM, Nicolaides
GEK		99324-4	HSV <sub>p</sub> /HEM, Nicolaides

Table A.0-29: Context ID 12014 OB Fetal Body Weight Equations and Tables

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11734-1	EFW by AC, BPD, FL, Hadlock 1984
LN		11750-7	EFW by AC, FL, Hadlock 1984
LN		11754-9	EFW by AC, HC Hadlock 1984
LN		33140-5	EFW by BPD, FTA, FL, Osaka 1990
LN		11756-4	EFW by AC, Campbell 1975
LN		11738-2	EFW by AC, BPD, Hadlock 1984
LN		11735-8	EFW by AC, BPD, FL, Hadlock 1985
LN		11732-5	EFW by AC, BPD, FL, HC, Hadlock 1985
LN		11751-5	EFW by AC, FL, Hadlock 1985
LN		11746-5	EFW by AC, FL, HC, Hadlock 1985
LN		33139-7	EFW by BPD, TTD, Hansmann 1986
LN		11739-0	EFW by AC and BPD, Shepard 1982
LN		33141-3	EFW1 by Shinozuka 1996
LN		33142-1	EFW2 by Shinozuka 1996
LN		33143-9	EFW3 by Shinozuka 1996
LN		33144-7	EFW by BPD, APAD, TAD, FL, Tokyo 1987
GEK		99007-0	EFW by AC, BPD Merz
GEK		99007-1	EFW by BPD, FL, MAD by Persson
GEK		99007-2	EFW by BPD, MAD by Persson
GEK		99007-3	EFW by BPD, MAD by Schild
GEK		99021-0	EFW by BPD, AC, AVol Lee
GEK		99021-1	EFW by BPD, AC, TVol Lee

Table A.0-30: Context ID 12015 Fetal Growth Equations and Tables

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		33546-3	AC (derived) by GA, Chitty 1994
LN		33556-2	BPD outer-inner by GA, Chitty 1994
LN		33152-0	BPD outer-outer by GA, Chitty 1994
LN		33157-9	Cephalic Index by GA, Chitty 1994
LN		33158-7	Cephalic Index by GA, Hadlock 1981
LN		33163-7	EFW by GA, Hansmann 1986
LN		33181-9	TCD by GA Goldstein 1987
GEK		99200-0	AD, Marsal
LN		33145-4	AC by GA, ASUM 2000
LN		33146-2	AC by GA, Hadlock 1984
LN		33147-0	AC (measured) by GA, Chitty 1994
LN		33148-8	AC by GA, Merz 1988
LN		33149-6	AC by GA, Shinozuka 1996
LN		99201-0	AC by GA, Hansmann
LN		99201-1	AC by GA, Tokyo
LN		99201-2	AC by GA, JSUM 2001
LN		33147-0	AC (measured) by GA, Chitty 1994



Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		33148-8	AC by GA, Merz 1988
LN		33149-6	AC by GA, Shinozuka 1996
GEK		99201-0	AC by GA, Hansmann
GEK		99201-1	AC by GA, Tokyo
GEK		99201-2	AC by GA, JSUM 2001
GEK		99201-3	AC by GA, Jeanty
GEK		99201-4	AC by GA, Kurmanavicius
GEK		99201-5	AC by GA, Nicolaidis
GEK		99201-6	AC by GA, CFEF
GEK		99201-7	AC by GA, Lessoway
GEK		99201-8	AC by GA, Verburg
GEK		99201-9	AC by GA, Jacot-Guillarmod
GEK		99201-10	AC by GA, Siriraj
GEK		99202-0	APAD by GA, Merz
GEK		99203-0	APTD by GA, Hansmann
GEK		99204-0	BOD by GA, Jeanty
LN		33151-2	BPD by GA, ASUM 2000
LN		33198-3	BPD by GA, Hadlock 1984
LN		33154-6	BPD by GA, Merz 1988
LN		33156-1	BPD by GA, Shinozuka 1996
LN		33153-8	BPD by GA, Jeanty 1982
LN		33155-3	BPD by GA, Rempen 1991
GEK		99205-0	BPD by GA, Hansmann
GEK		99205-1	BPD by GA, Sabbagha
GEK		99205-2	BPD by GA, Tokyo
GEK		99205-3	BPD by GA, JSUM 2001
GEK		99205-4	BPD by GA, Osaka
GEK		99205-5	BPD by GA, Kurmanavicius
GEK		99205-6	BPD by GA, Chitty
GEK		99205-7	BPD by GA, Nicolaidis
GEK		99205-8	BPD by GA, Campbell
GEK		99205-9	BPD by GA, CFEF
GEK		99205-10	BPD by GA, Marsal
GEK		99205-11	BPD by GA, Chitty OI
GEK		99205-12	BPD by GA, Lessoway
GEK		99205-13	BPD by GA, Jacot-Guillarmod
GEK		99205-14	BPD by GA, Siriraj
GEK		99205-15	BPD by GA, Verburg
GEK		99205-16	BPD by GA, McLennan
GEK		99206-0	Cerebellum by GA, Hill
GEK		99206-1	Cerebellum by GA, Goldstein
GEK		99206-2	Cerebellum by GA, Nicolaidis
GEK		99206-3	Cerebellum by GA, Jacot-Guillarmod
GEK		99206-4	Cerebellum by GA, Verburg
GEK		99207-0	Clavicle by GA, Yarkoni
GEK		99208-0	CM by GA, Nicolaidis
LN		33159-5	CRL by GA ASUM 2000
LN		33161-1	CRL by GA, Shinozuka 1996
LN		33160-3	CRL by GA, Rempen1991
GEK		99209-0	CRL by GA, Hansmann
GEK		99209-1	CRL by GA, Hadlock
GEK		99209-2	CRL by GA, Robinson
GEK		99209-3	CRL by GA, Tokyo
GEK		99209-4	CRL by GA, JSUM 2001
GEK		99209-5	CRL by GA, Osaka
GEK		99209-6	CRL by GA, Marsal
GEK		99209-7	CRL by GA, McLennan
LN		33165-2	FL by GA, ASUM 2000
LN		33166-0	FL by GA, Hadlock 1984

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		33167-8	FL by GA, Chitty 1994
LN		33168-6	FL by GA, Jeanty 1982
LN		33169-4	FL by GA, Merz 1988
LN		33170-2	FL by GA, Shinozuka 1996
GEK		99210-0	FL by GA, Hansmann
GEK		99210-1	FL by GA, Tokyo
GEK		99210-2	FL by GA, Warda
GEK		99210-3	FL by GA, JSUM 2001
GEK		99210-4	FL by GA, Osaka
GEK		99210-5	FL by GA, Kurmanavicius
GEK		99210-6	FL by GA, Nicolaidis
GEK		99210-7	FL by GA, CFEF
GEK		99210-8	FL by GA, Marsal
GEK		99210-9	FL by GA, OBRIEN
GEK		99210-10	FL by GA, Lessoway
GEK		99210-11	FL by GA, ASUMOLD
GEK		99210-12	FL by GA, Chitty 2002
GEK		99210-13	FL by GA, Jacot-Guillarmod
GEK		99210-14	FL by GA, Siriraj
GEK		99210-15	FL by GA, Verburg
GEK		99211-0	FTA by GA, Osaka
LN		33171-0	GS by GA, Rempen 1991
GEK		99212-0	GS by GA, Hollaender
GEK		99212-1	GS by GA, Hellman
GEK		99212-2	GS by GA, Tokyo
GEK		99212-3	GS by GA, Nyberg
LN		33172-8	HC by GA, ASUM 2000
LN		33173-6	HC by GA, Hadlock 1984
LN		33174-4	HC derived by GA, Chitty 1994
LN		33175-1	HC by GA, Jeanty 1982
LN		33176-9	HC by GA, Merz 1988
GEK		99213-0	HC by GA, Hansmann
GEK		99213-1	HC by GA, Kurmanavicius
GEK		99213-2	HC by GA, Nicolaidis
GEK		99213-3	HC by GA, CFEF
GEK		99213-4	HC by GA, Lessoway
GEK		99213-5	HC by GA, Jacot-Guillarmod
GEK		99213-6	HC by GA, Siriraj
GEK		99213-7	HC by GA, Verburg
LN		33177-7	Humerus Length by GA, ASUM 2000
GEK		99214-0	HL by GA, Jeanty
GEK		99214-1	HL by GA, Osaka
GEK		99214-2	HL by GA, Merz
GEK		99214-3	HL by GA, Chitty 2002
GEK		99214-4	HL by GA, Siriraj
LN		33178-5	OFD by GA, ASUM 2000
LN		33179-3	OFD by GA, Chitty 1994
GEK		99216-0	OFD by GA, Hansmann
GEK		99216-1	OFD by GA, Jeanty
GEK		99216-2	OFD by GA, Kurmanavicius
GEK		99216-3	OFD by GA, Nicolaidis
GEK		99216-4	OFD by GA, Merz
LN		33180-1	Radius by GA, Jeanty 1983
GEK		99217-0	RAD by GA, Merz
GEK		99217-1	RAD by GA, Chitty 2002
GEK		99217-2	RAD by GA, Siriraj
GEK		99218-0	TAD by GA Merz
GEK		99218-1	TAD by GA CFEF
GEK		99218-2	TAD by GA, Jacot-Guillarmod

