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SecondLook® Digital DICOM Conformance Statement

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DICOM MergeCOM3 Advanced Integrator's Tool Kit  
by Merge Technologies, Inc.



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# 1 Introduction

## 1.1 Scope and Field of Application

SecondLook® Digital will use the DICOM 3.0 protocol standard to support the connectivity. It is assumed that the reader is familiar with the terminology and concepts that are used in the DICOM 3.0 standard. Readers not familiar with DICOM 3.0 terminology should first read the appropriate parts of the DICOM standard itself, prior to reading this conformance statement. Although the use of this conformance statement in conjunction with the DICOM 3.0 standard is intended to facilitate communication with other DICOM systems, it is not sufficient to guarantee, by itself, the inter-operation of the connection.

SecondLook® Digital is a system that receives digital mammographic images as a Service Class Provider (SCP) then runs algorithms on the images to provide computer aided detection (CAD) results and exports the CAD results as a Service Class User (SCU) of the Storage Service Class. The system also serves as an SCP and SCU of the Verification Service Class.

## 1.2 Quick Summary

SOP Class	SOP Class UID	SCU	SCP	Comments
Digital Mammography X-Ray – For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	Yes	Receives images for CAD processing. Can forward image with or without DICOM 6000 Overlay
Digital Mammography X-Ray – For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	Yes	Can forward image with or without DICOM 6000 Overlay
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No	Passively receives images
Enhanced Structured Report (ESR)	1.2.840.10008.5.1.4.1.1.88.22	Yes	No	Sends CAD results in SR format (prior to Mammography CAD SR approval)
Mammography CAD Structured Report (MSR)	1.2.840.10008.5.1.4.1.1.88.50	Yes	No	Preferred method for transmitting CAD results
Radiotherapy Structure Set (RTSS)	1.2.840.10008.5.1.4.1.1.481.3	Yes	No	Proprietary method (GE only) of sending CAD results
Grayscale Softcopy Presentation State (GSPS)	1.2.840.10008.5.1.4.1.1.11.1	Yes	No	Sends CAD results in GSPS file, which is not optimal.
Storage Commitment	1.2.840.10008.1.20.1	Yes	No	Can send a storage commit message for every CAD output.
Basic Study Content Notification	1.2.840.10008.1.9	No	Yes	Can be used to determine end of case for received images.
Verification	1.2.840.10008.1.1	Yes	Yes	Used for connectivity testing.

### 1.3 Acronyms

The following acronyms and abbreviations are used in this document.

- AE Application Entity
- ACR American College of Radiology
- ANSI American National Standards Institute
- CAD Computer Aided Detection
- DICOM Digital Imaging and Communications in Medicine
- FSE Field Service Engineer
- GUI Graphical User Interface
- HIS Hospital Information System
- IOD Information Object Definition
- NEMA National Electrical Manufacturers Association
- PACS Picture Archiving and Communications System
- PDU Protocol Data Unit
- RIS Radiological Information System
- SCP Service Class Provider
- SCU Service Class User
- SOP Service Object Pair
- SR Structured Report
- TCP/IP Transmission Control Protocol/Internet Protocol
- UID Unique Identifier
- VR Value Representation

Furthermore, all symbols, abbreviations, and definitions used herein are described in the Digital Imaging and Communications in Medicine (DICOM) standard, parts 1 through 13 (NEMA PS 3.1-13).

### 1.4 Related Documentation

- American College of Radiology-National Electrical Manufacturers Association (ACR-NEMA) Digital Imaging and Communications in Medicine (DICOM) v3.0, 2004.

### 1.5 Considerations

The following issues need to be considered:

- The integration of any device into a system of interconnected devices goes beyond the scope of the DICOM 3.0 standard and this conformance statement when interoperability is required. The responsibility for analyzing the systems requirements and developing a solution that integrates the SecondLook® system with other vendors' systems is the user's responsibility and should not be underestimated.
- Testing the complete range of possibilities between the SecondLook® Digital system and non- SecondLook® devices, before the connection is declared operational, is considered to be a necessity. The user should ensure that any non-SecondLook® equipment provider accepts full responsibility for all validation required for their connection with the SecondLook® system. The accuracy of image data once it has crossed the interface between the SecondLook® equipment and the non-SecondLook® device as well as the

stability of the image data for the intended applications is the responsibility of the non-SecondLook® provider.

- As the DICOM 3.0 standard evolves to meet the user's growing requirements and to incorporate new features and technologies, SecondLook® developers will follow the evolution of the standard. This evolution of the standard may require changes to devices that have implemented DICOM 3.0. The user should ensure that any non-SecondLook® provider, who connects with SecondLook® devices, also plans future evolution of the DICOM standard. A refusal to do so may reflect in the loss of functionality and/or connectivity between the different products.

## 2 Implementation Model

The SecondLook® Digital system is a computer-aided detection (CAD) system for mammography designed to assist the radiologist in breast cancer detection. Using cognitive systems technology, the system detects potential microcalcifications and masses, literally providing the radiologist with a "second opinion". The SecondLook® Digital system's advanced pattern recognition and image analysis is intended to aid in early breast cancer detection. The SecondLook® Digital system is designed for all primary communication to occur through DICOM. A remotely accessible GUI shall be provided to the Field Service / Administrator to assist in simple configuration and diagnostics.

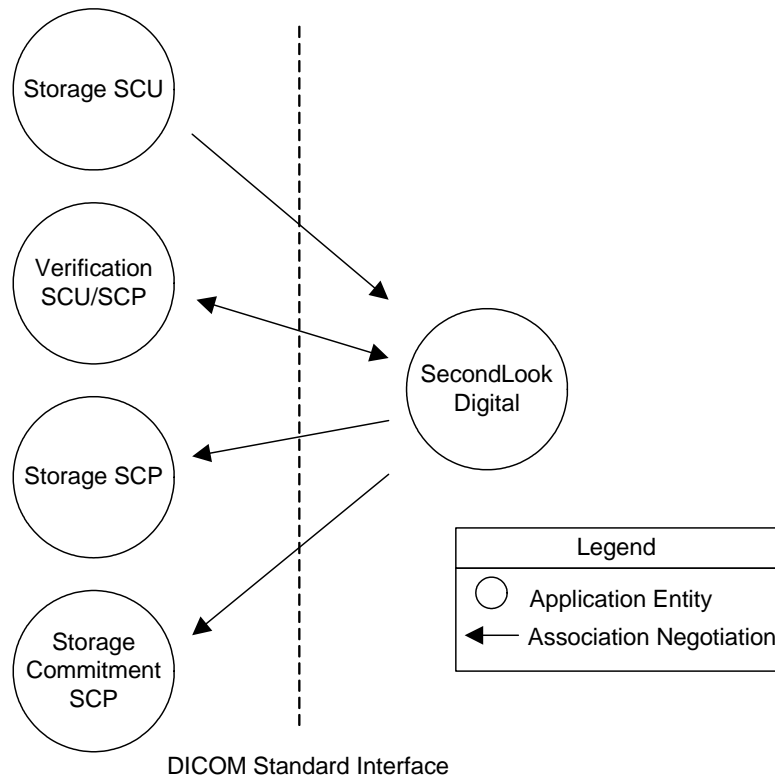
A client wishing to initiate processing on an image shall send the SecondLook® Digital system a CAD request via DICOM. After each image is received, CAD processing will be initiated. Once the end of a case is determined, the SecondLook® Digital system will complete any remaining image-based processing for the case and perform case-based processing. Once the case-based processing is finished, the system will send the CAD results in a DICOM message to the designated recipient.

In clinical practice, the CAD results are only used by the radiologist after the completion of the initial review of the mammography images. The radiologist then views the CAD results and takes a "SecondLook" at the image in the locations of any areas of potential concern detected by the SecondLook® Digital system. Finally, the radiologist decides whether or not true areas of concern are present at these locations. If so, the radiologist guides any additional work-up that is indicated. Note that the CAD results are not to be used to override a decision by the radiologist to further evaluate an area of concern initially detected without the assistance of the SecondLook® Digital system. Therefore, the CAD results can assist a radiologist in detecting areas of concern that would have been missed without its use, but it cannot cause a radiologist to miss areas of concern that would have been detected without the SecondLook® Digital system.

### 2.1 Application Data Flow Diagram

The SecondLook® Digital system acts as a single Application Entity based on the DICOM protocol standard. The system can act as a DICOM Storage Service Class Providers (SCP) by receiving DICOM Digital Mammography X-Ray Images, DICOM Secondary Capture images, DICOM Basic Study Content Notification messages, and DICOM Verification messages. The SecondLook® Digital system can also act as a DICOM Storage Service Class User (SCU) by initiating associations to send CAD results in the form of the DICOM Enhanced Structured Report, a DICOM Mammography CAD Structured Report, a Radiotherapy Structure Set (RTSS)

object, a Grayscale Softcopy Presentation State (GSPS) object, or a Digital Mammography X-Ray “FOR PRESENTATION” image with the CAD detections applied to the overlay. Once the CAD output has been sent, the SecondLook® Digital system can send a DICOM Storage Commitment message to mark the CAD output for long-term storage on the remote device. Furthermore, the SecondLook® Digital system can also initiate DICOM Verification requests to DICOM Storage Service Class Providers (SCP) for testing communications between systems. The data flow diagram can be seen in Figure 2.1.



**Figure 2.1 - Implementation Model**

**2.2 Functional Definition of Application Entities**

SecondLook® Digital acts as a Service Class Provider (SCP) for the purpose of receiving DICOM Digital Mammography X-Ray images, DICOM Secondary Capture images, DICOM Basic Study Content Notification messages, and DICOM Verification messages. The SecondLook® Digital system acts as a Service Class User (SCU) by sending out the CAD results in the form of the DICOM Enhanced Structured Report , DICOM Mammography CAD Structured Report, a Radiotherapy Structure Set (RTSS) object, a Grayscale Softcopy Presentation State (GSPS) object, or a Digital Mammography X-Ray image with the CAD detections applied to the overlay, each of which can be followed by sending a DICOM Storage Commitment message to mark the CAD output on the remote device for long-term storage. Furthermore, the SecondLook® Digital system acts as an SCU by initiating the DICOM Verification message for testing communications between devices.

### 3 AE Specifications

#### 3.1 SCP Services

The following sections define the services used by SecondLook® Digital as an SCP.

##### 3.1.1 SCP Application Entity

SecondLook® Digital provides SCP standard conformance to the DICOM 3.0 SOP Classes that are defined in Table 1.

**Table 1 - SCP SOP Class Conformance**

SOP Class	SOP Class UID
Digital Mammography X-Ray – For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Mammography X-Ray – For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Basic Study Content Notification	1.2.840.10008.1.9
Verification	1.2.840.10008.1.1

#### 3.2 SCU Services

The following sections define the services used by SecondLook® Digital as an SCU.

##### 3.2.1 SCU Application Entity

SecondLook® Digital provides SCU standard conformance to the DICOM 3.0 SOP Classes that are defined in Table 2.

**Table 2 - SCU SOP Class Conformance**

SOP Class	SOP Class UID
Enhanced Structured Report	1.2.840.10008.5.1.4.1.1.88.22
Mammography CAD Structured Report	1.2.840.10008.5.1.4.1.1.88.50
Radiotherapy Structure Set (RTSS)	1.2.840.10008.5.1.4.1.1.481.3
Grayscale Softcopy Presentation State (GSPS)	1.2.840.10008.5.1.4.1.1.11.1
Digital Mammography X-Ray – For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X-Ray – For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Storage Commitment	1.2.840.10008.1.20.1
Verification	1.2.840.10008.1.1

### 3.3 Association Establishment Policies

#### 3.3.1 General

SecondLook® Digital contains no limitations for maximum PDU size. Default maximum PDU size is set to 28672 bytes, but can be modified in a configuration file for each application.

#### 3.3.2 Number of Associations

SecondLook® Digital will issue only one association request at a time to a Remote AE and can support at least four associations at a time from a Remote AE.



**3.3.3 Asynchronous Nature**

SecondLook® Digital allows a single outstanding operation on any association. Therefore, SecondLook® Digital does not support asynchronous operations window negotiation, other than the default as specified by the DICOM specification.

**3.3.4 Implementation Identifying Information**

SecondLook® Digital will respond with the following implementation identifying parameters by default:

- Implementation Class UID                   **1.2.840.114191.2**
- Implementation Version Name           **SL\_CAD\_MGR**

The Implementation Class UID is derived from the DICOM Standard PS 3.5 -2007, Annex B & Annex C, where the number 114191 is the unique identifier given to iCAD, Inc. by ANSI. The implementation version name is an abbreviation for SecondLook® CAD Manager.

**3.3.5 Network Configuration**

The Field Service Engineer sets the Application Entity title, IP Address, and port number for SecondLook® Digital through the provided Graphical User Interface (GUI). The Field Service Engineer also sets the Application Entity title, IP Address, and port number for any remote devices that want to communicate with SecondLook® Digital through the same GUI.

**3.3.6 Association Initiation by Real World Activity**

SecondLook® Digital will issue a new association with a remote device when CAD results, storage commitment, and verification messages are to be transmitted.

**3.3.6.1 Verify Communication with a Remote System**

**3.3.6.2 Associated Real World Activity - Verification**

SecondLook® Digital can issue a Verification request to any of the configured remote devices through the Field Service Engineer’s Graphical User Interface. SecondLook® Digital will respond to any Verification request as long as the SecondLook® Digital’s service is started.

**3.3.6.3 Presentation Context Table - Verification**

SecondLook® Digital supports the transfer syntaxes listed in Table 3. For a Verification request, SecondLook® Digital will propose the Presentation Contexts listed in Table 4.

**Table 3 – Verification Transfer Syntaxes**

<b>Transfer Syntaxes</b>	<b>UID</b>
DICOM Implicit VR Little Endian	1.2.840.10008.1.2

**Table 4 – Verification SOP Class**

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>	<b>Role</b>	<b>Extended Negotiation</b>
<b>SOP Class</b>	<b>SOP Class UID</b>			
Verification	1.2.840.10008.1.1	Declared in Table 3	SCU/SCP	None

**3.3.6.4 SOP Specific Conformance – Verification**

The response codes for the DICOM Verification message are displayed in Table 5. If there was an error in creating the Verification response, no response shall be sent.

**Table 5 - Verification Response Codes**

Service Status	Further Meaning	Protocol Codes	Related Fields	Description
Success	Success	0000	None	Operation performed properly

**3.3.6.5 Receive Images from a Remote System**

**3.3.6.6 Associated Real World Activity – Receive**

SecondLook® Digital will receive images from remote devices that wish to have CAD process the patient case.

**3.3.6.7 Presentation Context Table – Receive**

SecondLook® Digital supports the transfer syntaxes listed in Table 6. When sending CAD output, SecondLook® Digital will propose the Presentation Contexts listed in Table 7.

**Table 6 - Receive Image Transfer Syntaxes**

Transfer Syntaxes	UID
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
DICOM Explicit Little Endian	1.2.840.10008.1.2.1
DICOM Explicit Big Endian	1.2.840.10008.1.2.2

**Table 7 – Presentation Contexts for Receive from Remote Systems**

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
SOP Class	SOP Class UID			
Digital Mammography X-Ray – For Processing	1.2.840.10008.5.1.4.1.1.2.1	Declared in Table 6	SCP	None
Digital Mammography X-Ray – For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Declared in Table 6	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Declared in Table 6	SCP	None

**3.3.6.8 SOP Specific Conformance – Receive**

The SecondLook® SCP conforms to the SOP’s of the Storage Service Class at Level 2 (Full) as described in Section B.4.1 of PS 3.4 -2004 of the DICOM Standard. SecondLook® Digital will receive Digital Mammography X-Ray – For Processing images, Digital Mammography X-Ray – For Presentation images, and Secondary Capture images. Note that SecondLook® Digital has the ability to receive the Digital Mammography X-Ray – For Presentation images, but will not process these images with its CAD algorithms. If the corresponding “For Processing” images are sent with the “For Presentation” images, then a CAD overlay can be applied to the “For Presentation” image and be sent to any remote device. Also, SecondLook® Digital will only process Secondary Capture devices that were acquired from a Howtek 861 device. The status

codes shown in Table 8 may be sent back to the Remote SCU after the SCU tries to open an association with the SecondLook® Digital system.