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99219-0	TIB by GA Jeanty
GEK		99219-1	TIB by GA Merz
GEK		99219-2	TIB by GA, Chitty 2002
GEK		99219-3	TIB by GA, Siriraj
GEK		99220-0	TTD by GA Hansmann
GEK		99221-0	ULNA by GA Jeanty
GEK		99221-1	ULNA by GA Merz
GEK		99221-2	ULNA by GA, Chitty 2002
GEK		99221-3	ULNA by GA, Siriraj
GEK		99222-0	MAD by GA Eik-Nes
GEK		99222-1	MAD by GA Kurmanavicius
LN		33150-4	AxT by GA, Shinozuka 1996
GEK		99223-0	AxT by GA, Tokyo
GEK		99224-0	NBL by GA, Sonok
GEK		99224-1	NBL by GA, Bunduki
GEK		99225-0	Length of Vertebra by GA, Tokyo
LN		33164-5	Fibula by GA, Jeanty 1983
GEK		99226-0	Fibula by GA, Chitty 2002
GEK		99226-1	Fibula by GA, Siriraj
GEK		99227-0	Foot by GA, Chitty 2002
GEK		99228-0	AVol by GA, Lee
GEK		99229-0	TVol by GA, Lee
GEK		99230-0	TC by GA, Chitkara
GEK		99231-0	AC by GA, Johnsen
GEK		99232-0	HC by GA, Johnsen
GEK		99233-0	FL by GA, Johnsen
GEK		99234-0	Lungarea Lt. by GA, Peralta
GEK		99235-0	Lungarea Rt. by GA, Peralta

Table A.0-31: Context ID 12017 Growth Distribution Rank

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
DCM		125012	Growth Percentile Rank
DCM		125013	Growth Z-score

Table A.0-32: Context ID 12018 OB-GYN SUMMARY

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11878-6	Number of Fetuses
LN		11886-9	Gestational Age by ovulation date

Table A.0-33: Context ID 12019 OB-GYN FETUS SUMMARY

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		18185-9	Gestational Age
LN		11888-5	Composite Ultrasound Age
LN		11885-1	Gestational Age by LMP
LN		11727-5	Estimated Weight
LN		11767-1	EFW percentile rank

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11948-7	Fetal Heart Rate
LN		11884-4	Average Ultrasound Age
LN		11781-2	EDD from average ultrasound age
GEK		99007-0	EDD from composite ultrasound age
GEK		99021-0	Atrial Fetal Heart Rate

Table A.0-34: Context ID 12111 Abdominal Arteries (lateral)

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		T-46640	Accessory Renal Artery
SRT		T-46410	Gastric Artery
SRT		T-46421	Common Hepatic Artery
SRT		T-46980	Ovarian Artery
SRT		T-46970	Testicular Artery
SRT		T-88810	Umbilical Artery
SRT		T-46820	Uterine Artery
SNM3		T-F1810	Umbilical artery

Table A.0-35: Context ID 12112 Abdominal Arteries (unilateral)

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		T-46400	Celiac Axis
SRT		T-46510	Superior Mesenteric Artery

Table A.0-36: Context ID 12119 Vascular Ultrasound Property

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
INCLUDE CID 12120 Blood Velocity Measurements			
INCLUDE CID 12121 Vascular Indices and Ratios			
INCLUDE CID 12122 Other Vascular Properties			

Table A.0-37: Context ID 12120 Blood Velocity Measurements

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11653-3	End Diastolic Velocity
LN		11665-7	Minimum Diastolic Velocity
LN		11726-7	Peak Systolic Velocity
LN		20352-1	Time averaged mean velocity
LN		11692-1	Time averaged peak velocity

Table A.0-38: Context ID 12121 Vascular Indices and Ratios

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		20167-3	Acceleration Index
SRT		G-0371	% Area Reduction
SRT		G-0372	% Diameter Reduction
LN		12008-9	Pulsatility Index
LN		12023-8	Resistivity Index
LN		12144-2	Systolic to Diastolic Velocity Ratio
LN		33867-3	Velocity ratio
GEK		99500-0	Pressure Gradient mean
GEK		99013-0	Peak velocity index for veins
GEK		99013-1	Preload Index
GEK		99013-3	Pulsatility index for veins

Table A.0-39: Context ID 12122 Other Vascular Properties

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		20168-1	Acceleration Time
LN		20217-6	Deceleration Time
SRT		G-0364	Vessel lumen diameter
SRT		G-0365	Vessel outside diameter
LN		20354-7	Velocity Time Integral
LN		8867-4	Heart Rate
GEK		99501-0	Cycle Time
GEK		99012-0	Peak Diastolic Velocity
SNM3		M-02550	Diameter
LN		20352-1	Mean Velocity
GEK		99010-0	Venous Flow
GEK		99018-1	TPV

Table A.0-40: Context ID 12140 Pelvic Vasculature Anatomical Location

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		T-F1810	Umbilical Artery
SRT		T-F1820	Umbilical Vein
SRT		T-46980	Ovarian Artery
SRT		T-48780	Ovarian Vein
SRT		T-46820	Uterine Artery
SRT		T-49010	Uterine Vein
SRT		T-F1412	Vitelline Artery of Placenta
SRT		T-F1413	Vitelline Vein of Placenta
SRT		T-46710	Common Iliac Artery
99VP		VP-0001	Ductus Venosus
SRT		T-40003	Entire Vessel
SNM3	3.4	T-45010	Carotid Artery
99VP		VP-0004	Ductus Arteriosu
GEK		99918-1	Umbilical Artery
GEK		99918-2	Inferior Vena Cava

Table A.0-41: Context ID 12141 Fetal Vasculature Anatomical Location

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
SRT		T-42000	Aorta
SRT		T-D0765	Descending Aorta
SRT		T-45600	Middle Cerebral Artery
SRT		T-48581	Pulmonary Vein
SRT		T-44000	Pulmonary Artery

Table A.0-42: Context ID 99101 OB-M-Generic

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99601-0	M-Distance
GEK		99602-0	M-Time
GEK		99603-0	M-Velocity
GEK		99604-0	Stenosis % Dist
GEK		99605-0	Heart Rate

Table A.0-43: Context ID 99102 OB-GYN Amniotic Sac OLD

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
LN		11627-7	Amniotic Fluid Index
GEK		99009-0	AMNIOTIC FLUID INDEX LEN q1
GEK		99009-1	AMNIOTIC FLUID INDEX LEN q2
GEK		99009-2	AMNIOTIC FLUID INDEX LEN q3
GEK		99009-3	AMNIOTIC FLUID INDEX LEN q4
GEK		99009-4	AMNIOTIC FLUID INDEX.SUM ;four quadrant index

Table A.0-44: Context ID 99103 SonoVCADLabor

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99016-0	SonoVCADLabor
GEK		99016-1	Aquisition Time
GEK		99016-2	Head Direction
GEK		99016-3	Midline Angle
GEK		99016-4	Head Progression
GEK		99016-5	Head Progression Angle
GEK		99016-6	Head Station
GEK		99016-7	Head Rotation
GEK		99016-8	Occiput Position
GEK		99016-9	Cervix Dilatation

Table A.0-45: Context ID 99104 Follicle SonoAVC

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99015-0	Follicle Diameter d
GEK		99015-1	Follicle Diameter dx

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99015-2	Follicle Diameter dy
GEK		99015-3	Follicle Diameter dz
GEK		99015-4	Follicle Diameter dmean
GEK		99015-5	Volume
GEK		99015-6	RGB-Red
GEK		99015-7	RGB-Green
GEK		99015-8	RGB-Blue
GEK		99015-9	Ovarian Follicle SonoAVC