**Table 8 – C-Store Response Status Codes**

Status Code	Service Status	Meaning	Explanation
A900	Refused	Invalid Dataset	The image data that was received was invalid.
0110	Error	Processing Failure	An internal system error occurred when receiving the image and storing it to disk.
0000	Success	Success	Indicates that an association was successfully established and an image was successfully stored and queued for processing.

The status codes shown in Table 9 may be sent back to the Remote SCU after the SCU tries to open an association with the SecondLook® Digital system and the association gets rejected.

**Table 9 - Reject Association Response Status Codes**

Description of Rejection	PDU Byte 8 - Result	PDU Byte 9 - Source	PDU Byte 10 - Reason
Not enough disk space	2 - Transient Rejection	3 - UL service provider	2 - Local limit exceeded
Not a configured remote device	1 – Permanent Rejection	1 - UL service user	3 - Unacceptable Calling AP
Exceeded allowed simultaneous connections	2 - Transient Rejection	3 - UL service provider	1 - Temporary congestion
Unknown error in handling association	2 - Transient Rejection	1 - UL service user	1 - Temporary congestion

The Digital Mammography X-Ray Information Object Definition (IOD) modules are defined in Table 10.

**Table 10 – Digital Mammography X-Ray Image IOD Modules**

IE	Module	DICOM Reference	Document Reference	Usage
Patient	Patient	PS 3.3 –2007 C.7.1.1	Table 11	M
	Specimen Identification	PS 3.3 –2007 C.7.1.2	Not used	U
	Clinical Trial Subject	PS 3.3 –2007 C.7.1.3	Not used	U
Study	General Study	PS 3.3 – 2007 C.7.2.1	Table 12	M
	Patient Study	PS 3.3 – 2007 C.7.2.2	Not used	U
	Clinical Trial Study	PS 3.3 – 2007 C.7.2.3	Not used	U
Series	General Series	PS 3.3 – 2007 C.7.3.1	Table 13	M
	Clinical Trial Series	PS 3.3 – 2007 C.7.3.2	Not used	U
	DX Series	PS 3.3 – 2007 C.8.11.1	Table 14	M
	Mammography Series	PS 3.3 – 2007 C.8.11.6	Table 15	M
	Frame of Reference	PS 3.3 – 2007 C.7.4.1	Not Used	C

Equipment	General Equipment	PS 3.3 – 2007 C.7.5.1	Table 16	M
Image	General Image	PS 3.3 – 2007 C.7.6.1	Table 17	M
	Image Pixel	PS 3.3 – 2007 C.7.6.3	Table 18	M
	Contrast/Bolus	PS 3.3 – 2007 C.7.6.4	Not used	U
	Display Shutter	PS 3.3 – 2007 C.7.6.11	Not used	U
	Device	PS 3.3 – 2007 C.7.6.12	Not used	U
	Intervention	PS 3.3 – 2007 C.7.6.13	Not used	U
	DX Anatomy Imaged	PS 3.3 – 2007 C.8.11.2	Table 19	M
	DX Image	PS 3.3 – 2007 C.8.11.3	Table 20	M
	DX Detector	PS 3.3 – 2007 C.8.11.4	Table 21	M
	X-Ray Collimator	PS 3.3 – 2007 C.8.7.3	Not used	U
	DX Positioning	PS 3.3 – 2007 C.8.11.5	Not used	U
	X-Ray Tomo Acquisition	PS 3.3 – 2007 C.8.7.7	Not used	U
	X-Ray Acquisition Dose	PS 3.3 – 2007 C.8.7.8	Not used	U
	X-Ray Generation	PS 3.3 – 2007 C.8.7.9	Not used	U
	X-Ray Filtration	PS 3.3 – 2007 C.8.7.10	Not used	U
	X-Ray Grid	PS 3.3 – 2007 C.8.7.11	Not used	U
	Mammography Image	PS 3.3 – 2007 C.8.11.7	Table 22	M
	Overlay Plane	PS 3.3 – 2007 C.9.2	Not used	C
	VOI LUT	PS 3.3 – 2007 C.11.2	Not used because SecondLook® does not process FOR PRESENTATION images.	
	Image Histogram	PS 3.3 – 2007 C.11.5	Not used	U
Acquisition Context	PS 3.3 – 2007 C.7.6.14	Table 25	M	
SOP Common	PS 3.3 – 2007 C.12.1	Table 26	M	

**Table 11 - Patient Module Attributes – mandatory – ref. PS 3.3 - 2007 C.7.1.1**

Group and Element	VR	Type	Description	Value
(0010,0010)	PN	2	Patient's Name	Patient's full name obtained from the image header.
(0010,0020)	LO	2	Patient ID	Primary hospital identification number or code for the patient obtained from the image header.
(0010,0030)	DA	2	Patient's Birth Date	Birth date of the patient obtained from the image header.
(0010,0040)	CS	2	Patient's Sex	Sex of the named patient obtained from the image header. Enumerated Values: M = male F = female O = other
(0008,1120)	SQ	3	Referenced Patient Sequence	Not used

>(0008,1150)	UI	1C	Referenced SOP Class UID	Not used
>(0008,1155)	UI	1C	Referenced SOP Instance UID	Not used
(0010,0032)	TM	3	Patient Birth Time	Not used
(0010,1000)	LO	3	Other Patient ID	Not used
(0010,1001)	PN	3	Other Patient Names	Not used
(0010,2160)	SH	3	Ethnic Group	Not used
(0010,4000)	LT	3	Patient Comments	Not used

**Table 12 - General Study Module Attributes – Mandatory - ref. PS 3.3 - 2007 C.7.2.1**

Group and Element	VR	Type	Description	Value
(0020,000D)	UI	1	Study Instance UID	Unique identifier for the Study obtained from the image header.
(0008,0020)	DA	2	Study Date	The current date of the CAD processing
(0008,0030)	TM	2	Study Time	The current time of the CAD processing.
(0008,0090)	PN	2	Referring Physician's Name	Not used
(0008,0096)	SQ	3	Referring Physician Identification Sequence	Not used
(0020,0010)	SH	2	Study ID	User or equipment generated Study identifier obtained from the image header.
(0008,0050)	SH	2	Accession Number	A RIS generated number, which identifies the order for the Study obtained from the image header.
(0008,1030)	LO	3	Study Description	Institution-generated description or classification of the Study (component) performed.
(0008,1048)	PN	3	Physicians Of Record	Not used
(0008,1049)	SQ	3	Physician(s) of Record Identification Sequence	Not used
(0008,1060)	PN	3	Name Of Physicians Reading Study	Not used
(0008,1062)	SQ	3	Physician(s) Reading Study Identification Sequence	Not used
(0008,1110)	SQ	3	Referenced Study Sequence	Not used
(0008,1032)	SQ	3	Procedure Code Sequence	Not used

**Table 13 - General Series Module Attributes– Mandatory - ref. PS 3.3 - 2007 C.7.3.1**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality	MG
(0020,000E)	UI	1	Series Instance UID	Unique identifier of the Series.
(0020,0011)	IS	2	Series Number	A number that identifies this Series.
(0020,0060)	CS	2C	Laterality	Laterality of (paired) body part examined. Required if the body part examined is a paired structure and Image Laterality (0020,0062) is not sent. Enumerated Values: R = right L = left
(0008,0021)	DA	3	Series Date	Date the Series started.
(0008,0031)	TM	3	Series Time	Time the Series started.
(0008,1050)	PN	3	Performing Physician's Name	Name of the physician(s) administering the Series.
(0008,1052)	SQ	3	Performing Physician Identification Sequence	Not used
(0018,1030)	LO	3	Protocol Name	Not used
(0008,103E)	LO	3	Series Description	Not used
(0008,1070)	PN	3	Operators' Name	Name(s) of the operator(s) supporting the Series.
(0008,1072)	SQ	3	Operator Identification Sequence	Not used
(0008,1111)	SQ	3	Referenced Performed Procedure Step Sequence	Not used
(0018,0015)	CS	3	Body Part Examined	BREAST
(0018,5100)	CS	2C	Patient Position	Not used
(0028,0108)	US or SS	3	Smallest Pixel Value in Series	Not used
(0028,0109)	US or SS	3	Largest Pixel Value in Series	Not used
(0040,0275)	SQ	3	Request Attributes Sequence	Not used
(0040,0253)	SH	3	Performed Procedure Step ID	Not used
(0040,0244)	DA	3	Performed Procedure Step Start Date	Not used
(0040,0245)	TM	3	Performed Procedure Step Start Time	Not used
(0040,0254)	LO	3	Performed Procedure Step Description	Not used
(0040,0260)	SQ	3	Performed Protocol Code Sequence	Not used
(0040,0280)	ST	3	Comments on the Performed Procedure Step	Not used

**Table 14 – DX Series Module Attributes – mandatory – ref. PS 3.3 - 2007 C.8.11.1**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality	MG
(0008,1111)	SQ	1C	Referenced Performed Procedure Step Sequence	Not used
(0008,0068)	CS	1	Presentation Intent Type	Identifies the intent of the images that are contained within this Series. Enumerated Values: FOR PRESENTATION FOR PROCESSING

**Table 15 – Mammography Series Module Attributes – mandatory – ref. PS 3.3 - 2007 C.8.11.6**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality	MG

**Table 16 - General Equipment Module Attributes - Mandatory – ref. PS 3.3 - 2007 C.7.5.1**

Group and Element	VR	Type	Description	Value
(0008,0070)	LO	2	Manufacturer	Manufacturer of the equipment that produced the composite instances.
(0008,0080)	LO	3	Institution Name	Not used
(0008,0081)	ST	3	Institution Address	Not used
(0008,1010)	SH	3	Station Name	Not used
(0008,1040)	LO	3	Institutional Department Name	Not used
(0008,1090)	LO	3	Manufacturer's Model Name	Manufacturer's model name of the equipment that produced the composite instances.
(0018,1000)	LO	3	Device Serial Number	Not used
(0018,1020)	LO	3	Software Version	Not used
(0018,1050)	DS	3	Spatial Resolution	Not used
(0018,1200)	DA	3	Date of Last Calibration	Not used
(0018,1201)	TM	3	Time of Last Calibration	Not used
(0028,0120)	US	3	Pixel Padding Value	Not used

**Table 17 – General Image Module Attributes – mandatory – ref. PS 3.3 - 2007 C.7.6.1**

Group and Element	VR	Type	Description	Value
(0020,0013)	IS	2	Instance Number	A number that identifies this image.
(0020,0020)	CS	2C	Patient Orientation	Patient direction of the rows and columns of the image. Required if image does not require Image Orientation (Patient) (0020,0037) and Image Position (Patient) (0020,0032).
(0008,0023)	DA	2C	Content Date	The date the image pixel data creation started. Required if image is part of a series in which the images are temporally related.
(0008,0033)	TM	2C	Content Time	The time the image pixel data creation started. Required if image is part of a series in which the images are temporally related.
(0008,0008)	CS	3	Image Type	Not used
(0020,0012)	IS	3	Acquisition Number	Not used
(0008,0022)	DA	3	Acquisition Date	The date the acquisition of data that resulted in this image started.
(0008,0032)	TM	3	Acquisition Time	The time the acquisition of data that resulted in this image started
(0008,002A)	DT	3	Acquisition Datetime	Not used
(0008,1140)	SQ	3	Referenced Image Sequence	Not used
(0008,2111)	ST	3	Derivation Description	Not used
(0008,9215)	SQ	3	Derivation Code Sequence	Not used
(0008,2112)	SQ	3	Source Image Sequence	Required for DICOM 6000 Overlays
(0008,113A)	SQ	3	Referenced Waveform Sequence	Not used
(0020,1002)	IS	3	Images in Acquisition	Not used
(0020,4000)	LT	3	Image Comments	Not used
(0028,0300)	CS	3	Quality Control Image	Not used
(0028,0301)	CS	3	Burned In Annotation	Not used
(0028,2110)	CS	3	Lossy Image Compression	Not used
(0028,2112)	DS	3	Lossy Image Compression Ratio	Not used
(0088,0200)	SQ	3	Icon Image Sequence	Not used
(2050,0020)	CS	3	Presentation LUT Shape	Not used



**Table 18 – Image Pixel Module Attributes – mandatory – ref. PS 3.3 - 2007 C.7.6.3**

Group and Element	VR	Type	Description	Value
(0028,0002)	US	1	Samples per Pixel	Number of samples (planes) in this image.
(0028,0004)	CS	1	Photometric Interpretation	Specifies the intended interpretation of the pixel data: MOMOCHROME2
(0028,0010)	US	1	Rows	Number of rows in the image.
(0028,0011)	US	1	Columns	Number of columns in the image.
(0028,0100)	US	1	Bits Allocated	Number of bits allocated for each pixel sample. Each sample shall have the same number of bits allocated.
(0028,0101)	US	1	Bits Stored	Number of bits stored for each pixel sample. Each sample shall have the same number of bits stored.
(0028,0102)	US	1	High Bit	Most significant bit for pixel sample data. Each sample shall have the same high bit.
(0028,0103)	US	1	Pixel Representation	Data representation of the pixel samples. Each sample shall have the same pixel representation. Enumerated Value: 0000H = unsigned integer.
(7FE0,0010)	OW or OB	1	Pixel Data	A data stream of the pixel samples that comprise the Image.
(0028,0006)	US	1C	Planar Configuration	Not used
(0028,0034)	IS	1C	Pixel Aspect Ratio	Not used
(0028,0106)	US or SS	3	Smallest Image Pixel Value	Not used
(0028,0107)	US or SS	3	Largest Image Pixel Value	Not used
(0028,1101)	US or SS	1C	Red Palette Color Lookup Table Descriptor	Not used
(0028,1102)	US or SS	1C	Green Palette Color Lookup Table Descriptor	Not used
(0028,1103)	US or SS	1C	Blue Palette Color Lookup Table Descriptor	Not used
(0028,1201)	OW	1C	Red Palette Color Lookup Table Data	Not used
(0028,1202)	OW	1C	Green Palette Color Lookup Table Data	Not used
(0028,1203)	OW	1C	Blue Palette Color Lookup Table Data	Not used

**Table 19 – DX Anatomy Imaged Module Attributes – mandatory – ref. PS 3.3 - 2007 C.8.11.2**

Group and Element	VR	Type	Description	Value
(0020,0062)	CS	1	Image Laterality	Laterality of (possibly paired) body part (as described in Anatomic Region Sequence (0008,2218)) examined. Enumerated Values: R = right L = left
(0008,2218)	SQ	2	Anatomic Region Sequence	Sequence that identifies the anatomic region of interest in this image (i.e. external anatomy, surface anatomy, or general region of the body). This anatomic region is placed on the table or bucky for examination.
>(0008,0100)	SH	1C	Code Value	T-04000
>(0008,0102)	SH	1C	Coding Scheme Designator	SNM3
>(0008,0104)	LO	1C	Code Meaning	BREAST
>(0008,2220)	SQ	3	Anatomic Region Modifier Sequence	Not used
(0008,2228)	SQ	3	Primary Anatomic Structure Sequence	Not used

**Table 20 – DX Image Module Attributes – mandatory – ref. PS 3.3 - 2007 C.8.11.3**

Group and Element	VR	Type	Description	Value
(0008,0008)	CS	1	Image Type	Image identification characteristics.
(0028,0002)	US	1	Samples per Pixel	Number of samples in this image. Shall have an Enumerated Value of 1.
(0028,0004)	CS	1	Photometric Interpretation	Specifies the intended interpretation of the pixel data: MOMOCHROME2
(0028,0100)	US	1	Bits Allocated	Number of bits allocated for each pixel sample. Each sample shall have the same number of bits allocated.
(0028,0101)	US	1	Bits Stored	Number of bits stored for each pixel sample. Each sample shall have the same number of bits stored.
(0028,0102)	US	1	High Bit	Most significant bit for pixel sample data. Each sample shall have the same high bit.
(0028,0103)	US	1	Pixel Representation	Data representation of the pixel samples. Each sample shall have the same pixel representation. Enumerated