Table A.0-46: Context ID 99105 Fetal Echo Measurement

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99901-2	Ventricle Length Systolic
GEK		99901-3	Ventricle Length Diastolic
GEK		99901-4	Ventricle Width Systolic
GEK		99901-5	Ventricle Width Diastolic
GEK		99901-6	Atrial Length Systolic
GEK		99901-7	Atrial Length Diastolic
GEK		99901-8	Atrial Width Systolic
GEK		99901-9	Atrial Width Diastolic
GEK		99901-10	Ventricle Inlet Diameter
GEK		99901-11	Ventricle Area
GEK		99901-12	Wall Thickness
GEK		99901-13	Septum
GEK		99901-14	Tricuspid Valve Orifice
GEK		99901-15	Mitral Valve Orifice
GEK		99902-2	Heart Diagonally
GEK		99902-3	Thorax Diagonally
GEK		99902-4	CTR
GEK		99902-5	Cardiac Circumference
GEK		99902-6	Thorax Circumference
GEK		99902-7	CTCR
GEK		99902-8	Heart Area
GEK		99902-9	Thorax Area
GEK		99902-10	CTAR
GEK		99902-11	Cardiac Axis
GEK		99903-2	Pulmonary Artery
GEK		99903-3	Pulmonary Valve Width
GEK		99903-4	Main Pulmonary Artery
GEK		99903-5	Aortic Valve Width
GEK		99903-6	Aortic Root Diameter
GEK		99903-7	Aortic Trunk Dim
GEK		99903-8	Ao/PA Ratio
GEK		99903-9	Arterial Duct Diameter
GEK		99904-2	Anulus
GEK		99904-3	Asc. Aortic Diameter
GEK		99904-4	Desc. Aortic Diameter
GEK		99905-2	Vena Cava Superior
GEK		99905-3	Vena Cava Inferior
GEK		99906-2	Ventricle Dim. Systolic
GEK		99906-3	Ventricle Dim. Diastolic
GEK		99906-4	Ventricle Wall Systolic
GEK		99906-5	Ventricle Wall Diastolic
GEK		99906-6	Atrium dim. Systolic
GEK		99906-7	Atrium dim. Diastolic
GEK		99906-8	Septum Systolic

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99906-9	Septum Diastolic
GEK		99906-10	Biventricle inner dim. Systolic
GEK		99906-11	Biventricle inner dim. Diastolic
GEK		99906-12	Biventricle outer dim. Systolic
GEK		99906-13	Biventricle outer dim. Diastolic
GEK		99906-14	Mitral Valve open exc.
GEK		99906-15	Tricuspid Valve open exc.
GEK		99907-2	Aortic Valve Diameter
GEK		99907-3	Pulm. Valve Diameter
GEK		99908-2	E-Wave
GEK		99908-3	A-Wave
GEK		99908-4	E/A
GEK		99908-5	VTI
GEK		99908-6	V max regurg
GEK		99909-2	E-Wave
GEK		99909-3	A-Wave
GEK		99909-4	E/A
GEK		99909-5	VTI
GEK		99909-6	V max regurg
GEK		99909-7	IVRT
GEK		99910-2	V max
GEK		99910-3	VTI
GEK		99910-4	RVCO
GEK		99910-5	TPV
GEK		99910-6	TAm <sub>ax</sub>
GEK		99910-7	TAm <sub>ean</sub>
GEK		99911-2	V max
GEK		99911-3	VTI
GEK		99911-4	LVCO
GEK		99911-5	TPV
GEK		99911-6	TAm <sub>ax</sub>
GEK		99911-7	TAm <sub>ean</sub>
GEK		99912-2	V max
GEK		99912-3	TAm <sub>ax</sub>
GEK		99912-4	TAm <sub>ean</sub>
GEK		99913-2	V max
GEK		99913-3	VTI
GEK		99913-4	RVCO
GEK		99913-5	TPV
GEK		99913-6	TAm <sub>ax</sub>
GEK		99913-7	TAm <sub>ean</sub>
GEK		99913-8	Acceleration Time
GEK		99913-9	Ejection Time
GEK		99914-2	V max
GEK		99914-3	VTI
GEK		99914-4	LVCO
GEK		99914-5	TPV
GEK		99914-6	TAm <sub>ax</sub>
GEK		99914-7	TAm <sub>ean</sub>
GEK		99914-8	Acceleration Time
GEK		99914-9	Ejection Time
GEK		99915-2	Diameter
GEK		99915-3	Area
GEK		99915-4	V max
GEK		99915-5	PeakPG
GEK		99915-6	TAm <sub>ax</sub>
GEK		99915-7	TAm <sub>ean</sub>
GEK		99915-8	MnPG
GEK		99915-9	VTI



Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99915-10	FHR
GEK		99915-11	SV
GEK		99915-12	LVO
GEK		99915-13	ICT
GEK		99915-14	Ejection Time
GEK		99915-15	IRT
GEK		99915-16	Tei-Index
GEK		99916-2	Diameter
GEK		99916-3	Area
GEK		99916-4	V max
GEK		99916-5	PeakPG
GEK		99916-6	TAmx
GEK		99916-7	TAmx
GEK		99916-8	MnPG
GEK		99916-9	VTI
GEK		99916-10	FHR
GEK		99916-11	SV
GEK		99916-12	RVO
GEK		99916-13	ICT
GEK		99916-14	Ejection Time
GEK		99916-15	IRT
GEK		99916-16	Tei-Index
GEK		99917-2	Diastolic Velocity
GEK		99917-3	Systolic Velocity
GEK		99917-4	S/D
GEK		99917-5	A. Rev Velocity
GEK		99917-6	A. Rev Duration

Table A.0-47: Context ID 99106 Fetal Echo Measurement Method

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99901-1	4-Chamber-view
GEK		99903-1	Outow Tract
GEK		99905-1	Venous
GEK		99906-1	4-Chamber-view M-Mode
GEK		99907-1	Outow Tract M-Mode
GEK		99915-1	LVOT
GEK		99916-1	RVOT

Table A.0-48: Context ID 99107 Fetal Echo Finding Site

Coding Scheme Designator (0008,0102)	Coding Scheme Version (0008,0103)	Code Value (0008,0100)	Code Meaning (0008,0102)
GEK		99902-1	Thorax
GEK		99904-1	Aortic arch
GEK		99908-1	Tricuspid Valve
GEK		99909-1	Mitral Valve
GEK		99910-1	Main Pulmonary Artery
GEK		99911-1	Aorta
GEK		99912-1	Aorta Isthmus
GEK		99913-1	Pulmonary Valve
GEK		99914-1	Aortic Valve
GEK		99917-1	Pulmonary Veins

Table A.0-49: Context ID 99108 Pelvic Floor

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
GEK		99919-0	Pelvic Floor
GEK		99919-1	Pelvic Floor Measurements
GEK		99919-2	Bladder Height
GEK		99919-3	Bladder Depth
GEK		99919-4	Residual Urine
GEK		99919-5	Detr. Wall th.
GEK		99919-6	Bladder neck rest
GEK		99919-7	Bladder neck stress
GEK		99919-8	Bladder neck desc.
GEK		99919-9	Urethral rotation
GEK		99919-10	Bladder desc. Max
GEK		99919-11	Uterine desc. Max
GEK		99919-12	Rect. Amp. Desc. Max
GEK		99919-13	Depth of rectocele
GEK		99919-14	Levator hiat. Stress

Table A.0-50: Context ID 99109 Pelvic Floor Report

<b>Coding Scheme Designator (0008,0102)</b>	<b>Coding Scheme Version (0008,0103)</b>	<b>Code Value (0008,0100)</b>	<b>Code Meaning (0008,0102)</b>
GEK		99020-0	Pelvic Floor Finding
GEK		99020-1	Pelvic Floor Findings
GEK		99020-2	unneling
GEK		99020-3	urethral kinking