				Value: 0000H = unsigned integer.
(0028,1040)	CS	1	Pixel Intensity Relationship	The relationship between the Pixel sample values and the X-Ray beam intensity. Enumerated Values: LIN, LOG
(0028,1041)	SS	1	Pixel Intensity Relationship Sign	The sign of the relationship between the Pixel sample values stored in Pixel Data (7FE0,0010) and the X-Ray beam intensity. Enumerated Values; 1, -1
(0028,1052)	DS	1	Rescale Intercept	The value b in the relationship between stored values (SV) in Pixel Data (7FE0,0010) and the output units specified in Rescale Type (0028,1054). Output units = m*SV + b. Enumerated Value: 0
(0028,1053)	DS	1	Rescale Slope	m in the equation specified by Rescale Intercept (0028,1052). Enumerated Value: 1
(0028,1054)	LO	1	Rescale Type	Specifies the output units of Rescale Slope (0028,1053) and Rescale Intercept (0028,1052). Enumerated Value: US = Unspecified
(2050,0020)	CS	1	Presentation LUT Shape	Specifies an identity transformation for the Presentation LUT, other than to account for the value of Photometric Interpretation (0028,0004), such that the output of all grayscale transformations defined in the IOD containing this Module are defined to be P-Values. Enumerated Values:  IDENTITY - output is in P-Values - shall be used if Photometric Interpretation (0028,0004) is MONOCHROME2.  INVERSE - output after inversion is in PValues- shall be used if Photometric Interpretation (0028,0004) is MONOCHROME1.
(0028,2110)	CS	1	Lossy Image Compression	Specifies whether an Image has undergone lossy compression. Enumerated Value: 00 = Image has NOT been subjected to

				lossy compression.
(0028,2112)	DS	1	Lossy Image Compression Ratio	Not used
(0008,2111)	ST	3	Derivation Description	Not used
(0018,1400)	LO	3	Acquisition Device Processing Description	Not used
(0018,1401)	LO	3	Acquisition Device Processing Code	Not used
(0020,0020)	CS	1	Patient Orientation	Patient direction of the rows and columns of the image.
(0050,0004)	CS	3	Calibration Image	Not used
(0028,0301)	CS	1	Burned In Annotation	Indicates whether or not image contains sufficient burned in annotation to identify the patient and date the image was acquired. Enumerated Value: NO
(0028,3010)	SQ	1C	VOI LUT Sequence	Not used because SecondLook does not process FOR PRESENTATION images.
(0028,1050)	DS	1C	Window Center	Not used
(0028,1051)	DS	1C	Window Width	Not used
(0028,1055)	LO	3	Window Center & Width Explanation	Not used

**Table 21 – DX Detector Module Attributes – mandatory – ref. PS 3.3 - 2007 C.8.11.4**

Group and Element	VR	Type	Description	Value
(0018,7004)	CS	2	Detector Type	The type of detector used to acquire this image. Defined Terms: SCINTILLATOR = Phosphor used
(0018,7005)	CS	3	Detector Configuration	Not used
(0018,7006)	LT	3	Detector Description	Not used
(0018,7008)	LT	3	Detector Mode	Not used
(0018,700A)	SH	3	Detector ID	The ID or serial number of the detector used to acquire this image.
(0018,700C)	DA	3	Date of Last Detector Calibration	Not used
(0018,700E)	TM	3	Time of Last Detector Calibration	Not used
(0018,7010)	IS	3	Exposures on Detector Since Last Calibration	Not used
(0018,7011)	IS	3	Exposures on Detector Since Manufactured	Not used
(0018,7012)	DS	3	Detector Time Since Last Exposure	Not used
(0018,7014)	DS	3	Detector Active Time	Not used

(0018,7016)	DS	3	Detector Activation Offset From Exposure	Not used
(0018,701A)	DS	3	Detector Binning	Not used
(0018,7000)	CS	3	Detector Conditions Nominal Flag	Not used
(0018,7001)	DS	3	Detector Temperature	Not used
(0018,6000)	DS	3	Sensitivity	Not used
(0018,1147)	CS	3	Field of View Shape	Not used
(0018,1149)	IS	3	Field of View Dimension(s)	Not used
(0018,7030)	DS	1C	Field of View Origin	Not used
(0018,7032)	DS	1C	Field of View Rotation	Not used
(0018,7034)	CS	1C	Field of View Horizontal Flip	Not used
(0018,1164)	DS	1	Imager Pixel Spacing	Physical distance measured at the front plane of the detector housing between the center of each image pixel specified by a numeric pair - row spacing value (delimiter) column spacing value in mm.
(0018,7020)	DS	3	Detector Element Physical Size	Not used
(0018,7022)	DS	3	Detector Element Spacing	Not used
(0018,7024)	CS	3	Detector Active Shape	Not used
(0018,7026)	DS	3	Detector Active Dimension(s)	Not used
(0018,7028)	DS	3	Detector Active Origin	Not used

**Table 22 – Mammography Image Module Attributes – mandatory – ref. PS 3.3 - 2007 C.8.11.7**

Group and Element	VR	Type	Description	Value
(0018,1508)	CS	1	Positioner Type	MAMMOGRAPHIC
(0018,1510)	DS	3	Positioner Primary Angle	Not used
(0018,1511)	DS	3	Positioner Secondary Angle	Not used
(0020,0062)	CS	1	Image Laterality	Laterality of the region examined. Enumerated Values: R = right L = left B = both (e.g. cleavage)
(0040,0318)	CS	1	Organ Exposed	BREAST
(0028,1300)	CS	3	Implant Present	Whether or not an implant is present. Enumerated Values: YES NO
(0028,1350)	CS	3	Partial View	Indicates whether this image is a partial view, that is a subset of a single view of

				the breast. Enumerated Values: YES, NO
(0028,1351)	ST	3	Partial View Description	Not used
(0008,2218)	SQ	1	Anatomic Region Sequence	Sequence that identifies the anatomic region of interest in this image.
>(0008,0100)	SH	1C	Code Value	T-04000
>(0008,0102)	SH	1C	Coding Scheme Designator	SNM3
>(0008,0104)	LO	1C	Code Meaning	BREAST
(0054,0220)	SQ	1	View Code Sequence	Sequence that describes the projection of the anatomic region of interest on the image receptor.  Only a single Item shall be permitted in this sequence.
>(0008,0100)	SH	1C	Code Value	See Table 23
>(0008,0102)	SH	1C	Coding Scheme Designator	See Table 23
>(0008,0104)	LO	1C	Code Meaning	See Table 23
>(0054,0222)	SQ	2	View Modifier Code Sequence	View Modifier  Zero or more Items may be included in this Sequence.
>>(0008,0100)	SH	1C	Code Value	See Table 24
>>(0008,0102)	SH	1C	Coding Scheme Designator	See Table 24
>>(0008,0104)	LO	1C	Code Meaning	See Table 24

**Table 23 - View for Mammography – ref. PS 3.16 –2007 CID 4014**

Coding Scheme Designator (0008,0102)	Code Value (0008,0100)	Code Meaning (0008,0104)
SNM3	R-10224	medio-lateral
SNM3	R-10226	medio-lateral oblique
SNM3	R-10228	latero-medial
SNM3	R-10230	latero-medial oblique
SNM3	R-10242	cranio-caudal
SNM3	R-10244	caudo-cranial (from below)
SNM3	R-102D0	superolateral to inferomedial oblique
SNM3	R-102CF	exaggerated cranio-caudal
SNM3	Y-X1770	cranio-caudal exaggerated laterally
SNM3	Y-X1771	cranio-caudal exaggerated medially

**Table 24 - View Modifier for Mammography – ref. PS 3.16 – 2007 CID 4015**

Coding Scheme Designator (0008,0102)	Code Value (0008,0100)	Code Meaning (0008,0104)
SNM3	R-102D2	Cleavage
SNM3	R-102D1	Axillary Tail
SNM3	R-102D3	Rolled Lateral
SNM3	R-102D4	Rolled Medial
SNM3	R-102D5	Implant Displaced
SNM3	R-102D6	Magnification
SNM3	R-102D7	Spot Compression
SNM3	R-102C2	Tangential

**Table 25 – Acquisition Context Module Attributes – ref. PS 3.3 - 2007 C.7.6.14**

Group and Element	VR	Type	Description	Value
(0040,0555)	SQ	2	Acquisition Context Sequence	Zero items in this sequence
(0040,0556)	ST	3	Acquisition Context Description	Not used

**Table 26 - SOP Common Module Attributes – ref. PS 3.3 - 2007 C.12.1**

Group and Element	VR	Type	Description	Value
(0008,0016)	UI	1	SOP Class UID	“1.2.840.10008.5.1.4.1.1.1.2.1”, which represents FOR PROCESSING or “1.2.840.10008.5.1.4.1.1.1.2”, which represents FOR PRESENTATION
(0008,0018)	UI	1	SOP Instance UID	Uniquely identifies the SOP Instance.
(0008,0005)	CS	1C	Specific Character Set	ISO IR 100
(0008,0012)	DA	3	Instance Creation Date	Not used
(0008,0013)	TM	3	Instance Creation Time	Not used
(0008,0014)	UI	3	Instance Creator UID	Not used
(0008,0110)	SQ	3	Coding Scheme Identification Sequence	Not used
(0008,0201)	SH	3	Timezone Offset From UTC	Not used
(0018,A001)	SQ	3	Contributing Equipment Sequence	Not used
(0020,0013)	IS	3	Instance Number	A number that identifies this Composite object instance.
(0100,0410)	CS	3	SOP Instance Status	Not used
(0100,0420)	DT	3	SOP Authorization Date and Time	Not used
(0100,0424)	LT	3	SOP Authorization Comment	Not used
(0100,0426)	LO	3	Authorization Equipment Certification Number	Not used
(4FFE,0001)	SQ	3	MAC Parameters Sequence	Not used
(FFFA,FFFA)	SQ	1	Digital Signatures Sequence	Not used
(0400,0500)	SQ	1C	Encrypted Attributes Sequence	Not used

The Secondary Capture Image Information Object Definition (IOD) modules are defined in Table 27.

**Table 27 – Secondary Capture Image IOD Modules**

IE	Module	DICOM Reference	Document Reference	Usage
Patient	Patient	PS 3.3 –2007 C.7.1.1	Table 28	M
	Clinical Trial Subject	PS 3.3 –2007 C.7.1.3	Not used	U
Study	General Study	PS 3.3 – 2007 C.7.2.1	Table 29	M
	Patient Study	PS 3.3 – 2007 C.7.2.2	Not used	U
	Clinical Trial Study	PS 3.3 – 2007 C.7.2.3	Not used	U
Series	General Series	PS 3.3 – 2007 C.7.3.1	Table 30	M
	Clinical Trial Series	PS 3.3 – 2007 C.7.3.2	Not used	U
Equipment	General Equipment	PS 3.3 – 2007 C.7.5.1	Table 31	U
	SC Equipment	PS 3.3 – 2007 C.8.6.1	Table 32	M
Image	General Image	PS 3.3 – 2007 C.7.6.1	Table 33	M
	Image Pixel	PS 3.3 – 2007 C.7.6.3	Table 34	M
	SC Image	PS 3.3 – 2007 C.8.6.2	Table 35	M
	Overlay Plane	PS 3.3 – 2007 C.9.2	Not used	U
	Modality LUT	PS 3.3 – 2007 C.11.1	Not used	U
	VOI LUT	PS 3.3 – 2007 C.11.2	Not used	U
	SOP Common	PS 3.3 – 2007 C.12.1	Table 36	M

**Table 28 - Patient Module Attributes – mandatory – ref. PS 3.3 - 2007 C.7.1.1**

Group and Element	VR	Type	Description	Value
(0010,0010)	PN	2	Patient's Name	Patient's full name obtained from the image header.
(0010,0020)	LO	2	Patient ID	Primary hospital identification number or code for the patient obtained from the image header.
(0010,0030)	DA	2	Patient's Birth Date	Birth date of the patient obtained from the image header.
(0010,0040)	CS	2	Patient's Sex	Sex of the named patient obtained from the image header. Enumerated Values: M = male F = female O = other
(0008,1120)	SQ	3	Referenced Patient Sequence	Not used
(0010,0032)	TM	3	Patient Birth Time	Not used
(0010,1000)	LO	3	Other Patient ID	Not used
(0010,1001)	PN	3	Other Patient Names	Not used
(0010,2160)	SH	3	Ethnic Group	Not used
(0010,4000)	LT	3	Patient Comments	Not used



**Table 29 - General Study Module Attributes – Mandatory - ref. PS 3.3 - 2007 C.7.2.1**

Group and Element	VR	Type	Description	Value
(0020,000D)	UI	1	Study Instance UID	Unique identifier for the Study obtained from the image header.
(0008,0020)	DA	2	Study Date	The current date of the CAD processing
(0008,0030)	TM	2	Study Time	The current time of the CAD processing.
(0008,0090)	PN	2	Referring Physician's Name	Not used
(0008,0096)	SQ	3	Referring Physician Identification Sequence	Not used
(0020,0010)	SH	2	Study ID	User or equipment generated Study identifier obtained from the image header.
(0008,0050)	SH	2	Accession Number	A RIS generated number, which identifies the order for the Study obtained from the image header.
(0008,1030)	LO	3	Study Description	Institution-generated description or classification of the Study (component) performed.
(0008,1048)	PN	3	Physicians Of Record	Not used
(0008,1049)	SQ	3	Physician(s) of Record Identification Sequence	Not used
(0008,1060)	PN	3	Name Of Physicians Reading Study	Not used
(0008,1062)	SQ	3	Physician(s) Reading Study Identification Sequence	Not used
(0008,1110)	SQ	3	Referenced Study Sequence	Not used
(0008,1032)	UI	3	Procedure Code Sequence	Not used

**Table 30 - General Series Module Attributes – Mandatory - ref. PS 3.3 - 2007 C.7.3.1**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality	MG
(0020,000E)	UI	1	Series Instance UID	Unique identifier of the Series.
(0020,0011)	IS	2	Series Number	A number that identifies this Series.
(0020,0060)	CS	2C	Laterality	Laterality of (paired) body part examined. Required if the body part examined is a paired structure and Image Laterality (0020,0062) is not sent. Enumerated Values: R = right L = left
(0008,0021)	DA	3	Series Date	Date the Series started.
(0008,0031)	TM	3	Series Time	Time the Series started.
(0008,1050)	PN	3	Performing Physician's Name	Name of the physician(s) administering the Series.
(0008,1052)	SQ	3	Performing Physician Identification Sequence	Not used
(0018,1030)	LO	3	Protocol Name	Not used
(0008,103E)	LO	3	Series Description	Not used
(0008,1070)	PN	3	Operators' Name	Name(s) of the operator(s) supporting the Series.
(0008,1072)	SQ	3	Operator Identification Sequence	Not used
(0008,1111)	SQ	3	Referenced Performed Procedure Step Sequence	Not used
(0018,0015)	CS	3	Body Part Examined	BREAST
(0018,5100)	CS	2C	Patient Position	Not used
(0028,0108)	US or SS	3	Smallest Pixel Value in Series	Not used
(0028,0109)	US or SS	3	Largest Pixel Value in Series	Not used
(0040,0275)	SQ	3	Request Attributes Sequence	Not used
(0040,0253)	SH	3	Performed Procedure Step ID	Not used
(0040,0244)	DA	3	Performed Procedure Step Start Date	Not used
(0040,0245)	TM	3	Performed Procedure Step Start Time	Not used
(0040,0254)	LO	3	Performed Procedure Step Description	Not used
(0040,0260)	SQ	3	Performed Protocol Code Sequence	Not used
(0040,0280)	ST	3	Comments on the Performed Procedure Step	Not used

**Table 31 - General Equipment Module Attributes - Mandatory - ref. PS 3.3 - 2007 C.7.5.1**

Group and Element	Value Rep	Req. Type	Description	Value
(0008,0070)	LO	2	Manufacturer	Manufacturer of the equipment that produced the composite instances.
(0008,0080)	LO	3	Institution Name	Not used
(0008,0081)	ST	3	Institution Address	Not used
(0008,1010)	SH	3	Station Name	Not used
(0008,1040)	LO	3	Institutional Department Name	Not used
(0008,1090)	LO	3	Manufacturer's Model Name	Manufacturer's model name of the equipment that produced the composite instances.
(0018,1000)	LO	3	Device Serial Number	Not used
(0018,1020)	LO	3	Software Version	Not used
(0018,1050)	DS	3	Spatial Resolution	Not used
(0018,1200)	DA	3	Date of Last Calibration	Not used
(0018,1201)	TM	3	Time of Last Calibration	Not used
(0028,0120)	US	3	Pixel Padding Value	Not used