## B. Standard Extended and Private Context Groups

Table B.0-1: TID 300 Measurement

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			NUM	\$Measurement	1	M		Units = \$Units
2	>	HAS CONCEPT MOD	CODE	(, , ModType)	1	U		\$ModValue
3	>	HAS CONCEPT MOD	CODE	SRT(G-C036, , Measurement Method)	1	MC		\$ModThod
4	>	HAS CONCEPT MOD	CODE	SRT(121401, , Derivation)	1	U		\$Derivation
5	>	HAS CONCEPT MOD	CODE	SRT(G-C0E3, , Finding Site)	1-n	U		\$TargetSite
6	>>	HAS CONCEPT MOD	CODE	SRT(G-C171, , Laterality)	1-n	U		DCID (244) Laterality
7	>>	HAS CONCEPT MOD	CODE	SRT(G-A1F8, , Topographical modifier)	1	U		\$TargetSiteMod
8	>	HAS CONCEPT MOD	INCLUDE	DTID(310, , Measurement Properties)	1	U		\$RefAuthority = \$RefAuthority \$RangeAuthority = \$RangeAuthority
9	>	INFERRED FROM	NUM	DTID(, , )	1-n	U		
10	>	R- INFERRED FROM	NUM	DTID(, , )	1-n	U		
11	>	INFERRED FROM	INCLUDE	DTID(315, , Equation or Table )	1	U	XOR Row 12	\$Equation = \$Equation
12	>	INFERRED FROM	TEXT	DTID(228, , Equation or Table )	1	U	XOR Row 11	\$Purpose = \$ImagePurpose
13	>		INCLUDE	DTID(320, , Image or Spatial Coordinates)	1-n	U		\$Purpose = \$WavePurpose
14	>		INCLUDE	DTID(321, , Waveform or Temporal Coordinates )	1-n	U		
15	>		INCLUDE	DTID(1000, , Quotation )	1	U		

Table B.0-2: TID 310 Measurement

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CODE	EV (121402, DCM, Normality )	1	U		DCID (222) Normality Codes
2			INCLUDE	DTID (311, , Measurement Statistical Properties )	1	U		\$RefAuthority = \$RefAuthority
3			INCLUDE	DTID (312, ,Normal Range Properties)	1	U		\$RangeAuthority = \$RangeAuthority
4			CODE	EV(121403,DCM, Level of Significanc)	1	U		DCID (220) Level Of Significance
5			NUM	DTID(225,, Measurement Uncertainty Concepts)	1-n	U		
6			CODE	EV(121404,DCM, Selection Status)	1	U		DCID (244) Laterality

Table B.0-3: TID 311 Measurement Statistical Properties

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			NUM	DCID(221,, Measurement Range Concepts)	1	M		
2			TEXT	EV(121405,DCM, Population description)	1	U		
3			TEXT	EV(121406,DCM, Reference Authority)	1	UC	XOR row 3	
4			CODE	EV(121406,DCM, ReferenceAuthority)	1	UC	XOR row 4	\$RefAuthority

Table B.0-4: TID 312 Normal Range Properties

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			NUM	DCID(223,, Normal Range Values)	1-n	M		
2			TEXT	EV(121407,DCM, Procedure Context)	1	U		
3			TEXT	EV(121408,DCM, Subject Context)	1	UC	XOR row 4	
4			CODE	EV(121408,DCM, Normal Range Authority)	1	UC	XOR row 2	

Table B.0-5: TID 315 Equation or Table

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CODE	DCID(228,, Equation or Table)	1-n	M		
2		HAS PROPERTIES	NUM		1	U		
3		R-HAS PROPERTIES	NUM		1	U		

Table B.0-6: TID 320 Image or Spatial Coordinates

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1		INFERRED FROM	IMAGE	(,,\$Purpose)	1	MC	XOR Rows 2,3	
2		R- INFERRED FROM	IMAGE	(,,\$Purpose)	1	MC	XOR Rows 1,3	
3		INFERRED FROM	SCOORD	(,,\$Purpose)	1	MC	XOR Rows 1,2	
4	>	SELETCED FROM	IMAGE		1	MC	XOR Rows 5	
5	>	R- INFERRED FROM	IMAGE		1	MC	XOR Rows 4	

Table B.0-7: TID 321 Waveform or Temporal Coordinates

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1		INFERRED FROM	WAVE-FORM	(,,\$Purpose)	1	MC	XOR Rows 2,3	
2		R- INFERRED FROM	WAVE-FORM	(,,\$Purpose)	1	MC	XOR Rows 1,3	
3		INFERRED FROM	TCOORD	(,,\$Purpose)	1	MC	XOR Rows 1,2	

4	>	SELECTED FROM	WAVE-FORM		1	MC	XOR Rows 5	
5	>	R- INFERRED FROM	WAVE-FORM		1	MC	XOR Rows 4	

Table B.0-8: TID 1000 QUOTATION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1		HAS OBS CONTEXT	CODE	EV(121001,DCM, Quotation Mode)	1	M		EV (121003, DCM, "Document") EV (121004, DCM, "Verbal")
2		HAS OBS CONTEXT	COMPO-SITE	EV(121002,DCM, Quoted Source)	1	MC	Required if quoted material source is a DICOM composite object	
3		HAS OBS CONTEXT	INCLUDE	EV(1001,, Observation Context)	1	M		

Table B.0-9: TID 1001 OBSERVATION CONTEXT

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1		HAS OBS CONTEXT	INCLUDE	DTID(1002,, 'Observer Context')	1-n	MC	Required if all aspects of observer context are not inherited.	
2		HAS OBS CONTEXT	INCLUDE	DTID(1005,DCM, 'Procedure Context')	1-n	MC	Required if all aspects of observer context are not inherited.	
3		HAS OBS CONTEXT	INCLUDE	DTID(1006,DCM, 'Subject Context')	1-n	MC	Required if all aspects of observer context are not inherited.	

Table B.0-10: TID 1002 OBSERVER CONTEXT

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1		HAS OBS CONTEXT	CODE	EV(121005,DCM, Observer Type)	1	MC	IFF Observer type is device	DCID (270) Observer Type Defaults to (121006,DCM, "Person")
2		HAS OBS CONTEXT	INCLUDE	DTID(1003,, Person Observer identifying attribute)	1	MC	IFF Row 1 value = (121006,DCM, "Person") Or Row 1 is absent	

3		HAS OBS CONTEXT	INCLUDE	DTID(1004,, Device Observer identifying attributes)	1	MC	IFF Row 1 value = (121007,DCM, "Device")	
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Table B.0-11: TID 1003 PERSON OBSERVER IDENTIFYING ATTRIBUTES

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			PNAME	EV(121008,DCM, Person Observer Name)	1	M		
2			TEXT	EV(121009,DCM, Person Observer's Organization Name)	1	U		Defaults to Institution Name (0008,0080) of the General Equipment Module
3			CODE	EV(121010,DCM,Person Observer's Role in the Organization)	1	U		BCID(7452) Organizational Roles
4			CODE	EV(121011,DCM, Person Observer's Role in this Procedure)	1	U		BCID(7453) Performing Roles

Table B.0-12: TID 1004 DEVICE OBSERVER IDENTIFYING ATTRIBUTES

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			UIDREF	EV(121012,DCM, Device Observer UID)	1	M		
2			TEXT	EV(121013,DCM, Device Observer Name)	1	U		Defaults to value of Station Name (0008,1010) in General Equipment Module
3			TEXT	EV(121014,DCM, Device Observer Manufacturer)	1	U		Defaults to value of Manufacturer (0008,0070) in General Equipment Module
4			TEXT	EV(121015,DCM, Device Observer Model Name)	1	U		Defaults to value of Manufacturer's Model Name (0008,1090) in General Equipment Module
5			TEXT	DCM(121016,DCM, Device Observer Serial Number)	1	U		Defaults to value of Device Serial Number (0018,1000) in General Equipment Module
6			TEXT	EV(121017,DCM, Device Observer Physical Location During observation)	1	U		

Table B.0-13: TID 1005 PROCEDURE CONTEXT

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
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1			UIDREF	EV(121018,DCM, Procedure Study Instance UID)	1	M		Defaults to Study Instance UID (0020,000D ) of General Study Module
2			TEXT	EV(121019,DCM, Procedure Study Component UID)	1	U		Defaults to Referenced SOP Instance UID (0008,1155) in Referenced Performed Procedure Step Sequence (0008,1111) of General SeriesModule
3			TEXT	EV(121020,DCM, Device Observer Manufacturer)	1	U		Defaults to (0040,2016)
4			TEXT	EV(121021,DCM, Device Observer Model Name)	1	U		Defaults to (0040,2017)
5			TEXT	EV(121022,DCM, Device Observer Serial Number)	1	U		Defaults to (0008,0050)
6			TEXT	EV(121023,DCM, Device Observer Physical Location During observation)	1	U		Defaults to Procedure Code Sequence (0008,1032) of General Study Module

Table B.0-14: TID 1006 SUBJECT CONTEXT

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CODE	EV(121024,DCM, Procedure Study Instance UID)	1	M	IFF subject is not the Patient	DCID (271) Observation Subject Class Defaults to (121025, DCM, Patient")
2			INCLUDE	DTID(1007,,Subject Context, Patient)	1	UC	IFF Row 1 value = (121025,DCM, "Patient") or Row 1 is absent	May be used for human or animal patients
3			INCLUDE	DTID(1008,,Subject Context, Fetus)	1	UC	IFF Row 1 value = (121026,DCM, "Fetus")	May be used for human or animal fetuses
4			INCLUDE	DTID(1009,,Subject Context, Specimen)	1	UC	IFF Row 1 value = (121027, DCM, "Specimen")	

Table B.0-15: TID 1007 SUBJECT CONTEXT, PATIENT

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			UIDREF	EV(121028,DCM, Subject UID)	1	U		E.g. SOP Instance UID of Detached Patient Instance
2			PNAME	EV(121029,DCM, Subject Name)	1	MC	Required if not inherited.	Defaults to value of Patient's Name (0010,0010) in Patient Module
3			CODE	EV(121030,DCM, Subject ID)	1	MC	Required if not inherited.	Defaults to value of Patient ID (0010,0020) in Patient Module

4			DATE	EV(121031,DCM, Subject Birth Date)	1	U		Defaults to value of Patient's Birth Date (0010,0030) in Patient Module
5			CODE	EV(121032,DCM, Subject Sex)1	1	U		Defaults to value equivalent to Patient's Sex (0010,0040) in Patient Module DCID (7455) Sex
6			NUM	EV(121033,DCM, Subject Age)	1	U		Defaults to value of Patient's Age (0010,1010) in Patient Study Module Units DCID (7456) Units of Measure for Age
7			CODE	EV(121034,DCM, Subject Species)	1	MC		DCID (7454) Species to define various animals or plants, e.g. veterinary or research. Defaults to (L-85B00,SNM3,"homo sapiens").

Table B.0-16: TID 1008 SUBJECT CONTEXT, FETUS

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			PNAME	EV(121036,DCM, 'Mother of fetus')	1	U		Defaults to an observation subject that is a patient prior to replacing the Observation Subject Class with Fetus.
2			UIDREF	EV(121028,DCM, 'Subject ID')	1	U		For longitudinal tracking of individual fetuses
3			TEXT	EV(121030,DCM, 'Subject ID')	1	MC	IF row 4 is absent	For longitudinal tracking of individual fetuses (human readable value e.g. "A" or "1")
4			TEXT	EV(11951-1,LN, 'Fetus ID')	1	MC	IF row 3 is absent	For separation of multiple fetuses during this procedure e.g. fetus '1' of '2' ...not for Longitudinal comparisons.; ie. the *m* of fetus *m* of *n*
5			NUM	EV(11878-6,DCM, 'Number of Fetuses')	1	U		i.e. the "n" of fetus "m" of "n" Units EV (1,UCUM,"no units")

Table B.0-17: TID 1009 SUBJECT CONTEXT, SPECIMEN

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			UIDREF	EV(121039,DCM, Specimen UID)	1	U		
2			TEXT	EV(121040,DCM, Specimen Accession Number)	1	U		Defaults to value of Specimen Accession Number (0040,050A ) in Specimen Identification Module
3			INCLUDE	DTID(1007,DCM, patient subject contex)	1	UC	IFF the source of the specimen is a human or animal patient	



4			TEXT	EV(121041,DCM, Specimen Identifier)	1	U		Defaults to value of Specimen Identifier (0040,0551) if a single item of Specimen Sequence (0040,0550) is present in Specimen Identification Module
5			CODE	EV(121042,DCM, Specimen Type)	1	U		Defaults to value of Specimen Type Code Sequence (0040,059A) if a single item of Specimen Sequence (0040,0550) is present in Specimen Identification Module
6			TEXT	EV(121043,DCM, Slide Identifier)	1	U		Defaults to value of Specimen Type Code Sequence (0040,059A) if a single item of Specimen Sequence (0040,0550) is present in Specimen Identification Module
7			UIDREF	EV(121044,DCM, Slide UID)	1	U		

Table B.0-18: TID 5000 OB-GYN Ultrasound Procedure Report

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV(125000,DCM, OB-GYN Ultrasound Procedure Report)	1	M		
2	>	HAS CONCEPT MOD	INCLUDE	(1204,DTID, Language of Content Item And Descendants)	1	U	Not used	
3	>	HAS CONCEPT MOD	INCLUDE	(1001,DTID, Observation Context)	1	U		
4	>	CONTAINS	INCLUDE	(5001,DTID, Patient Characteristics)	1	U		
5	>	CONTAINS	INCLUDE	DT(111028,DCM, Image Library)	1	U	Not used	
6	>>	CONTAINS	INCLUDE	(„No purpose of Reference)	1-n	M	Not used	
7	>	CONTAINS	INCLUDE	(5002,DTID, OB-GYN Procedure Summary Section)	1	U		
8	>	CONTAINS	INCLUDE	(5004,DTID, Fetal Biometry Ratio Section)	1-n	U	12004	
9	>	CONTAINS	INCLUDE	(5005,DTID, Fetal Biometry Section)	1-n	U	12005	
10	>	CONTAINS	INCLUDE	(5006,DTID, Long Bones Section)	1-n	U	12006	
11	>	CONTAINS	INCLUDE	(5007,DTID, Fetal Cranium Section)	1-n	U	12007	
12	>	CONTAINS	INCLUDE	(99004,DTID, Fetal Anatomy)	1-n	U		
13	>	CONTAINS	INCLUDE	(5009,DTID, Fetal Biophysical Prole Section)	1-n	U		
14	>	CONTAINS	INCLUDE	(5011,DTID, Early Gestation Section)	1-n	U	12009	

15	>	CONTAINS	INCLUDE	(5010,DTID, Amniotic Sac Section)	1-n	U	12008	
16	>	CONTAINS	INCLUDE	(99005,DTID, Amniotic Sac Section old)	1-n	U	99102	
17	>	CONTAINS	INCLUDE	(99006,DTID, SonoVCAD Labor	1-n	U	99103	
18	>	CONTAINS	INCLUDE	(5015,DTID, Pelvis and Uterus Section)	1	U		
19	>	CONTAINS	INCLUDE	(5012,DTID, Ovaries Section	1	U		
20	>	CONTAINS	INCLUDE	(5013,DTID, Follicles Section)	1	U		\$Laterality = EV (G-A101, SRT, "Left") \$Number = EV (11879-4, LN, "Number of follicles in left ovary")
21	>	CONTAINS	INCLUDE	(5013,DTID, Follicles Section)	1	U		\$Laterality = EV (G-A100, SRT, "Right") \$Number = EV (11880-2, LN, "Number of follicles in right ovary")
22	>	CONTAINS	INCLUDE	(99008,DTID, Follicles SonoAVC Section)	1	U		\$Laterality = EV (G-A101, SRT, "Left") \$Number = EV (11879-4, LN, "Number of follicles in left ovary")
23	>	CONTAINS	INCLUDE	(99008,DTID, Follicles SonoAVC Section)	1	U		\$Laterality = EV (G-A100, SRT, "Right") \$Number = EV (11880-2, LN, "Number of follicles in right ovary")
24	>	CONTAINS	INCLUDE	EV(121070,DCM, Findings)	1-n	U	Not used	
25	>	HAS CONCEPT MOD	CODE	EV(G-C0E3,SRT, Finding Site)	1	M	Not used	EV (T-F6800, SRT, "Embryonic Vascular Structure")
26	>	CONTAINS	INCLUDE	(5025,DTID, OB-GYN Fetal Vascular Measurement Group)	1	M		\$AnatomyGroup = DCID (12141) Fetal Vasculature
27	>	CONTAINS	INCLUDE	EV(121070,DCM, Findings)	1-n	U	Not used	
28	>	HAS CONCEPT MOD	CODE	EV(G-C0E3,SRT, Finding Site)	1	M	Not used	EV (T-D6007, SRT, "Pelvic Vascular Structure")
29	>	CONTAINS	INCLUDE	EV(5026,DCM, OB-GYN Pelvic Vascular Measurement Group)	1	M		\$AnatomyGroup = DCID (12140) Pelvic Vasculature Anatomical Location
30	>	CONTAINS	INCLUDE	(99000,DTID, Fetus Doppler Measurements)	1-n	U		\$Laterality \$FindingSite
31	>	CONTAINS	INCLUDE	(99001,DTID, Maternal Doppler Measurement)	1-n	U		\$Laterality \$FindingSite
32	>	CONTAINS	INCLUDE	(99002,DTID, Fibroid Section)	1	U		\$Laterality = EV (G-A101, SRT, "Left") \$Number = EV (99703-0, GEK, "Number of fibroids in left ovary")