**Table 32 – Secondary Capture Image Equipment Module Attributes – Mandatory - ref. PS 3.3 - 2007 C.8.6.1**

Group and Element	VR	Type	Description	Value
(0008,0064)	CS	1	Conversion Type	DF
(0008,0060)	CS	3	Modality	RG
(0018,1010)	LO	3	Secondary Capture Device ID	User defined identification of the device that converted the image
(0018,1016)	LO	3	Secondary Capture Device Manufacturer	HOWTEK
(0018,1018)	LO	3	Secondary Capture Device Manufacturer's Model Name	HTK-861
(0018,1019)	LO	3	Secondary Capture Device Software Version	Manufacturer's designation of software version of the Secondary Capture Device.
(0018,1022)	SH	3	Video Image Format Acquired	Not used
(0018,1023)	LO	3	Digital Image Format Acquired	Not used

Table 33 – General Image Module Attributes – mandatory – ref. PS 3.3 - 2007 C.7.6.1

Group and Element	VR	Type	Description	Value
(0020,0013)	IS	2	Instance Number	A number that identifies this image.
(0020,0020)	CS	2C	Patient Orientation	Not Available – incorrect order of film scanning could make this invalid
(0008,0023)	DA	2C	Content Date	The date the image pixel data creation started. Required if image is part of a series in which the images are temporally related.
(0008,0033)	TM	2C	Content Time	The time the image pixel data creation started. Required if image is part of a series in which the images are temporally related.
(0008,0008)	CS	3	Image Type	ORIGINAL
(0020,0012)	IS	3	Acquisition Number	Not used
(0008,0022)	DA	3	Acquisition Date	The date the acquisition of data that resulted in this image started.
(0008,0032)	TM	3	Acquisition Time	The time the acquisition of data that resulted in this image started
(0008,002A)	DT	3	Acquisition Datetime	Not used
(0008,1140)	SQ	3	Referenced Image Sequence	Not used
(0008,2111)	ST	3	Derivation Description	Not used
(0008,9215)	SQ	3	Derivation Code Sequence	Not used
(0008,2112)	SQ	3	Source Image Sequence	Not used
(0008,113A)	SQ	3	Referenced Waveform Sequence	Not used
(0020,1002)	IS	3	Images in Acquisition	Not used
(0020,4000)	LT	3	Image Comments	Not used
(0028,0300)	CS	3	Quality Control Image	Not used
(0028,0301)	CS	3	Burned In Annotation	Not used
(0028,2110)	CS	3	Lossy Image Compression	Not used
(0028,2112)	DS	3	Lossy Image Compression Ratio	Not used
(0088,0200)	SQ	3	Icon Image Sequence	Not used
(2050,0020)	CS	3	Presentation LUT Shape	Not used

**Table 34 – Image Pixel Module – mandatory – ref. PS 3.3 - 2007 C.7.6.3**

Group and Element	VR	Type	Description	Value
(0028,0002)	US	1	Samples per Pixel	Number of samples (planes) in this image.
(0028,0004)	CS	1	Photometric Interpretation	Specifies the intended interpretation of the pixel data: MOMOCHROME2
(0028,0010)	US	1	Rows	Number of rows in the image.
(0028,0011)	US	1	Columns	Number of columns in the image.
(0028,0100)	US	1	Bits Allocated	Number of bits allocated for each pixel sample. Each sample shall have the same number of bits allocated.
(0028,0101)	US	1	Bits Stored	Number of bits stored for each pixel sample. Each sample shall have the same number of bits stored.
(0028,0102)	US	1	High Bit	Most significant bit for pixel sample data. Each sample shall have the same high bit.
(0028,0103)	US	1	Pixel Representation	Data representation of the pixel samples. Each sample shall have the same pixel representation. Enumerated Value: 0000H = unsigned integer.
(7FE0,0010)	OW or OB	1	Pixel Data	A data stream of the pixel samples that comprise the Image.
(0028,0006)	US	1C	Planar Configuration	Not used
(0028,0034)	IS	1C	Pixel Aspect Ratio	Not used
(0028,0106)	US or SS	3	Smallest Image Pixel Value	Not used
(0028,0107)	US or SS	3	Largest Image Pixel Value	Not used
(0028,1101)	US or SS	1C	Red Palette Color Lookup Table Descriptor	Not used
(0028,1102)	US or SS	1C	Green Palette Color Lookup Table Descriptor	Not used
(0028,1103)	US or SS	1C	Blue Palette Color Lookup Table Descriptor	Not used
(0028,1201)	OW	1C	Red Palette Color Lookup Table Data	Not used
(0028,1202)	OW	1C	Green Palette Color Lookup Table Data	Not used
(0028,1203)	OW	1C	Blue Palette Color Lookup Table Data	Not used

**Table 35 - Secondary Capture Image Module Attributes – mandatory - ref. PS 3.3 - 2007 C.8.6.2**

Group and Element	VR	Type	Description	Value
(0018,1012)	DA	3	Date Of Secondary Capture	Current date
(0018,1014)	TM	3	Time Of Secondary Capture	Current time

**Table 36 - SOP Common Module Attributes – mandatory – ref. PS 3.3 - 2007 C.12.1**

Group and Element	VR	Type	Description	Value
(0008,0016)	UI	1	SOP Class UID	“1.2.840.10008.5.1.4.1.1.7”
(0008,0018)	UI	1	SOP Instance UID	Uniquely identifies the SOP Instance.
(0008,0005)	CS	1C	Specific Character Set	Not used
(0008,0012)	DA	3	Instance Creation Date	Not used
(0008,0013)	TM	3	Instance Creation Time	Not used
(0008,0014)	UI	3	Instance Creator UID	Not used
(0008,0110)	SQ	3	Coding Scheme Identification Sequence	Not used
(0008,0201)	SH	3	Timezone Offset From UTC	Not used
(0018,A001)	SQ	3	Contributing Equipment Sequence	Not used
(0020,0013)	IS	3	Instance Number	A number that identifies this Composite object instance.
(0100,0410)	CS	3	SOP Instance Status	Not used
(0100,0420)	DT	3	SOP Authorization Date and Time	Not used
(0100,0424)	LT	3	SOP Authorization Comment	Not used
(0100,0426)	LO	3	Authorization Equipment Certification Number	Not used
(4FFE,0001)	SQ	3	MAC Parameters Sequence	Not used
(FFFA,FFFA)	SQ	3	Digital Signatures Sequence	Not used
(0400,0500)	SQ	1C	Encrypted Attributes Sequence	Not used

**3.3.6.9 Receive End of Case Message from a Remote System**

**3.3.6.10 Associated Real World Activity – Receive End of Case**

SecondLook® Digital can receive a DICOM Basic Study Content Notification message from remote devices that indicates the entire case has been sent and the SecondLook® Digital systems can begin case-based processing.

**3.3.6.11 Presentation Context Table – Receive End of Case**

SecondLook® Digital supports the transfer syntaxes listed in Table 37. For receiving CAD output, SecondLook® Digital will propose the Presentation Contexts listed in Table 38.

**Table 37 - Receive End of Case Transfer Syntaxes**

Transfer Syntaxes	UID
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
DICOM Explicit Little Endian	1.2.840.10008.1.2.1
DICOM Explicit Big Endian	1.2.840.10008.1.2.2

**Table 38 – Presentation Contexts for Receive of End of Case from Remote Systems**

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
SOP Class	SOP Class UID			
Basic Study Content Notification	1.2.840.10008.1.9	Declared in Table 37	SCP	None

**3.3.6.12 SOP Specific Conformance – Receive End of Case**

The SecondLook® SCP conforms to the SOP’s of the Storage Service Class at Level 2 (Full) as described in Section B.4.1 of PS 3.4 – 2007 of the DICOM Standard. The status codes shown in Table 39 may be sent back to the Remote SCU after the SCU tries to open an association and send a DICOM Basic Study Content Notification to the SecondLook® Digital system.

**Table 39 - End of Case Response Status Codes**

Status Code	Service Status	Explanation
A900	Refused	The image data that was received was invalid.
0110	Error	An internal system error occurred when receiving the image and storing it to disk.
C002	Error	Failed C-Store operation
0002	Success	None of the study content exists on the system.
0001	Success	Partial study content exists.
0000	Success	Indicates that an association was successfully established and an image was successfully stored and queued for processing.

The Basic Study Descriptor Object Definition (IOD) modules are defined in Table 40.

**Table 40 – Basic Study Descriptor IOD Modules**

Module	DICOM Reference	Document Reference	Usage
Patient Summary	PS 3.3 –2004 C.7.7	Table 40	M
Study Content	PS 3.3 –2004 C.7.8	Table 41	M
SOP Common	PS 3.3 –2004 C.12.1	Table 42	M

**Table 41 – Patient Summary Module Attributes – mandatory – ref. PS 3.3 - 2004 C.7.7**

Group and Element	VR	Type	Description	Value
(0010,0010)	PN	2	Patient’s Name	Patient’s full name
(0010,0020)	LO	2	Patient ID	Primary hospital identification number or code for the patient.

**Table 42 – Study Content Module Attributes – mandatory – ref. PS 3.3 - 2004 C.7.8**

Group and Element	VR	Type	Description	Value
(0020,0010)	SH	2	Study ID	User or equipment generated Study identifier
(0020,000D)	UI	2	Study Instance UID	Unique identifier for the Study
(0008,1115)	SQ	1	Referenced Series Sequence	Sequence of Repeating Items where each Item includes the Attributes of a Series. Zero or more Items may be included in this Sequence.
>(0020,000E)	UI	1	Series Instance UID	Unique identifier of the Series.
>(0008,0054)	AE	2C	Retrieve AE Title	Not used
>(0088,0130)	SH	2C	Storage Media File-Set ID	Not used
>(0088,0140)	UI	2C	Storage Media File-Set UID	Not used
>(0088,1140)	SQ	1	Referenced Image Sequence	Sequence of Repeating Items where each Item provides reference to a set of Image SOP Class/SOP Instance pairs that are contained in the Series identified by the Series Instance UID (0020,000E).
>>(0008,1150)	UI	2	Referenced SOP Class UID	Uniquely identifies the referenced SOP Class. This Attribute is used only if Images may be retrieved as Single Image SOP Classes.
>>(0008,1155)	UI	2	Referenced SOP Instance UID	Uniquely identifies the referenced SOP Instance. This Attribute is used only if Images may be retrieved as Single Image SOP Classes.
>>(0008,0054)	AE	2C	Retrieve AE	Not used
>>(0088,0130)	SH	2C	Storage Media File-Set ID	Not used
>>(0088,0140)	UI	2C	Storage Media File-Set UID	Not used



**Table 43 - SOP Common Module Attributes – mandatory – ref. PS 3.3 - 2004 C.12.1**

Group and Element	VR	Type	Description	Value
(0008,0016)	UI	1	SOP Class UID	“1.2.840.10008.1.9”
(0008,0018)	UI	1	SOP Instance UID	Uniquely identifies the SOP Instance.
(0008,0005)	CS	1C	Specific Character Set	Not used
(0008,0012)	DA	3	Instance Creation Date	Not used
(0008,0013)	TM	3	Instance Creation Time	Not used
(0008,0014)	UI	3	Instance Creator UID	Not used
(0008,0110)	SQ	3	Coding Scheme Identification Sequence	Not used
(0008,0201)	SH	3	Timezone Offset From UTC	Not used
(0018,A001)	SQ	3	Contributing Equipment Sequence	Not used
(0020,0013)	IS	3	Instance Number	A number that identifies this Composite object instance.
(0100,0410)	CS	3	SOP Instance Status	Not used
(0100,0420)	DT	3	SOP Authorization Date and Time	Not used
(0100,0424)	LT	3	SOP Authorization Comment	Not used
(0100,0426)	LO	3	Authorization Equipment Certification Number	Not used
(4FFE,0001)	SQ	3	MAC parameters Sequence	Not used
(FFFA,FFFA)	SQ	3	Digital Signatures Sequence	Not used
(0400,0500)	SQ	1C	Encrypted Attributes Sequence	Not used

**3.3.6.13 Output of CAD Results to a Remote System**

**3.3.6.14 Associated Real World Activity – CAD Output**

SecondLook® Digital will issue a storage request (DICOM C-STORE) when it is done processing the images for the patient case. The CAD results will be sent over a single association to the configured remote device. Only one DICOM structured report will be sent per case.

**3.3.6.15 Presentation Context Table – CAD Output**

SecondLook® Digital supports the transfer syntaxes listed in Table 44. When sending CAD output, SecondLook® Digital will propose the Presentation Contexts listed in Table 45.

**Table 44 – CAD Output Transfer Syntaxes**

Transfer Syntaxes	UID
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
DICOM Explicit Little Endian	1.2.840.10008.1.2.1
DICOM Explicit Big Endian	1.2.840.10008.1.2.2

**Table 45 – Presentation Contexts for CAD Output to Remote Device**

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
SOP Class	SOP Class UID			
Enhanced Structured Report	1.2.840.10008.5.1.4.1.1.88.22	Declared in Table 44	SCU	None
Mammography CAD Structured Report	1.2.840.10008.5.1.4.1.1.88.50	Declared in Table 44	SCU	None
Radiotherapy Structure Set (RTSS)	1.2.840.10008.5.1.4.1.1.481.3	Declared in Table 44	SCU	None
Grayscale Softcopy Presentation State (GSPS)	1.2.840.10008.5.1.4.1.1.11.1	Declared in Table 44	SCU	None
Digital Mammography X-Ray – For Presentation with or without overlay	1.2.840.10008.5.1.4.1.1.1.2	Declared in Table 44	SCU	None
Digital Mammography X-Ray – For Processing with or without overlay	1.2.840.10008.5.1.4.1.1.1.2.1	Declared in Table 44	SCU	None

**3.3.6.16 SOP Specific Conformance – CAD Output**

SecondLook® Digital will process each image to determine the existence of any suspicious regions. The results of this processing will be combined into a single DICOM Enhanced Structured Report, a DICOM Mammography CAD Structured Report, a Radiotherapy Structure Set (RTSS) object, a Grayscale Softcopy Presentation State (GSPS) object, or a Digital Mammography X-Ray image with the CAD detections applied to the overlay that will be sent to the remote system.

SecondLook® Digital performs a C-STORE request of the DICOM Structured Report to the configured remote device(s) and processes the C-STORE response message according to Table 46. Note that failure to open an association to a remote device will cause the patient case to be marked as failed in the SecondLook® database.

**Table 46 – Structured Report C-STORE Response Codes**

Service Status	Further Meaning	Protocol Codes	Description
Success	Success	0x0000	Operation performed properly. Patient case is marked as completed in the SecondLook® database.
Non-Success	Any message that was not successful, such as a Refusal, Error, Failure, or Warning.	Non-Zero	Patient case is marked as failed to send Structured Report in the SecondLook® database.