33	>	CONTAINS	INCLUDE	(99002,DTID, Fibroid Section)	1	U		\$Laterality = EV (G-A100, SRT, "Right") \$Number = EV (99704-0, GEK, "Number of fibroids in right ovary")
34	>	CONTAINS	INCLUDE	(99010,DTID, Fetal Echo Section)	1	U		
35	>	CONTAINS	INCLUDE	(99010,DTID, Fetal Echo Section)	1	U		
36	>	CONTAINS	INCLUDE	(99012,DTID, Pelvic Floor Section)	1	U	99108	
37	>	CONTAINS	INCLUDE	(99013,DTID, Pelvic Floor Finding Section)	1	U	99109	

Table B.0-19: TID 5001 OB-GYN PATIENT CHARACTERISTICS

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV(121118,DCM, "Patient Characteristics")	1	M		
2	>	CONTAINS	TEXT	EV(121106,DCM, "Comment")	1	U		
3	>	CONTAINS	NUM	EV(8302-2,LN, "Patient Height")	1	U		
4	>	CONTAINS	NUM	EV(29463-7,LN, "Patient Weight")	1	U		
5	>	CONTAINS	NUM	EV(11996-6,LN, "Gravida")	1	U		
6	>	CONTAINS	NUM	EV(11977-6,LN, "Para")	1	U		
7	>	CONTAINS	NUM	EV(11612-9,LN, "Aborta")	1	U		
8	>	CONTAINS	NUM	EV(33065-4,LN, "Ectopic Pregnancies")	1	U		

Table B.0-20: TID 5002 OB-GYN PROCEDURE SUMMARY SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	Dt(121111,DCM, Summary)	1	M		
2	>	CONTAINS	DATE	DCID(12003,, OB-GYN Dates)	1-n	U		
3	>	CONTAINS	INCLUDE	DCID(300,, Measurement)	1-n	U		\$Measurement = BCID (12018) OB-GYN Summary
4	>	CONTAINS	TEXT	EV(121106,DCM, Comment)	1-n	U		
5	>	CONTAINS	INCLUDE	DTID(320,, Image or Spatial Coordinates)	1-n	U		
6	>	CONTAINS	INCLUDE	DTID(5003,, OB-GYN Fetus Summary)	1-n	UC	No more than 1 inclusion per fetus	

Table B.0-21: TID 5003 OB-GYN PROCEDURE FETUS SUMMARY

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125008,DCM, Fetus Summary)	1	M		
2	>	HAS CONCEPT MOD	INCLUDE	DTID(1008,, Subject Context, Fetus)	1	MC		
3	>	CONTAINS	TEXT	EV(121106,, Comment)	1-n	U		
4	>>		INCLUDE	DTID(320,DCM, Image or Spatial Coordinates)	1	U		
5	>	CONTAINS	INCLUDE	DTID(300,DCM, Image or Spatial Coordinates)	1-n	U		\$Measurement = DCID (12019) OB-GYN Fetus Summary, (12003) OB-GYN DATES, \$Equation = DCID (12012) OB Equations and Tables

Table B.0-22: TID 5004 FETAL BIOMETRY RATIO SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125001,DCM, Fetus Biometry Ratios)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,,Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	NUM	DCID(12004,,Fetal Biometry Ratios)	1-n	M		
4	>>	R-INFERRED FROM	NUM		2	U		
5	>	HAS PROPERTIES	INCLUDE	DCID(312,,Normal Range Properties)	1	U		

Table B.0-23: TID 5005 FETAL BIOMETRY SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125002,DCM, Fetus Biometry)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	NUM	DTID(5008,, Fetal Biometry Group)	1-n	M		\$BiometryType = Member Of DCID (12005) Fetal Biometry Measurements

Table B.0-24: TID 5006 FETAL LONG BONES SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125003,DCM, Fetus Biometry)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	INCLUDE	DTID(5008,, Fetal Biometry Group)	1-n	M		\$BiometryType = MemberOf DCID (12006) Fetal Long Bones Biometry Measurements

Table B.0-25: TID 5007 FETAL CRANIUM SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125004,DCM, Fetal Cranium)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	INCLUDE	DTID(5008,, Fetal Biometry Group)	1-n	M		\$BiometryType = MemberOf DCID (12007) Fetal Cranium

Table B.0-26: TID 5008 FETAL BIOMETRY GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125005,DCM, BiometryGroup)	1	M		
2	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	MC		\$Measurement = \$BiometryType \$Derivation = DCID (3627) Measurement Type
3	>	CONTAINS	NUM	EV(18185-9,, Gestational Age)	1	MC		Units= EV(d,UCUM,days)
4	>>	INFERRED FROM	CODE	DTID(228,, Equation or Table)	1	U		DCID (12013) Gestational Age Equations and Tables
5	>>	INFERRED FROM	NUM	(121414,DCM, Standard deviation of Population)	1	U		
6	>>>	HAS PROPERTIES	CODE	(121402,DCM, Normality)	1	UC		(SRT, R-002C4, Abnormally High), (SRT, R-002C5, Abnormally Low), (SRT, G-A460, Normal)
7	>>	INFERRED FROM	NUM		1-n	U		

8	>>	HAS PROPERTIES	NUM	DCID(226,, Population Statistical Descriptors)	1-n	U		
9	>	CONTAINS	NUM	DCID(12017,, Growth Distribution Rank)	1	U		
10	>>	INFERRED FROM	CODE	DCID(228,, Equation or Table)	1	U		DCID (12015) Fetal Growth Equations and Tables

Table B.0-27: TID 5009 FETAL BIOPHYSICAL PROFILE SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125006,DCM, Biophysical Profile)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context, Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	NUM	EV(11631-9,LN, Gross Body Movement)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2")
4	>	CONTAINS	NUM	EV(11632-7,LN, Fetal Breathin)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2")
5	>	CONTAINS	NUM	EV(11635-0,LN, Fetal Tone)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2")
6	>	CONTAINS	NUM	EV(11635-5,LN, Fetal Heart Reactivity)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2")
7	>	CONTAINS	NUM	EV(11630-1,LN, Amniotic Fluid Volume)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2")
8	>	CONTAINS	NUM	EV(11634-3,LN, Biophysical Profile Sum Score)	1	U		

Table B.0-28: TID 5010 AMNIOTIC SAC SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125070,DCM, Findings)	1	M		
2	>	HAS OBS CONTEXT	CODE	EV(G-COE3,SRT, Finding Site)	1	M		DT (T-F1300, SRT, "Amniotic Sac")
3	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context, Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
4	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1	M		\$Measurement = DT (11627-7, LN, "Amniotic Fluid Index")

5	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	4	M		\$Measurement = DCID (12008) OB-GYN Amniotic Sac
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Table B.0-29: TID 5011 EARLY GESTATION SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125009,DCM, Early Gestation)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	INCLUDE	DTID(5008,, Fetal Biometry Group)	1-n	M		\$BiometryType= Member of DCID (12009) Early Gestation Biometry Measurements

Table B.0-30: TID 5012 OVARIES SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125070,DCM, Finding)	1	M		
2	>	HAS OBS CONTEXT	CODE	EV(G-C0E3,SRT, Finding Site)	1	M		DT (T-87000, SRT, "Ovary")
3	>	CONTAINS	INCLUDE	DTID(5016,,LWH Volume Group)	1	U		\$GroupName = EV (T- 87000, SRT, "Ovary") \$Width =EV (11829- 9,LN, "Left Ovary Width") \$Length =EV (11840-6, LN, "Left Ovary Length") \$Height =EV (11857-0 , LN, " Left Ovary Height") \$Volume=EV (12164-0, LN, "Left Ovary Volume")
4	>	CONTAINS	INCLUDE	DTID(5016,,LWH Volume Group)	1	U		\$GroupName = EV (T- 87000, SRT, "Ovary") \$Width = EV (11830-7, LN, "Right Ovary Width") \$Length = EV (11841-4, LN, "Right Ovary Length") \$Height = EV (11858-8, LN, "Right Ovary Height") \$Volume= EV (12165-7, LN, "Right Ovary Volume")