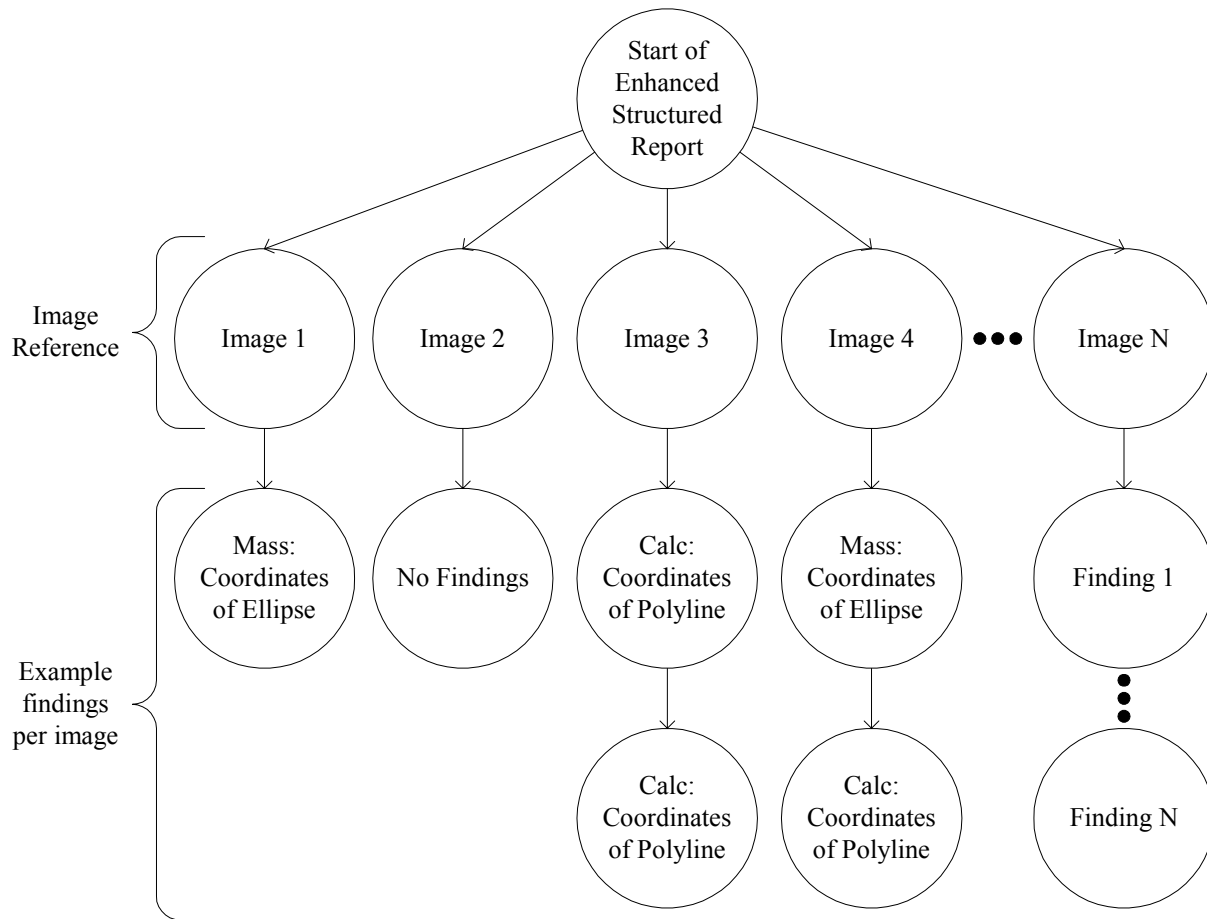
The type of output that is produced and the recipients of the output is configurable from the SecondLook® graphical user interface. Table 47 shows the DICOM information object definition (IOD) modules that are necessary to create the DICOM Mammography CAD Structured Report and the DICOM Enhanced Structured Report. The major difference between the two reports is the SR Document Content module, where the Mammography CAD Structured Report utilizes templates.

**Table 47 - Structured Report IOD Modules**

IE	Module	DICOM Reference	Document Reference	Usage
Patient	Patient Module	PS 3.3 – 2007 C.7.1.1	Table 48	M
Study	General Study	PS 3.3 – 2007 C.7.2.1	Table 49	M
	Patient Study	PS 3.3 – 2007 C.7.2.2	Table 50	U
Series	SR Document Series	PS 3.3 – 2007 C.17.1	Table 51	M
Equipment	General Equipment	PS 3.3 – 2007 C.7.5.1	Table 52	M
Document	SR Document General	PS 3.3 – 2007 C.17.2	Table 53	M
	SR Document Content	PS 3.3 – 2007 C.17.3	Table 54 for the Enhanced SR, Table 56 for the Mammo CAD SR.	M
	SOP Common	PS 3.3 – 2007 C.12.1	Table 55	M

**3.3.6.16.1 Storage of CAD Results – Enhanced Structured Report**

SecondLook® Digital will process each image to determine the existence of any suspicious regions. The results of this processing will be combined into a single DICOM Enhanced Structured Reporting message that will be sent to the remote system (that is if the remote device was configured to receive this output). Table 47 defines the DICOM modules that are used to create the Enhanced Structured Report. A high-level overview of the structure of the DICOM Enhanced Structured Report is shown in Figure 3.1. This figure shows that there can be any number of images for the study existing under the root node. Underneath each image contains information from the CAD processing, whether a mass was found, a calc was found, or if CAD failed. If a detection was found, then the coordinates for the detection shall be provided. If no information exists after the image node, then the CAD processing found no detections.



**Figure 3.1 - Enhanced Structured Report Overview**

**Table 48 - Patient Module Attributes – mandatory – ref. PS 3.3 - 2007 C.7.1.1**

Group and Element	VR	Type	Description	Value
(0010,0010)	PN	2	Patient's Name	Patient's full name obtained from the image header.
(0010,0020)	LO	2	Patient ID	Primary hospital identification number or code for the patient obtained from the image header.
(0010,0030)	DA	2	Patient's Birth Date	Birth date of the patient obtained from the image header.
(0010,0040)	CS	2	Patient's Sex	Sex of the named patient obtained from the image header. Enumerated Values: M = male F = female O = other
(0008,1120)	SQ	3	Referenced Patient Sequence	Not used
>(0008,1150)	UI	1C	Referenced SOP Class UID	Not used
>(0008,1155)	UI	1C	Referenced SOP Instance UID	Not used
(0010,0032)	TM	3	Patient Birth Time	Not used
(0010,1000)	LO	3	Other Patient ID	Not used
(0010,1001)	PN	3	Other Patient Names	Not used
(0010,2160)	SH	3	Ethnic Group	Not used
(0010,4000)	LT	3	Patient Comments	Not used

**Table 49 - General Study Module Attributes – Mandatory - ref. PS 3.3 - 2007 C.7.2.1**

Group and Element	VR	Type	Description	Value
(0020,000D)	UI	1	Study Instance UID	Unique identifier for the Study obtained from the image header.
(0008,0020)	DA	2	Study Date	The current date of the CAD processing
(0008,0030)	TM	2	Study Time	The current time of the CAD processing.
(0008,0090)	PN	2	Referring Physician's Name	Not used
(0020,0010)	SH	2	Study ID	User or equipment generated Study identifier obtained from the image header.
(0008,0050)	SH	2	Accession Number	A RIS generated number, which identifies the order for the Study obtained from the image header.
(0008,1030)	LO	3	Study Description	Institution-generated description or classification of the Study (component) performed.
(0008,1048)	PN	3	Physicians Of Record	Not used
(0008,1049)	SQ	3	Physician(s) of Record	Not used

			Identification Sequence	
(0008,1060)	PN	3	Name Of Physicians Reading Study	Not used
(0008,1062)	SQ	3	Physician(s) Reading Study Identification Sequence	Not used
(0008,1110)	SQ	3	Referenced Study Sequence	Not used
(0008,1032)	SQ	3	Procedure Code Sequence	Not used

**Table 50 - Patient Study Module Attributes – Optional - ref. PS 3.3 - 2007 C.7.2.2**

Group and Element	VR	Type	Description	Value
(0008,1080)	LO	3	Admitting Diagnosis Description	Not used
(0010,1010)	AS	3	Patient's Age	Not used
(0010,1020)	DS	3	Patient Size	Not used
(0010,1030)	DS	3	Patient Weight	Not used
(0010,2180)	SH	3	Occupation	Not used
(0010,21B0)	LT	3	Additional Patient History	Not used

**Table 51 - SR Document Series Module Attributes - Mandatory - ref. PS 3.3 - 2007 C.17.1**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality Type	"SR"
(0020,000E)	UI	1	Series Instance UID	1.2.840.1114191.3.XX.XX.1.2.0.YYYY, where XXXX = machine unique identifier and YYYY = timestamp
(0020,0011)	IS	1	Series Number	1
(0008,1111)	SQ	2	Referenced Study Component Sequence	Not used

**Table 52 - General Equipment Module Attributes - Mandatory - ref. PS 3.3 - 2007 C.7.5.1**

Group and Element	VR	Type	Description	Value
(0008,0070)	LO	2	Manufacturer	"iCAD, Inc."
(0008,0080)	LO	3	Institution Name	Not used
(0008,0081)	ST	3	Institution Address	Not used
(0008,1010)	SH	3	Station Name Unit #	Not used
(0008,1040)	LO	3	Institutional Department Name	Not used
(0008,1090)	LO	3	Manufacturer's Model Name	"CAD Manager"
(0018,1000)	LO	3	Device Serial Number	Not used
(0018,1020)	LO	3	Software Version	Not used
(0018,1050)	DS	3	Spatial Resolution mm	Not used
(0018,1200)	DA	3	Date of Last Calibration	Not used
(0018,1201)	TM	3	Time of Last Calibration	Not used
(0028,0120)	US	3	Pixel Padding Value	Not used

**Table 53 - SR Document General Module Attributes – ref. PS 3.3 - 2007 C.17.2 – Table C.17-2**

Group and Element	VR	Type	Description	Value
(0020,0013)	SH	1	Instance Number	"1"
(0040,A491)	CS	1	Completion Flag	"COMPLETE"
(0040,A492)	LO	3	Completion Flag Description	Not used
(0040,A493)	CS	1	Verification Flag	"UNVERIFIED"
(0008,0023)	DA	1	Content Date	The current date of the CAD processing.
(0008,0033)	TM	1C	Content Time	The current time of the CAD processing.
(0040,A073)	SQ	1	Verifying Observer Sequence	1
>(0040,A075)	PN	1	Verifying Observer Name	"SecondLook CAD"
>(0040,A088)	SQ	2	Verifying Observer Identification Code Sequence	Not used
>(0040,A027)	LO	1	Verifying Organization	Not used
>(0040,A030)	DT	1	Verification DateTime	The current date and time of the CAD processing.
(0040,A360)	SQ	1C	Predecessor Documents Sequence	Not used
(0040,A525)	SQ	1C	Identical Documents Sequence	Not used
(0040,A370)	SQ	1C	Referenced Request Sequence	Not used
(0040,A372)	SQ	2	Performed Procedure Code Sequence	Not used
(0040,A375)	SQ	1C	Current Requested Procedure Evidence Sequence	A single sequence that contains the Study Instance UID, Series Instance UID, Referenced SOP Class UID, and Referenced SOP Instance UID for each image in the study. This sequence is described in the DICOM standard PS 3.3 – 2007 in Table C.17-3
>(0020,000D)	UI	1	Study Instance UID	Unique identifier for the Study obtained from the image header.
>(0008,1115)	SQ	1	Referenced Series Sequence	Sequence repeats for each image that exists in the study. The sequence contains the Attributes of a Series containing Composite Objects.
>>(0020,000E)	UI	1	Series Instance UID	Unique identifier of a Series obtained from the image header that is part of this Study and contains referenced Composite Objects.
>>(0008,0054)	AE	3	Retrieve AE Title	Not used
>>(0068,0130)	SH	3	Storage Media File-Set	Not used

			ID	
>>(0068,0140)	UI	3	Storage Media File-Set UID	Not used
>>(0008,1199)	SQ	1	Referenced SOP Sequence	References to Composite Object SOP Class/SOP Instance pairs that are part of the Study defined by Study Instance UID and the Series defined by Series Instance UID (0020,000E) and are obtained from the image header.
>>>(0008,1150)	UI	1	Referenced SOP Class UID	Uniquely identifies the referenced SOP Class that is obtained from the image header.
>>>(0008,1155)	UI	1	Referenced SOP Instance UID	Uniquely identifies the referenced SOP instance that is obtained from the image header.

**Table 54 - SR Document Content Module Attributes – Ref. PS 3.3 - 2007 C.17-3 – Table C.17.3-3**

Group and Element	VR	Type	Description	Value
(0040,A032)	DT	1C	Observation Date Time	Not used
(0040,A504)	SQ	1C	Content Template Sequence	Not used
(0040,A040)	CS	1	Value Type	"CONTAINER"
(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>(0008,0100)	SH	1C	Code Value	111036
>(0008,0102)	SH	1C	Coding Scheme Designator	DCM
>(0008,0104)	LO	1C	Code Meaning	"Mammography CAD Report"
(0040,A050)	CS	1	Continuity of Content	"SEPARATE"
(0040,A730)	SQ	1C	Content Sequence	Repeat this sequence for number of films
>(0040,A010)	CS	1	Relationship Type	"CONTAINS"
>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Not used
>(0040,A040)	CS	1	Value Type	"CONTAINER"
>(0040,A050)	CS	1	Continuity of Content	"SEPARATE"
>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	T-04000
>>(0008,0102)	SH	1C	Coding Scheme Designator	SNM3
>>(0008,0104)	LO	1C	Code Meaning	Breast
>(0008,1199)	SQ	2	Referenced SOP Sequence	1
>(0008,1150)	UI	1C	Referenced SOP Class UID	The referenced SOP class UID for the current image in this sequence.



>(0008,1155)	UI	1C	Referenced SOP Instance UID	The referenced SOP Instance UID for the current image in this sequence.
>(0040,A730)	SQ	1C	Content Sequence	This sequence is repeated for each detection that is found in for the current image in the sequence.
>(0040,A040)	CS	1C	Value Type	"SCOORD"
>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	F-01796 if the detection is a density. F-01776 if the detection is a calcification. 111224 if there was a CAD failure
>>(0008,0102)	SH	1C	Coding Scheme Designator	SRT
>>(0008,0104)	LO	1C	Code Meaning	"Mammographic breast density", "Individual Calcification", or "Failed"
>(0070,0022)	FL	1C	Graphic Data	The coordinates that define the outline of the detection. If Graphic Type (0070,0023) is "ELLIPSE" then there shall exist four pixel (column,row) pairs, the first two points specifying the endpoints of the major axis and the second two points specifying the endpoints of the minor axis. If Graphic Type (0070,0023) is "POLYLINE", then a list of five points (column, row pairs) will be given where straight lines are to be drawn from each point and the first and last vertices are equal to enclose the rectangle. This will not exist if there is a CAD failure.
>(0070,0023)	CS	1C	Graphic Type	"ELLIPSE" for a density. "POLYLINE" for a calcification. This will not exist if there is a CAD failure.

**Table 55 - SOP Common Module Attributes – Mandatory – ref. PS 3.3 - 2007 C.12.1 – Table C.12-1**

Group and Element	VR	Type	Description	Value
(0008,0016)	UI	1	SOP Class UID	“1.2.840.10008.5.1.4.1.1.8 8.22”, which represents Enhanced Structured Report.
(0008,0018)	UI	1	SOP Instance UID	Instance UID for the Structured Report. It will have the format of: 1.2.840.114191.3.XX.XX.1.2.1.YYYY, where XXXX is a number unique to the SecondLook® system, and YYYY is a timestamp.
(0008,0005)	CS	1C	Specific Character Set	Not used
(0008,0012)	DA	3	Instance Creation Date	Current date of the CAD processing.
(0008,0013)	TM	3	Instance Creation Time	Current time of the CAD processing.
(0008,0014)	UI	3	Instance Creator UID	Implementation UID of the SecondLook® system in the format of 1.2.840.114191.2.XXXXXX, where XXXXX is a number unique to each SecondLook® system.
(0008,0110)	SQ	3	Coding Scheme Identification Sequence	Not used
(0008,0201)	SH	3	Timezone Offset From UTC	Not used
(0018,A001)	SQ	3	Contributing Equipment Sequence	Not used
(0020,0013)	IS	3	Instance Number	“1”
(0100,0410)	CS	3	SOP Instance Status	Not used
(0100,0420)	DT	3	SOP Authorization Date and Time	Not used
(0100,0424)	LT	3	SOP Authorization Comment	Not used
(0100,0426)	LO	3	Authorization Equipment Certification Number	Not used
(4FFE,0001)	SQ	3	MAC Parameters Sequence	Not used
(FFFA,FFFA)	SQ	3	Digital Signatures Sequence	Not used

### 3.3.6.16.1.2 Storage of CAD Results – Mammography CAD Structured Report

SecondLook® Digital will process each image to determine the existence of any suspicious regions. The results of this processing will be combined into a single DICOM Mammography CAD Structured Reporting message that will be sent to the remote system (that is if the remote device was configured to receive this output). The Mammography CAD Structured Report is more comprehensive than the Enhanced Structured Report. Both reports contain the same modules, however the Structured Report Document Content Module contains much more detail. Table 47 defines the DICOM modules that are used to create the Mammography CAD Structured Report. The Mammography CAD Structured Report reuses the following tables from the Enhanced Structured Report: Table 48, Table 49, Table 50, Table 51, Table 52, Table 53, and Table 55. Table 56 defines the Mammography CAD Structured Report's Document Content Module, which utilizes the Mammography CAD SR templates.

A high-level overview of the structure of the DICOM Mammography CAD Structured Report is shown in Figure 3.2. This figure shows that there are five nodes that exist from the root node: the Language of Content Item and Descendants, the Image Library, the Mammography CAD Overall Impressions / Recommendations, the Summary of Detections, and the Summary of Analyses.

The Language of Content Item and Descendants indicates that the language of the report is English and the country of the language is the United States. The Image Library contains an entry for each image in the study. It contains the SOP Class UID and Instance UID and any of the following values if they are included in the image header: the Image Laterality, the Image View, the Image View Modifier, the Patient Orientation Row, the Patient Orientation Column, the Study Date, the Study Time, the Content Date, the Content Time, the Horizontal Imager Pixel Spacing, and the Vertical Imager Pixel Spacing. The node position of each image is significant, for it's the node position, not the Instance UID, which is used for reference by each CAD detection. The Mammography CAD Overall Impressions / Recommendations node contains an overall status summary of the CAD processing. The status values will be either "All algorithms succeeded; without findings", "All algorithms succeeded; with findings", "Not all algorithms succeeded; without findings", "Not all algorithms succeeded; with findings", or "no algorithms succeeded; without findings". The Mammography CAD Overall Impressions / Recommendations node will exist for each image. It will contain information in regards to Rendering Intent for the processed image as well as any Single Image Findings. Potential Single Image Findings are Breast Geometry (7.2+), Mammography Breast Density, Calcification Cluster, and Individual Calcifications (7.2+).

A Breast Geometry Single Image Finding shall consist of a Rendering Intent, Algorithm Name, Algorithm Version, a Breast Outline Including Pectoral Muscle, and depending on the view a Pectoral Muscle Outline. This feature is only available with version 7.2+ or greater.

A Mammography Breast Density Single Image Finding shall consist of a Rendering Intent, Algorithm Name, Algorithm Version, a Center Point of the density, an Outline of the density, the Long Axis of the density (7.2+), and the Area of the density (7.2+).

A Calcification Cluster Single Image Finding shall consist of a Rendering Intent, Algorithm Name, Algorithm Version, a Center Point of the cluster, an Outline of the cluster, the Number of Calcifications within the cluster (7.2+), and the Area of the cluster (7.2+). For each Calcification Cluster, there will be a Single Image Finding for each Individual Calcification within the cluster (7.2+). The Individual Calcification Single Image Finding shall contain a Rendering Intent, Algorithm Name, Algorithm Version, a Center Point of the calc, and an Outline of the calc.

In the Mammography CAD SR, all Type 1 attributes shall be present with a valid value (not zero length), and all Type 2 attributes shall be present. The following Type 2 and Type 3 attributes shall be present with a nonzero length value:

- (0008,0020) Study Date
- (0008,0023) Content Date
- (0008,0030) Study Time: may be zero length, if not present or zero length in the corresponding images
- (0008,0033) Content Time
- (0008,0070) Manufacturer
- (0008,1010) Station Name
- (0008,1090) Manufacturer's Model Name
- (0010,0010) Patient's Name
- (0010,0020) Patient ID: may be zero length, if not present or zero length in the corresponding images
- (0018,1000) Device Serial Number
- (0018,1020) Software Versions

The following Type 3 attributes may be present with a nonzero length value:

- (0008,0080) Institution Name
- (0008,0081) Institution Address

For the Mammography CAD SR, the Content Sequence (0040,A730) shall follow the rules of TID 4000 Mammography CAD Document Root Template, as defined in DICOM PS 3.16-2007. All Mandatory content items shall be present.

Local CAD Processing is capable of performing "Mammography breast density", "Calcification Cluster", "Nipple" (7.2+), and "Breast Geometry" (7.2+) detection. The following templates are supported:

- TID 4000 Mammography CAD Document Root
- TID 4001 Mammography CAD Overall Impression/Recommendation
- TID 4003 Mammography CAD Individual Impression/Recommendation
- TID 4006 Mammography CAD Single Image Finding
- TID 4010 Mammography CAD Calcification Cluster
- TID 4011 Mammography CAD Density
- TID 4015 CAD Detections Performed
- TID 4017 CAD Detection Performed
- TID 4019 CAD Algorithm Identification
- TID 4020 CAD Image Library Entry

- TID 4021 Mammography CAD Geometry

Content items that require “Rendering Intent” as a child content item shall have the value “Presentation Required” or “Presentation Optional”.

The following User Optional content items may be present if the features are enabled in the System Configuration table and the system is running version 7.2+ or greater:

- TID 4006 Mammography CAD Single Image Finding, Row 1, DCID (6014) (SNM3, T-04100, “Nipple”)
- TID 4006 Mammography CAD Single Image Finding, Row 1, DCID (6014) (DCM, 111100, “Breast geometry”)
- TID 4006 Mammography CAD Single Image Finding, Row 3 (111071, DCM, “CAD Operating Point”)
- TID 4006 Mammography CAD Single Image Finding, Row 5 (111012, DCM, “Certainty of Finding”)
- TID 4006 Mammography CAD Single Image Finding, Row 24, Include TID 4006 for (F-01776, SRT, “Individual Calcification”)
- TID 4008 Mammography CAD Breast Geometry, Row 1, DCID (6014) (DCM, 111007, “Breast Outline including Pectoral Muscle Tissue”)
- TID 4008 Mammography CAD Breast Geometry, Row 3, DCID (6014) (DCM, 111045, “Pectoral Muscle Outline”)
- TID 4010 Mammography CAD Calcification Cluster, Row 3 (111038, DCM, “Number of calcifications”)
- TID 4010 Mammography CAD Calcification Cluster, Row 5, DTID (1401) “Area Measurement”, using Row 1 as “Area Measurements”
- TID 4011 Mammography CAD Density, Row 4, DTID (1400) “Linear Measurement”, using Row 1 as “Long Axis”
- TID 4011 Mammography CAD Density, Row 5, DTID (1401) “Area Measurement”, using Row 1 as “Area Measurements”
- TID 4021 Mammography CAD Geometry Template, Row 3 (111041, DCM, “Outline”), for (F-01796, SRT, “Mammography breast density”) and (F-01776, SRT, “Individual Calcification”) findings
- TID 4021 Mammography CAD Geometry Template, Row 5, CAD Geometry Secondary Graphical Representation (113663, DCM, “Outer limits of fuzzy margin”), for (F-01796, SRT, “Mammography breast density”)
- TID 4017 CAD Detection Performed, Row 9 , DTID (4023) CAD Operating Points
- TID 4023 CAD Operating Points, Row 1, (111072, DCM, “Maximum CAD Operating Point”)
- TID 4023 CAD Operating Points, Row 2, (111092, DCM, “Recommended CAD Operating Point”)
- TID 4023 CAD Operating Points, Row 3, (111093, DCM, “CAD Operating Point Table”)
- TID 4023 CAD Operating Points, Row 7, (111081, DCM, “CAD Operating Point Description”)

The following standard extended attribute for Mammography CAD SR can optionally be added with the 7.2+ release or greater and populated with a configurable string.

- (0008,103E) Series Description

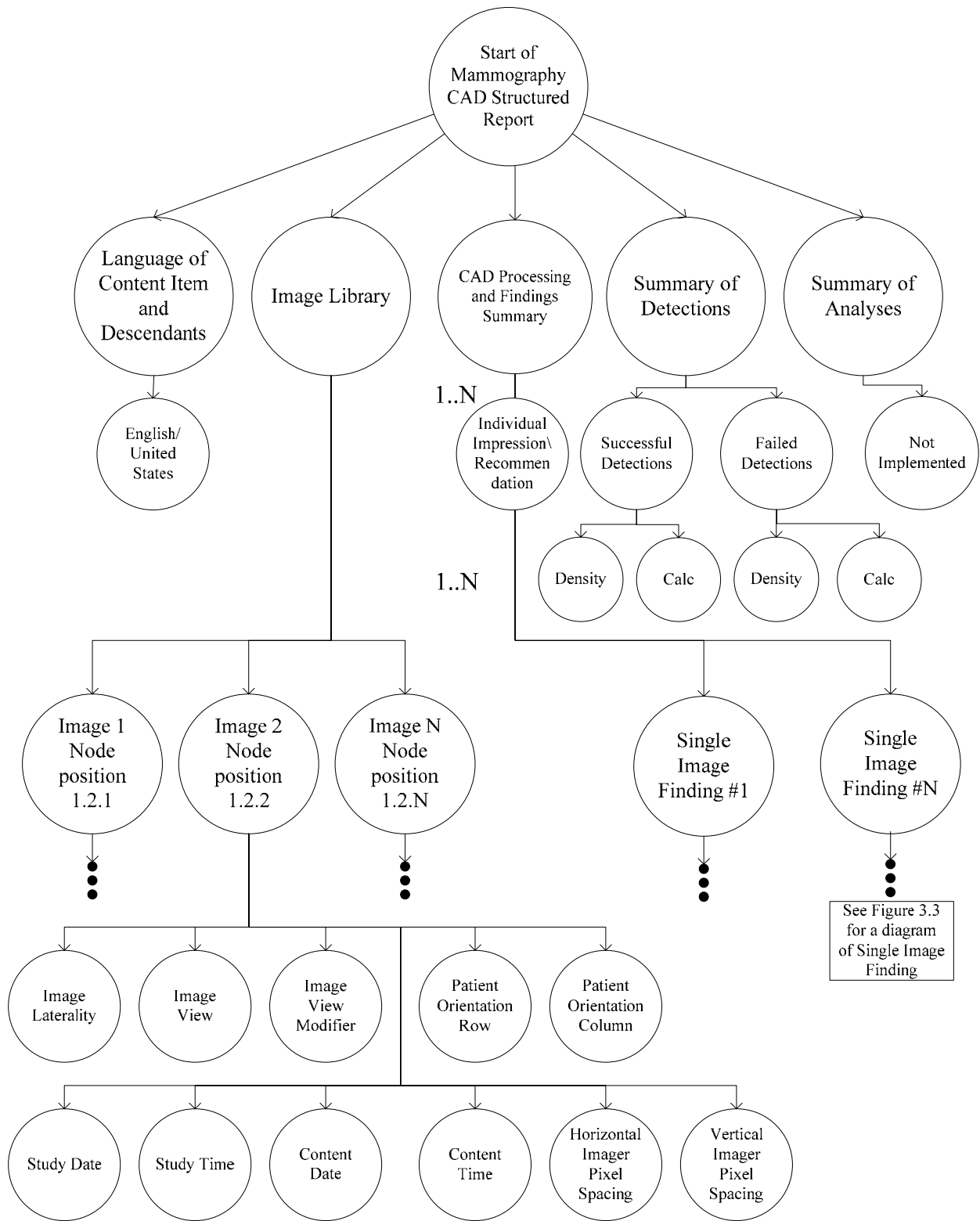


Figure 3.2 - Mammography CAD Structured Report Overview

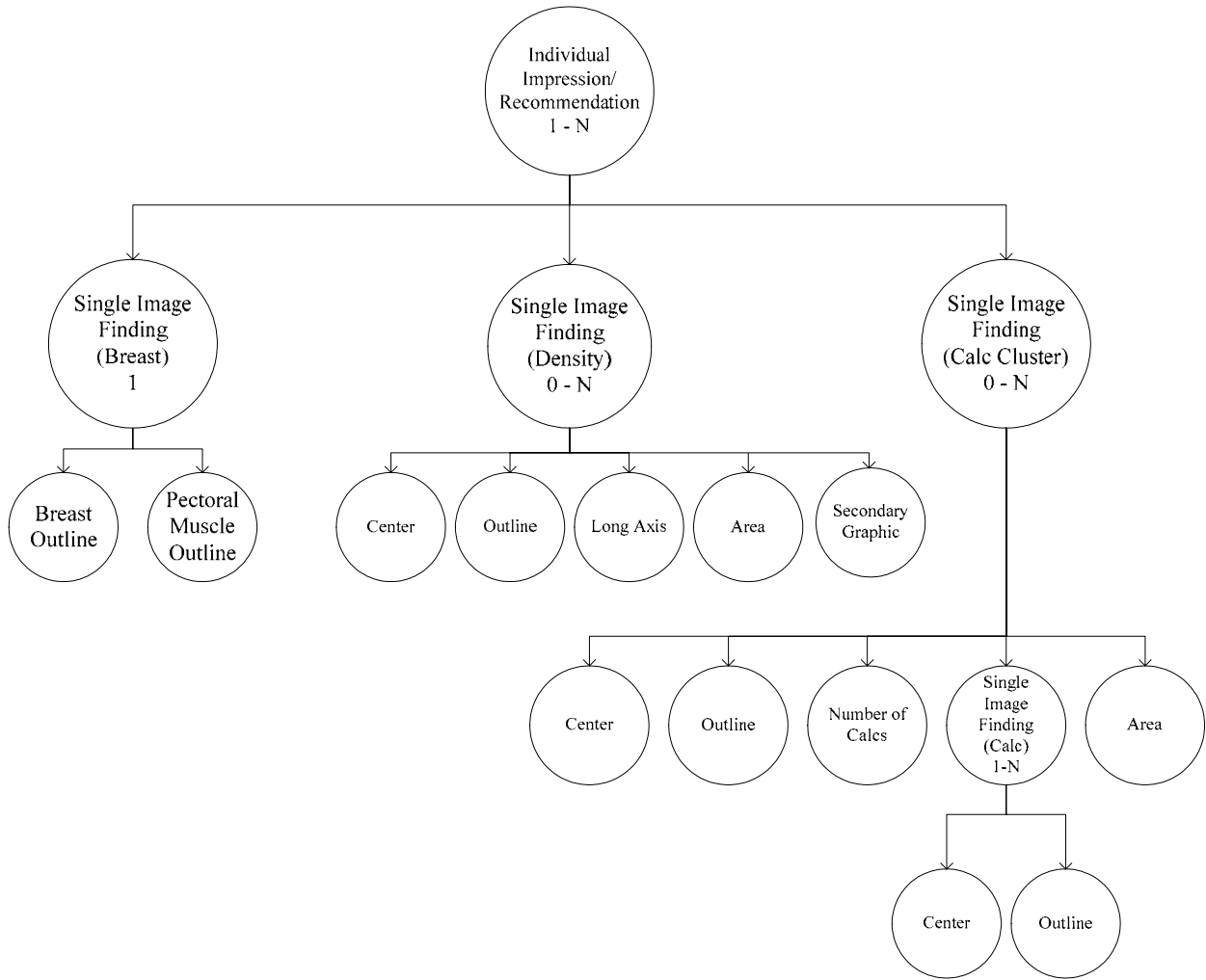


Figure 3.3 - Mammography CAD Structured Single Image Finding



Table 56 - SR Document Content – Ref. PS 3.3 - 2007 C.17-3 – Table C.17.4

Group and Element	VR	Type	Description	Value
(0040,A040)	CS	1	Value Type	“CONTAINER”
(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>(0008,0100)	SH	1C	Code Value	111036
>(0008,0102)	SH	1C	Coding Scheme Designator	DCM
>(0008,0104)	LO	1C	Code Meaning	“Mammography CAD Report”
(0040,A050)	CS	1	Continuity of Content	"SEPARATE"
(0040,A504)	SQ	1C	Content Template Sequence	1
>(0008,0105)	CS	1	Mapping Resource	“DCMR”
>(0040,DB00)	CS	1	Template Identifier	“TID 4000”
(0040,A730)	SQ	1	Content Sequence	Include sequence for “Language of Content Item and Descendants”. See Table 57.
(0040,A730)	SQ	1	Content Sequence	Include “Image Library” container. See Table 58.
(0040,A730)	SQ	1	Content Sequence	Include “Mammography CAD Overall Impression / Recommendation” container. See Table 59.
(0040,A730)	SQ	1	Content Sequence	Include “Summary of Detections”. See Table 63.
(0040,A730)	SQ	1	Content Sequence	Include “Summary of Analyses”. See Table 64.