Table B.0-31: TID 5013 FOLLICLES SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125070,DCM, Finding)	1	M		
2	>	HAS CONCEPT MOD	CODE	EV(G-C0E3,SRT, Finding Site)	1	M		DT (T-87600, SRT, "Ovarian Follicle")
3	>	HAS CONCEPT MOD	CODE	EV(G-C171,SRT, Laterality)	1	U		
4	>	CONTAINS	NUM	(,,\$Number)	1	U		

5	>	CONTAINS	INCLUDE	DTID(5014,, Follicle Measurement Group)	1-n	U		
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Table B.0-32: TID 5014 FOLLICLE MEASUREMENT GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV(125007,DCM, Measurement Group)	1	M		
2	>	HAS CONCEPT MOD	TEXT	EV(12510,DCM, Identifier)	1	U		Unique among all groups of same laterality
3	>	HAS CONCEPT MOD	INCLUDE	EV(300,, Measurement)	1	U		\$Measurement = EV (GD705, SRT, "Volume")
4	>	CONTAINS	INCLUDE	(,,\$Number)	1	U		

Table B.0-33: TID 5015 PELVIS AND UTERUS SECTION

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

Table B.0-34: TID 5016 LWH VOLUME GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	(,,\$GroupName)	1	M		
2	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1	MC	At least one of row 2,3,4,5 shall be present	\$Measurement = \$Volume (DCID 12011)
3	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	MC	At least one of row 2,3,4,5 shall be present	\$Measurement = \$Length (DCID 12011) \$Derivation = DCID (3627) Measurement Type
4	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	MC	At least one of row 2,3,4,5 shall be present	\$Measurement = \$Width (DCID 12011) \$Derivation = DCID (3627) Measurement Type
5	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	MC	At least one of row 2,3,4,5 shall be present	\$Measurement = \$Height (DCID 12011) \$Derivation = DCID (3627) Measurement Type



Table B.0-35: TID 5025 OB-GYN FETAL VASCULAR ULTRASOUND MEASUREMENT GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	(,,\$AnatomyGroup)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IFF this template is invoked more than once to describe more than one fetus	
3	>	HAS OBS CONTEXT	CODE	EV(G-C171,SRT, Laterality)	1-n	MC	FF anatomy has laterality	DCID (244) Laterality
4	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	M		\$MeasType = DCID (12119) Vascular Ultrasound Property \$Derivation = DCID (3627) Measurement Type

Table B.0-36: TID 5026 OB-GYN PELVIC VASCULAR ULTRASOUND MEASUREMENT GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	(,,\$AnatomyGroup)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	EV(G-C171,SRT, Laterality)	1	MC	IFF Anatomy has laterality	DCID (244) Laterality
3	>		TEXT	(112050,DCM, Anatomic Identifier)	1-n	U		
4	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	M		\$MeasType = DCID (12119) Vascular Ultrasound Property \$Derivation = DCID (3627) Measurement Type

Table B.0-37: TID 99000 Fetus Doppler Measurements

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(99000,DCM, Fetal Doppler)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus ID)	1	MC	If this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1-n	M		\$FindingSite = EV(T-45510, SNM3 "Cerebral artery") \$Laterality= EV(G-A101, SRT, "Right") \$TargetSiteMod = EV(G-A109, SNM3, "Medial") \$MeasType = MemberOf DCID(9900)

4	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-45510, SNM3 "Cerebral artery") \$Laterality=EV(G-A100, SRT, "Left") \$TargetSiteMod = EV(G-A109, SNM3, "Medial") \$MeasType = MemberOf DCID(9900)
5	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-45510, SNM3 "Cerebral artery") \$Laterality=EV(G-A101, SRT, "Right") \$TargetSiteMod = EV(G-A113, SNM3, "Internal") \$MeasType = MemberOf DCID(9900)
6	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-45510, SNM3 "Cerebral artery") \$Laterality=EV(G-A100, SRT, "Left") \$TargetSiteMod = EV(G-A113, SNM3, "Internal") \$MeasType = MemberOf DCID(9900)
7	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-46420, SNM3, "Hepatic Artery") \$MeasType = MemberOf DCID(9900)
8	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-48720, SNM3, "Hepatic Vein") \$MeasType = MemberOf DCID(9901)
9	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-48710, SNM3, "Inferior Vena Cava") \$MeasType = MemberOf DCID(9901)
10	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-46600, SNM3, "Renal artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(9900)
11	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-46600, SNM3, "Renal artery") \$Laterality = EV(G-A101, SRT, "Right") \$MeasType = MemberOf DCID(9900)
12	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-46460, SNM3, "Splenic artery") \$MeasType = MemberOf DCID(9900)
13	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-42070, SNM3, "Thoracic aorta") \$MeasType = MemberOf DCID(9900)
14	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-F1810, SNM3, "Umbilical artery") \$MeasType = MemberOf DCID(12111)
15	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M	\$FindingSite = EV(T-48817, SNM3, "Umbilical vein") \$MeasType = MemberOf DCID(9902)

16	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(VP-0001, 99VP, "Ductus venosus vein") \$MeasType = MemberOf DCID(9901)
17	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(T-45010, SNM3, "Carotid artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(12140)
18	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(T-45010, SNM3, "Carotid artery") \$Laterality = EV(G-A100, SRT, "Right") \$MeasType = MemberOf DCID(12140)
19	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(T-F1412, SRT, "Vitelline Artery of Placenta") \$MeasType = MemberOf DCID(12140)
20	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(T-F1810, SNM3, "Umbilical artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(12111)
21	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(T-F1810, SNM3, "Umbilical artery") \$Laterality = EV(G-A100, SRT, "Right") \$MeasType = MemberOf DCID(12111)
22	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(T-45600, SRT, "Middle Cerebral Artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(12141)
23	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(T-45600, SRT, "Middle Cerebral Artery") \$Laterality = EV(G-A100, SRT, "Right") \$MeasType = MemberOf DCID(12141)
24	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(T-42000, SRT, "Aorta") \$MeasType = MemberOf DCID(12141)
25	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(T-46400, SRT, "Celiac Axis") \$MeasType = MemberOf DCID(12112)
26	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(T-46510, SRT, "Superior Mesenteric Artery") \$MeasType = MemberOf DCID(12112)
27	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(99918-1, GEK, "Umbilical artery") \$MeasType = MemberOf DCID(12111)

28	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$FindingSite = EV(99918-2, GEK, "Inferior Vena Cava") \$MeasType = MemberOf DCID(9901)
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Table B.0-38: TID 99001 Maternal Doppler Measurements

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(99001,DCM, Maternal Doppler Measurements)	1	M		
2	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(VP-0002, 99VP, "Uterine artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(12111)
3	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(VP-0002, 99VP, "Uterine artery") \$Laterality = EV(G-A101, SRT, "Right") \$MeasType = MemberOf DCID(12111)
4	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(VP-0003, 99VP, "Ovarian artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(12111)
5	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(VP-0003, 99VP, "Ovarian artery") \$Laterality = EV(G-A101, SRT, "Right") \$MeasType = MemberOf DCID(12111)
6	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(VP-0001, 99VP, "Ductus Venosus") \$MeasType = MemberOf DCID(12140)
7	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(T-40003, SRT, "Entire Vessel") \$MeasType = MemberOf DCID(12140)
8	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(T-45010,SNM3, "Carotid artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(12111)
9	>	CONTAINS	INCLUDE	DTID(9910,,Doppler Group)	1	M		\$TargetSite = EV(T-45010, SNM3, "Carotid artery") \$Laterality = EV(G-A100, SRT, "Left") \$MeasType = MemberOf DCID(12111)

Table B.0-39: TID 99002 FIBROID SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(121070,DCM, Findings)	1	M		
2	>	HAS OBS CONTEXT	CODE	EV(G-C0E3,SRT, Finding site)	1	M		DT (99008-0, GEK, "Ovarian Fibroid")

3	>	HAS OBS CONTEXT	CODE	EV(G-C171,SRT, Laterality)	1	U		\$Laterality
4	>	CONTAINS	NUM	(,,\$Number)	1	U	"The number of fibroids"	\$Measurement = EV (99706-0, GEK, "Fibroid Diameter") \$Derivation = DCID (3627) Measurement Type
5	>	CONTAINS	INCLUDE		1-n	U		

Table B.0-40: TID 99003 FIBROID MEASUREMENT GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV(125007,DCM, Measurement Group)	1	M		
2	>	HAS OBS CONTEXT	TEXT	EV(12510,DCM, Identifier)	1	U		Unique among all Groups of same laterality
3	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1	U		\$Measurement = EV (GD705, SRT, "Volume")
4	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	U		\$Measurement = EV (99706-0, GEK, "Fibroid Diameter") \$Derivation = DCID (3627) Measurement Type