Table 57 - Language of Content Item and Descendants

Group and Element	VR	Type	Description	Value
>(0040,A010)	CS	1	Relationship Type	“HAS CONCEPT MOD”
>(0040,A040)	CS	1	Value Type	“CODE”
>(0040,A043)	SQ	1	Concept Name Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“121049”
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	“Language of Content Item and Descendants”
>(0040,A168)	SQ	1	Concept Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“en”
>>(0008,0102)	SH	1C	Code Scheme Designator	“RFC3066”
>>(0008,0104)	LO	1C	Code Meaning	“English”
>(0040,A730)	SQ	1C	Content Sequence	1
>>(0040,A010)	CS	1	Relationship Type	“HAS CONCEPT MOD”
>>(0040,A040)	CS	1	Value Type	“CODE”
>>(0040,A043)	SQ	1	Concept Name Code Sequence	1
>>>(0008,0100)	SH	1C	Code Value	“121046”
>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>(0008,0104)	LO	1C	Code Meaning	“Country of Language”
>>(0040,A168)	SQ	1	Concept Code Sequence	1
>>>(0008,0100)	SH	1C	Code Value	“US”
>>>(0008,0102)	SH	1C	Code Scheme Designator	“ISO3166 1”
>>>(0008,0104)	LO	1C	Code Meaning	“UNITED STATES”

Table 58 - Image Library Container

Group and Element	VR	Type	Description	Value
>(0040,A010)	CS	1	Relationship Type	“CONTAINS”
>(0040,A040)	CS	1	Value Type	“CONTAINER”
>(0040,A168)	SQ	1	Concept Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“111028”
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	“Image Library”
>(0040,A050)	CS	1	Continuity Of Content	“SEPARATE”
>(0040,A730)	SQ	1C	Content Sequence	“Mammography CAD Image Library Entry”. Repeat this sequence for each image in the study.
>>(0008,1199)	SQ	1	Referenced SOP Sequence	1
>>>(0008,1150)	UI	1	Referenced SOP Class UID	The SOP Class UID of the image being processed.
>>>(0008,1155)	UI	1	Referenced SOP Instance UID	The SOP Instance UID of the image being processed.
>>(0040,A010)	CS	1	Relationship Type	“CONTAINS”
>>(0040,A040)	CS	1	Value Type	“IMAGE”
>>(0040,A730)	SQ	1C	Content Sequence	The “Image Laterality” content sequence shall be present only if tag (0020,0062) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	“HAS ACQ CONTEXT”
>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111027”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Image Laterality”
>>>(0040,A168)	SQ	1C	Concept Code Sequence	From Context ID 6023 in the DICOM Standard
>>>>(0008,0100)	SH	1C	Code Value	“T-04030” (Left breast), “T-04020” (Right breast), “T-04080” (Both breasts)
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“SNM3”
>>>>(0008,0104)	LO	1C	Code Meaning	“Left breast”, “Right breast”, or “Both breasts”
>>(0040,A730)	SQ	1C	Content Sequence	The “Image View” content sequence shall be present only if tag (0054,0220) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	“HAS ACQ CONTEXT”
>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111031”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Image View”
>>>(0040,A168)	SQ	1C	Concept Code Sequence	From Context ID 4014 in the DICOM Standard
>>>>(0008,0100)	SH	1C	Code Value	“R-10224” (medio-lateral), “R-10266” (medio-lateral oblique), “R-10228” (latero-medial), “R-

				10230" (latero-medial oblique), "R-10242" (cranio-caudal), "R-10244" (cranio-caudal from below), "R-102D0" (superolateral to inferomdial oblique), "R-102CF" (exaggerated cranio-caudal), "Y-X1770" (cranio-caudal exaggerated laterally), or "Y-X1771" (cranio-caudal exaggerated medially)
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"SNM3"
>>>>(0008,0104)	LO	1C	Code Meaning	"medio-lateral", "medio-lateral oblique", latero-medial", "latero-medial oblique", "cranio-caudal", "cranio-caudal from below", "superolateral to inferomdial oblique", "exaggerated cranio-caudal", "cranio-caudal exaggerated laterally", or "cranio-caudal exaggerated medially"
>>(0040,A730)	SQ	1C	Content Sequence	The "Image View Modifier" content sequence shall be present only if tag (0054,0222) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	"HAS CONCEPT MOD"
>>>(0040,A040)	CS	1C	Value Type	"CODE"
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	"111032"
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"DCM"
>>>>(0008,0104)	LO	1C	Code Meaning	"Image View Modifier"
>>>(0040,A168)	SQ	1C	Concept Code Sequence	From Context ID 4015 in the DICOM Standard
>>>>(0008,0100)	SH	1C	Code Value	"R-102D2" (Cleavage), "R102D1" (Axillary Tail), "R-102D3" (Rolled lateral), "R-102D4" (Rolled Medial), "R-102D5" (Implant Displaced), "R-102D6" (Magnification), "R-102D7" (Spot Compression), "R-102C2" (Tangential)
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"SNM3"
>>>>(0008,0104)	LO	1C	Code Meaning	Cleavage, Axillary Tail, Rolled lateral, Rolled Medial, Implant Displaced, Magnification, Spot Compression, Tangential
>>(0040,A730)	SQ	1C	Content Sequence	The "Patient Orientation Row" content sequence shall be present only if tag (0054,0220) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	"HAS ACQ CONTEXT"
>>>(0040,A040)	CS	1C	Value Type	"TEXT"
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	"111044"
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"DCM"
>>>>(0008,0104)	LO	1C	Code Meaning	"Patient Orientation Row"

>>>(0040,A160)	UT	1C	Text Value	First value from tag (0020,0020) in image.
>>(0040,A730)	SQ	1C	Content Sequence	The "Patient Orientation Column" content sequence shall be present only if tag (0054,0220) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	"HAS ACQ CONTEXT"
>>>(0040,A040)	CS	1C	Value Type	"TEXT"
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	"111043"
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"DCM"
>>>>(0008,0104)	LO	1C	Code Meaning	"Patient Orientation Column"
>>>(0040,A160)	UT	1C	Text Value	Second value from tag (0020,0020) in image.
>>(0040,A730)	SQ	1C	Content Sequence	The "Study Date" content sequence shall be present only if tag (0008,0020) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	"HAS ACQ CONTEXT"
>>>(0040,A040)	CS	1C	Value Type	"DATE"
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	"111060"
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"DCM"
>>>>(0008,0104)	LO	1C	Code Meaning	"Study Date"
>>>(0040,A121)	DA	1C	Date	Value from tag (0008,0020) in image.
>>(0040,A730)	SQ	1C	Content Sequence	The "Study Time" sequence shall be present only if tag (0008,0030) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	"HAS ACQ CONTEXT"
>>>(0040,A040)	CS	1C	Value Type	"TIME"
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	"111061"
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"DCM"
>>>>(0008,0104)	LO	1C	Code Meaning	"Study Time"
>>>(0040,A122)	TM	1C	Time	Value from tag (0008,0030) in image.
>>(0040,A730)	SQ	1C	Content Sequence	The "Content Date" sequence shall be present only if tag (0008,0023) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	"HAS ACQ CONTEXT"
>>>(0040,A040)	CS	1C	Value Type	"DATE"
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	"111018"
>>>>(0008,0102)	SH	1C	Code Scheme Designator	"DCM"
>>>>(0008,0104)	LO	1C	Code Meaning	"Content Date"
>>>(0040,A121)	DA	1C	Date	Value from tag (0008,0023) in image.
>>(0040,A730)	SQ	1C	Content Sequence	The "Content Time" sequence shall be present only if tag (0008,0023) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	"HAS ACQ CONTEXT"

>>>(0040,A040)	CS	1C	Value Type	“TIME”
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111019”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Content Time”
>>>(0040,A122)	TM	1C	Time	Value from tag (0008,0033) in image.
>>(0040,A730)	SQ	1C	Content Sequence	The “Horizontal Imager Pixel Spacing” sequence shall be present only if tag (0018,1164) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	“HAS ACQ CONTEXT”
>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111026”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Horizontal Imager Pixel Spacing”
>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>(0040,08EA)	SQ	1C	Measured Units Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“um”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“UCUM”
>>>>>(0008,0103)	SH	1C	Coding Scheme Version	1.4
>>>>>(0008,0104)	LO	1C	Code Meaning	“micrometer”
>>>>(0040,A30A)	DS	1C	Numeric Value	First value from tag (0018,1164) in image.
>>(0040,A730)	SQ	1C	Content Sequence	The “Vertical Imager Pixel Spacing” sequence shall be present only if tag (0018,1164) is present in the image.
>>>(0040,A010)	CS	1C	Relationship Type	“HAS ACQ CONTEXT”
>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111066”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Vertical Imager Pixel Spacing”
>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>(0040,08EA)	SQ	1C	Measured Units Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“um”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“UCUM”
>>>>>(0008,0103)	SH	1C	Coding Scheme Version	1.4
>>>>>(0008,0104)	LO	1C	Code Meaning	“micrometer”
>>>>(0040,A30A)	DS	1C	Numeric Value	Second value from tag (0018,1164) in image.

**Table 59 - Mammography CAD Overall Impression / Recommendation**

Group and Element	VR	Type	Description	Value
>(0040,A010)	CS	1	Relationship Type	“CONTAINS”
>(0040,A040)	CS	1	Value Type	“CODE”
>(0040,A043)	SQ	1	Concept-name Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“111017”
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	“CAD Processing and Findings Summary”
>(0040,A168)	SQ	1	Concept Code Sequence	From Context ID 4015 in the DICOM Standard
>>(0008,0100)	SH	1C	Code Value	“111241” (All algorithms succeeded; without findings), “111242” (All algorithms succeeded; with findings), “111243” (Not all algorithms succeeded; without findings), “111244” (Not all algorithms succeeded; with findings), or “111245” (no algorithms succeeded; without findings).
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	All algorithms succeeded; without findings, All algorithms succeeded; with findings, Not all algorithms succeeded; without findings, Not all algorithms succeeded; with findings or no algorithms succeeded; without findings.
>(0040,A730)	SQ	1C	Content Sequence	Repeat for number of successful images processed in study. Can be configured to iterate based on number of detections instead of number of images.
>>(0040,A010)	CS	1C	Relationship Type	“INFERRED FROM”
>>(0040,A040)	CS	1C	Value Type	“CONTAINER”
>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>(0008,0100)	SH	1C	Code Value	“111034”
>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>(0008,0104)	LO	1C	Code Meaning	“Individual Impression/Recommendation”
>>(0040,A050)	CS	1C	Continuity of Content	“SEPARATE”
>>(0040,A730)	SQ	1C	Content Sequence	Repeat for Rendering Intent and number of single image findings.
>>>(0040,A010)	CS	1C	Relationship Type	“HAS CONCEPT MOD”
>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111056”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Rendering Intent”
>>>(0040,A168)	SQ	1C	Concept Code Sequence	1

>>>>(0008,0100)	SH	1C	Code Value	“111150” or “111151”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Presentation Required: Rendering device is expected to present” or “Presentation Optional: Rendering device may present”
>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111059”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Single Image Finding”
>>>(0040,A168)	SQ	1C	Concept Code Sequence	From Context ID 6014
>>>>(0008,0100)	SH	1C	Code Value	“F-01796” (Mammography breast density) or “F-01775” (Calcification Cluster) or “111100” (Breast geometry).
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“SRT”
>>>>(0008,0102)	SH	1C	Code Scheme Version	“1.1” only if (0008,0104) is “Mammography breast density” or “Calcification Cluster”
>>>>(0008,0104)	LO	1C	Code Meaning	“Mammography breast density”, “Calcification Cluster” or “Breast geometry”.
Use Table 60 if next container is “Breast geometry”  Use Table 61 if next container is “Mammography breast density”  Use Table 62 if next container is “Calcification Cluster”				

Table 60 – Breast Geometry

Group and Element	VR	Type	Description	Value
>>>(0040,A730)	SQ	1C	Content Sequence	Repeat for Rendering Intent, Algorithm Name, Algorithm Version, Breast Outline and Pectoral Outline
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS CONCEPT MOD”
>>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111056”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Rendering Intent”
>>>>(0040,A168)	SQ	1C	Concept Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111151”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Presentation Optional: Rendering device may present”
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111001”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Name”
>>>>(0040,A160)	UT	1C	Text Value	“iCAD SecondLook”
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111003”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Version”
>>>>(0040,A160)	UT	1C	Text Value	“X.Y-Z+”, where X.Y equals the current CAD version and Z equals the operating point.
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111007”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Breast Outline Including Pectoral Muscle Tissue”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates (Column, Row) of the breast outline.
>>>>(0070,0023)	CS	1C	Graphic Type	“POLYLINE”



>>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists the pectoral muscle is found in the image
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111045”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Pectoral Muscle Outline”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates (Column, Row) of the pectoral muscle.
>>>>(0070,0023)	CS	1C	Graphic Type	“POLYLINE”

Table 61 – Mammography breast density

Group and Element	VR	Type	Description	Value
>>>>(0040,A730)	SQ	1C	Content Sequence	Repeat for Rendering Intent, Algorithm Name, Algorithm Version, Certainty of Finding, Center, Outline, long axis, and area.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS CONCEPT MOD”
>>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111056”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Rendering Intent”
>>>>(0040,A168)	SQ	1C	Concept Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111150” or “111151”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Presentation Required: Rendering device is expected to present” or “Presentation Optional: Rendering device may present”. Presentation Optional values will only exist if dynamic operating point is enabled.
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111001”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Name”
>>>>(0040,A160)	UT	1C	Text Value	“iCAD SecondLook”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”

>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111003”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Version”
>>>>(0040,A160)	UT	1C	Text Value	“X.Y-Z+”, where X.Y equals the current CAD version and Z equals the operating point.
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists if the Certainty of Finding feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111012”
>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Certainty of Finding”
>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“%”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“UCUM”
>>>>>(0008,0103)	SH	1C	Code Scheme Version	“1.4”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Percent”
>>>>>(0040,A30A)	DS	1C	Numeric Value	Certainty of Finding percentage value of detection
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111010”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Center”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates (Column, Row) of the center point of the detection.
>>>>(0070,0023)	CS	1C	Graphic Type	“POINT”
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111041”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Outline”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates that define the outline of the detection. If

				Graphic Type (0070,0023) is “ELLIPSE” then there shall exist four pixel (column, row) pairs, the first two points specifying the endpoints of the major axis and the second two points specifying the endpoints of the minor axis. If Graphic Type (0070,0023) is “POLYLINE”, then a list of points (column, row pairs) will be given where straight lines are to be drawn from each point and the first and last vertices are equal to enclose the detection.
>>>>(0070,0023)	CS	1C	Graphic Type	“ELLIPSE” if showing standard marker for density. “POLYLINE” if showing detailed contour of density.
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the secondary graphic feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“SCoord”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“113663”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Outer limits of fuzzy margin”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>(0070,0022)	FL	1C	Graphic Data	A list of points (column, row pairs) will be given where straight lines are to be drawn from each point and the first and last vertices are equal to enclose the detection.
>>>>(0070,0023)	CS	1C	Graphic Type	“POLYLINE”
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if density diameter feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“G-A185”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“SNM3”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Long Axis”
>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>(0040,08EA)	SQ	1C	Measured Units Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“mm”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“1.4”

>>>>>(0008,0103)	SH	1C	Code Scheme Version	“UCUM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“millimeter”
>>>>>(0040,A30A)	DS	1C	Numeric Value	Maximum diameter of density in millimeters.
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“INFERRED FROM”
>>>>>(0040,A040)	CS	1C	Value Type	“SCoord”
>>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“121055”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Path”
>>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates that define the long axis of the density. It shall exist as two pixel (column, row) pairs, the first two points specifying one endpoints of the long axis and the second two points specifying the other endpoints of the long axis.
>>>>>(0070,0023)	CS	1C	Graphic Type	“POLYLINE”
>>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the density area feature is enabled.
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“G-A166”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“SNM3”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Area”
>>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>>(0040,08EA)	SQ	1C	Measured Units Code Sequence	1
>>>>>>>(0008,0100)	SH	1C	Code Value	“mm2”
>>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“UCUM”
>>>>>>>(0008,0104)	LO	1C	Code Meaning	“Square millimeter”
>>>>>>(0040,A30A)	DS	1C	Numeric Value	Area in square millimeters of density.