Table B.0-41: TID 99004 Fetal Anatomy

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(99801-0,GEK, Fetal Anatomy)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	NUM	EV(99801-1,GEK, Abd Cord Insert)	1	MC		OB FA AbdWall
4	>	CONTAINS	NUM	EV(99801-2,GEK, Stomach)	1	MC		OB FA Stomach
5	>	CONTAINS	NUM	EV(99801-3,GEK, Right Kidney)	1	MC		OB FA RKidney
6	>	CONTAINS	NUM	EV(99801-4,GEK, Upper Extremities)	1	MC		OB FA UpExtr
7	>	CONTAINS	NUM	EV(99801-5,GEK, Spine)	1	MC		OB FA Spine
8	>	CONTAINS	NUM	EV(99801-6,GEK, Left Kidney)	1	MC		OB FA LKidney
9	>	CONTAINS	NUM	EV(99801-7,GEK, Bladder)	1	MC		OB FA Bladder
10	>	CONTAINS	NUM	EV(99801-8,GEK, Lower Extremities)	1	MC		OB FA LowExtr
11	>	CONTAINS	NUM	EV(99801-9,GEK, Diaphragm)	1	MC		OB FA Diaphragm
12	>	CONTAINS	NUM	EV(99801-10,GEK, Lateral Ventricles)	1	MC		OB FB LatVent
13	>	CONTAINS	NUM	EV(99801-11,GEK, Cerebellum)	1	MC		OB FB Cereb
14	>	CONTAINS	NUM	EV(99801-12,GEK, Cist Magna)	1	MC		OB FB CistMagna

15	>	CONTAINS	NUM	EV(99801-13,GEK, 4 Chamber)	1	MC		OB FH 4Chamber
16	>	CONTAINS	NUM	EV(99801-14,GEK, Left OutflowTract)	1	MC		OB FH LOT
17	>	CONTAINS	NUM	EV(99801-15,GEK, Right Outflow Tract)	1	MC		OB FH ROT
18	>	CONTAINS	NUM	EV(99801-16,GEK, 3 Vessel)	1	MC		OB FH 3Vessel
19	>	CONTAINS	NUM	EV(99801-17,GEK, Aortic Arch)	1	MC		OB FH AoArch
20	>	CONTAINS	NUM	EV(99801-18,GEK, Cardiac Rhythm)	1	MC		OB FH CardRh
21	>	CONTAINS	NUM	EV(99801-19,GEK, Ductal Arch)	1	MC		OB FH DuctArch
22	>	CONTAINS	NUM	EV(99801-20,GEK, Fetal Position)	1	MC		OB FD FetPos
23	>	CONTAINS	NUM	EV(99801-21,GEK, Fetal Spine)	1	MC		OB FD FetSpine
24	>	CONTAINS	NUM	EV(99801-22,GEK, Placenta Grade)	1	MC		OB FD PlacGrade
25	>	CONTAINS	NUM	EV(99801-23,GEK, Cord Insertion)	1	MC		OB FD CordIns
26	>	CONTAINS	NUM	EV(99801-24,GEK,Face)	1	MC		OB FD Face
27	>	CONTAINS	NUM	EV(99801-25,GEK, Fetal Head)	1	MC		OB FD FetHead
28	>	CONTAINS	NUM	EV(99801-26,GEK, Placenta Location)	1	MC		OB FD PlacLoc
29	>	CONTAINS	NUM	EV(99801-27,GEK, 3 V Cord)	1	MC		OB FD 3VCord
30	>	CONTAINS	NUM	EV(99801-28,GEK, Amniotic Fluid)	1	MC		OB FD AmnFluid

Table B.0-42: TID 99005 AMNIOTIC SAC SECTION OLD

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125070,DCM, Findings)	1	M		
2	>	HAS OBS CONTEXT	CODE	EV(G-COE3,SRT, Finding Site)	1	M		DT (T-F1300, SRT, "Amniotic Sac")
3	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
4	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1	M		\$Measurement = DT (11627-7, LN, "Amniotic Fluid Index")
5	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	4	U		\$Measurement = DCID (99102) OB-GYN Amniotic Sac Old

Table F.0-43: TID 99006 SonoVCADLabor SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(125070,DCM, Findings)	1	M		
2	>	HAS OBS CONTEXT	CODE	EV(G-COE3,SRT, Finding Site)	1	M		DT (99016-0, GEK, "SonoVCAD Labor")

3	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
4	>	CONTAINS	INCLUDE	DTID(99007,, Measurement Group)	1-n	U		\$Measurement = DT (99009-4, GEK, "SonoVCADLabor Measurement Group")

Table B.0-44: TID 99007 SonoVCADLabor MEASUREMENT GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV(125007,DCM, Measurement Group)	1	M		
2	>	HAS OBS CONTEXT	TEXT	EV(12510,DCM, Identifier)	1	U		Unique among all Groups of same laterality
3	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	U		\$Measurement = DCID (99103) SonoVCADLabor

Table B.0-45: TID 99008 FOLLICLES SonoAVC SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(121070,DCM, Findings)	1	M		
2	>	HAS OBS CONTEXT	CODE	EV(G-C0E3,SRT, Finding Site)	1	M		DT (99015-9, GEK, "Ovarian Follicle SonoAVC")
3	>	HAS OBS CONTEXT	CODE	EV(G-C171,SRT, Laterality)	1	MC		\$Laterality
4	>	CONTAINS	NUM	(,,\$Number)	1	M		
5	>	CONTAINS	INCLUDE	DTID(99009,, Follicle SonoAVC Measurement Group)	1-n	U		

Table B.0-46: TID 99009 FOLLICLE SonoAVC MEASUREMENT GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV(125007,DCM, Measurement Group)	1	M		
2	>	HAS OBS CONTEXT	TEXT	EV(12510,DCM, Identifier)	1	U		Unique among all Groups of same laterality
3	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	U		\$Measurement = DCID (99104")

Table B.0-47: TID 99010 Fetal Echo Section

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(99901-0,GEK, Fetal Echo)	1	M		

2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context, Fetus ID)	1	MC	If this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	INCLUDE	DTID(99011,, Fetal Echo Group)	1-n	U		

Table B.0-48: TID 99011 Fetal Echo GROUP

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(121070,DCM, Findings)	1	M		
2	>	HAS OBS CONTEXT	CODE	EV(G-C0E3,SRT, Finding Site)	1	MC		MemberOf DCID (99107) Fetal Echo Finding Site
3	>	HAS OBS CONTEXT	CODE	EV(G-C0E3,SRT, Measurement Method)	1	MC		MemberOf DCID (99106) Fetal Echo Measurement Method
4	>	CONTAINS	INCLUDE	DTID(300,, Measurement))	1-n	U		\$Measurement = DCID (99105) Fetal Echo Measurement

Table B.0-49: TID 99012 Pelvic Floor SECTION

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(121070,DCM, Findings)	1	M		
2	>	CONTAINS	INCLUDE	DTID(300,, Measurement))	1-n	U		\$Measurement = DCID (99104")

Table B.0-50: TID 99013 Pelvic Floor Finding Section

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(121070,DCM, Findings)	1	M		
2	>	CONTAINS	INCLUDE	DTID(300,, Measurement))	1-n	U		\$Measurement = DCID (99104")

Table B.0-51: TID 99014 Cardiovascular Profile Score

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(99802-0,GEK, Cardiovascular Profile Score)	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID(1008,, Subject Context,Fetus)	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	HAS OBS CONTEXT	NUM	EV(99802-1,GEK, Hydrops)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2")



4	>	CONTAINS	NUM	EV(99802-2,GEK, Heart Size)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2"
5	>	CONTAINS	NUM	EV(99802-3,GEK, Cardiac Function)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2"
6	>	CONTAINS	NUM	EV(99802-4,GEK, Venous Doppler)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2"
7	>	CONTAINS	NUM	EV(99802-5,GEK, Arterial Doppler)	1	MC	At least one of row 3-7 shall be present	Units = DT ("0:2", UCUM, "range 0:2"
8	>	CONTAINS	NUM	EV(99802-6,GEK, Cardiovascular Profile Score Sum)	1	U		

Table B.0-52: TID 99100 Doppler Group

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT(99100,DCM, Doppler Group)	1-n	M		
2	>	CONTAINS	INCLUDE	DTID(300,, Measurement)	1-n	M		\$Measurement = \$MeasType