Table 62 – Calcification Cluster

Group and Element	VR	Type	Description	Value
>>>(0040,A730)	SQ	1C	Content Sequence	Repeat for Rendering Intent, Algorithm Name, Algorithm Version, Certainty of Finding, Center, Outline, Number of calcs, Area, Individual calc findings.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS CONCEPT MOD”
>>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111056”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Rendering Intent”
>>>>(0040,A168)	SQ	1C	Concept Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111150” or “111151”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Presentation Required: Rendering device is expected to present” or “Presentation Optional: Rendering device may present”. Presentation Optional values will only exist if dynamic operating point is enabled.
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111001”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Name”
>>>>(0040,A160)	UT	1C	Text Value	“iCAD SecondLook”
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111003”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Version”
>>>>(0040,A160)	UT	1C	Text Value	“X.Y-Z+”, where X.Y equals the current CAD version and Z equals the operating point.
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the secondary graphic feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111012”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Certainty of Finding”
>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1

>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“%”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“UCUM”
>>>>>(0008,0103)	SH	1C	Code Scheme Version	“1.4”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Percent”
>>>>>(0040,A30A)	DS	1C	Numeric Value	Certainty of Finding percentage value of detection
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111010”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Center”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates (Column, Row) of the center point of the detection.
>>>>(0070,0023)	CS	1C	Graphic Type	“POINT”
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111041”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Outline”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image based on node position in the image library.
>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates that define the outline of the calcification cluster. This will contain a list of five points (column, row pairs) will be given where straight lines are to be drawn from each point and the first and last vertices are equal to enclose the rectangle.
>>>>(0070,0023)	CS	1C	Graphic Type	“POLYLINE”
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the number of microcalcifications feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111038”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Number of calcifications”

>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>(0040,08EA)	SQ	1C	Measured Units Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“1”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“UCUM”
>>>>>(0008,0103)	SH	1C	Code Scheme Version	“1.4”
>>>>>(0008,0104)	LO	1C	Code Meaning	“no units”
>>>>>(0040,A30A)	DS	1C	Numeric Value	Number of individual calcifications present in the cluster.
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the calcification area feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“G-A166”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“SNM3”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Area”
>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>(0040,08EA)	SQ	1C	Measured Units Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“mm2”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“UCUM”
>>>>>(0008,0102)	SH	1C	Code Scheme Version	“1.4”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Square millimeter”
>>>>>(0040,A30A)	DS	1C	Numeric Value	Area of calcification cluster in square millimeters.
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the add microcalcifications feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111059”
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Single Image Finding”
>>>>(0040,A168)	SQ	1C	Concept Code Sequence	From Context ID 6014
>>>>>(0008,0100)	SH	1C	Code Value	“F-01776” (Individual Calcification)
>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“SRT”
>>>>>(0008,0103)	SH	1C	Code Scheme Version	“1.1”
>>>>>(0008,0104)	LO	1C	Code Meaning	Individual Calcification
>>>>(0040,A730)	SQ	1C	Content Sequence	Repeat sequence for number of individual calcifications within the cluster
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS CONCEPT MOD”
>>>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111056”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Rendering Intent”
>>>>>(0040,A168)	SQ	1C	Concept Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111150” or “111151”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Presentation Required:

				Rendering device is expected to present” or “Presentation Optional: Rendering device may present”
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111001”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Name”
>>>>>(0040,A160)	UT	1C	Text Value	“iCAD SecondLook”
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111003”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Version”
>>>>>(0040,A160)	UT	1C	Text Value	“X.Y-Z+”, where X.Y equals the current CAD version and Z equals the operating point.
>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111010”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Center”
>>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z ) in the image library.
>>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates (Column, Row) of the center point of the individual calcification.
>>>>>(0070,0023)	CS	1C	Graphic Type	“POINT”
>>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“SCOORD”
>>>>>(0040,A043)	SQ	1C	Concept-name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111041”
>>>>>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Outline”
>>>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>>>(0040,A010)	CS	1C	Relationship Type	“SELECTED FROM”
>>>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	Reference to image, based on node position (x, y, z) in the image library.
>>>>>(0070,0022)	FL	1C	Graphic Data	The coordinates that define the outline of the calcification cluster. This will contain a list of points (column, row pairs) will be given where



				straight lines are to be drawn from each point and the first and last vertices are equal to enclose the detection.
>>>>>(0070,0023)	CS	1C	Graphic Type	"POLYLINE"

Table 63 - Summary of Detections

Group and Element	VR	Type	Description	Value
>(0040,A010)	CS	1	Relationship Type	“CONTAINS”
>(0040,A040)	CS	1	Value Type	“CODE”
>(0040,A043)	SQ	1	Concept-name Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“111064”
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	“Summary of Detections”
>(0040,A168)	SQ	1	Concept Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“111222” if successful. “111223” if partially succeeded “111224” if failed.
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	“Succeeded”, “Partially Succeeded”, or “Failed”
>(0040,A730)	SQ	1C	Content Sequence	Can have a container sequence for successful detections and another container for failed detections
>>(0040,A010)	CS	1C	Relationship Type	“INFERRED FROM”
>>(0040,A040)	CS	1C	Value Type	“CONTAINER”
>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>(0008,0100)	SH	1C	Code Value	“111063” for successful detections. “111025” for failed detections
>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>(0008,0104)	LO	1C	Code Meaning	“Successful Detections” or “Failed Detections”
>>(0040,A050)	CS	1C	Continuity of Content	“SEPARATE”
>>(0040,A730)	SQ	1C	Content Sequence	Two sequences shall exist, one for densities and one for calcifications.
>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111022”
>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Detection Performed”
>>>(0040,A168)	SQ	1C	Concept Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“F-01796”
>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“SRT”
>>>>(0008,0102)	SH	1C	Coding Scheme Version	“1.1”
>>>>(0008,0104)	LO	1C	Code Meaning	“Mammography breast density”
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111001”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Name”
>>>>(0040,A160)	UT	1C	Text Value	“iCAD SecondLook”
>>>(0040,A730)	SQ	1C	Content Sequence	1

>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111003”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Version”
>>>>(0040,A160)	UT	1C	Text Value	“X.Y-Z+”, where X.Y equals the current CAD version and Z equals the operating point.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	X\Y\Z, which represents the reference node position of the image processed.
>>(0040,A730)	SQ	1C	Content Sequence	1
>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“111022”
>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>(0008,0104)	LO	1C	Code Meaning	“Detection Performed”
>>>(0040,A168)	SQ	1C	Concept Code Sequence	1
>>>>(0008,0100)	SH	1C	Code Value	“F-01775”
>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“SRT”
>>>>(0008,0103)	SH	1C	Coding Scheme Version	“1.1”
>>>>(0008,0104)	LO	1C	Code Meaning	“Calcification Cluster”
>>>(0040,A730)	SQ	1C	Content Sequence	1
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111001”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Name”
>>>>(0040,A160)	UT	1C	Text Value	“iCAD SecondLook”
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111003”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Algorithm Version”
>>>>(0040,A160)	UT	1C	Text Value	“X.Y-Z+”, where X.Y equals the current CAD version and Z equals the operating point.
>>>(0040,A730)	SQ	1C	Content Sequence	Repeat this sequence for the number of images that were processed successfully or that failed based on its container.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,DB73)	UL	1C	Referenced Content Item Identifier	X\Y\Z, which represents the reference node position of the image processed.
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the add maximum operating point feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”

>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111072”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Maximum CAD Operating Point”
>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“[arb’U]”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“UCUM”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Version	“1.4”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“arbitrary unit”
>>>>>(0040,A30A)	DS	1C	Numeric Value	“1.0”
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the add recommended operating point feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111092”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Recommended CAD Operating Point”
>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“{0:1}”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“UCUM”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Version	“1.4”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“range: 0:1”
>>>>>(0040,A30A)	DS	1C	Numeric Value	“1.0”
>>>(0040,A730)	SQ	1C	Content Sequence	Sequence exists only if the add operating point table feature is enabled.
>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>(0040,A040)	CS	1C	Value Type	“CONTAINER”
>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111093”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Operating Point Table”
>>>>(0040,A050)	CS	1C	Continuity of Content	“SEPARATE”
>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“122698”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“X-Concept”
>>>>>(0040,A168)	CS	1C	Concept Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111090”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Case Specificity”
>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>>>(0040,A040)	CS	1C	Value Type	“CODE”
>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“122699”

>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Y-Concept”
>>>>>(0040,A168)	CS	1C	Concept Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111088”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“Case Sensitivity”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>(0008,0100)	SH	1C	Code Value	“111071”
>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>(0008,0104)	LO	1C	Code Meaning	“CAD Operating Point”
>>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“{0:1}”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“UCUM”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Version	“1.4”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“range: 0:1”
>>>>>>(0040,A30A)	DS	1C	Numeric Value	“0.0”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111081”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“CAD Operating Point Description”
>>>>>(0040,A160)	UT	1C	Text Value	“Medium”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111090”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Case Specificity”
>>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111087”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“False Markers per Case”
>>>>>>(0040,A30A)	DS	1C	Numeric Value	“1.95”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111088”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“Case Sensitivity”
>>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“%”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“UCUM”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Version	“1.4”

>>>>>>>(0008,0104)	LO	1C	Code Meaning	“Percent”
>>>>>>>(0040,A30A)	DS	1C	Numeric Value	“90.0”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>(0040,A010)	CS	1C	Relationship Type	“CONTAINS”
>>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>(0008,0100)	SH	1C	Code Value	“111071”
>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>(0008,0104)	LO	1C	Code Meaning	“CAD Operating Point”
>>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>>(0008,0100)	SH	1C	Code Value	“{0:1}”
>>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“UCUM”
>>>>>>>(0008,0102)	SH	1C	Coding Scheme Version	“1.4”
>>>>>>>(0008,0104)	LO	1C	Code Meaning	“range: 0:1”
>>>>>>(0040,A30A)	DS	1C	Numeric Value	“1.0”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>>(0040,A040)	CS	1C	Value Type	“TEXT”
>>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>>(0008,0100)	SH	1C	Code Value	“111081”
>>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>>(0008,0104)	LO	1C	Code Meaning	“CAD Operating Point Description”
>>>>>>(0040,A160)	UT	1C	Text Value	“High”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>>(0008,0100)	SH	1C	Code Value	“111090”
>>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>>(0008,0104)	LO	1C	Code Meaning	“Case Specificity”
>>>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>>>(0008,0100)	SH	1C	Code Value	“111087”
>>>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>>>(0008,0104)	LO	1C	Code Meaning	“False Markers per Case”
>>>>>>>(0040,A30A)	DS	1C	Numeric Value	“2.84”
>>>>>(0040,A730)	SQ	1C	Content Sequence	
>>>>>>(0040,A010)	CS	1C	Relationship Type	“HAS PROPERTIES”
>>>>>>(0040,A040)	CS	1C	Value Type	“NUM”
>>>>>>(0040,A043)	SQ	1C	Concept Name Code Sequence	1
>>>>>>>(0008,0100)	SH	1C	Code Value	“111088”
>>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“DCM”
>>>>>>>(0008,0104)	LO	1C	Code Meaning	“Case Sensitivity”
>>>>>>(0040,A300)	SQ	1C	Measured Value Sequence	1
>>>>>>>(0040,08EA)	SQ	1C	Measurement Units Code Sequence	1
>>>>>>>>(0008,0100)	SH	1C	Code Value	“0%”
>>>>>>>>(0008,0102)	SH	1C	Coding Scheme Designator	“UCUM”
>>>>>>>>(0008,0102)	SH	1C	Coding Scheme Version	“1.4”
>>>>>>>>(0008,0104)	LO	1C	Code Meaning	“Percent”
>>>>>>>(0040,A30A)	DS	1C	Numeric Value	“91.8”

**Table 64 - Summary of Analyses**

Group and Element	VR	Type	Description	Value
>(0040,A010)	CS	1	Relationship Type	“CONTAINS”
>(0040,A040)	CS	1	Value Type	“CODE”
>(0040,A043)	SQ	1	Concept-name Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“111065”
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	“Summary of Analyses”
>(0040,A168)	SQ	1	Concept Code Sequence	1
>>(0008,0100)	SH	1C	Code Value	“111225”
>>(0008,0102)	SH	1C	Code Scheme Designator	“DCM”
>>(0008,0104)	LO	1C	Code Meaning	“Not Attempted”
>(0040,A010)	CS	1	Relationship Type	“CONTAINS”

**3.3.6.16.1.3 Storage of CAD Results – Radiotherapy Structure Set (RTSS)**

SecondLook® will process each image to determine the existence of any suspicious regions. A RT Structure Set Storage (RTSS) object is created per image. The RTSS object gives locations of the suspicious findings where ellipses are used to identify densities and rectangles are used to identify calcification clusters. The RTSS object can be sent to any remote system that is configured to receive this output. The use of the RT Structure Set Storage (RTSS) SOP Class is proprietary between iCAD, Inc. and General Electric (GE) Medical Systems and will not be defined in this document. The Modality (0008,0060) attribute value is "MG", to avoid confusion with valid RT Structure Set (RTSS) instances, and it is not recommended that the proprietary instances be archived.



**3.3.6.16.1.4 Storage of CAD Results – Grayscale Softcopy Presentation State (GSPS)**

SecondLook® will process each image to determine the existence of any suspicious regions. A single grayscale softcopy presentation state object is created per image. The presentation state gives locations of the suspicious findings where ellipses are used to identify densities and rectangles are used to identify calcification clusters. The presentation state object can be sent to any remote system that is configured to receive this output.

**Table 65 – Grayscale Softcopy Presentation State (GSPS) IOD Modules**

IE	Module	DICOM Reference	Document Reference	Usage
Patient	Patient	PS 3.3 – 2004 C.7.1.1	Table 66	M
Study	General Study	PS 3.3 – 2004 C.7.2.1	Table 67	M
Series	General Series	PS 3.3 – 2004 C.7.3.1	Table 68	M
	Presentation Series	PS 3.3 – 2004 C.11.9	Table 69	M
Equipment	General Equipment	PS 3.3 – 2004 C.7.5.1	Table 70	U
Presentation State	Presentation State	PS 3.3 – 2004 C.11.10	Table 71	M
	Displayed Area	PS 3.3 – 2004 C.10.4	Table 72	M
	Graphic Annotation	PS 3.3 – 2004 C.10.5	Table 73	C
	Graphic Layer	PS 3.3 – 2004 C.10.7	Table 74	C
	Softcopy Presentation LUT	PS 3.3 – 2004 C.11.6	Table 75	M
	SOP Common	PS 3.3 – 2004 C.12.1	Table 76	M

**Table 66 - Patient Module Attributes – ref. PS 3.3 - 2004 C.7.1.1**

Group and Element	VR	Type	Description	Value
(0010,0010)	PN	2	Patient's Name	Patient's full name obtained from the image header.
(0010,0020)	LO	2	Patient ID	Primary hospital identification number or code for the patient obtained from the image header.
(0010,0030)	DA	2	Patient's Birth Date	Birth date of the patient obtained from the image header.
(0010,0040)	CS	2	Patient's Sex	Sex of the named patient obtained from the image header. Enumerated Values: M = male F = female O = other

**Table 67 – General Study Attributes – ref. PS 3.3 - 2004 C.7.2.1**

Group and Element	VR	Type	Description	Value
(0020,000D)	UI	1	Study Instance UID	Unique identifier for the study.
(0008,0020)	DA	2	Study Date	Date the CAD output was created.
(0008,0030)	TM	2	Study Time	Time the CAD output was created.
(0008,0090)	PN	2	Referring Physician’s Name	Name of the patient’s referring physician.
(0020,0010)	SH	2	Study ID	User or equipment generated study ID obtained from image header.
(0008,0050)	SH	2	Accession Number	A number that identifies the order for the study obtained from the image header.

**Table 68 – General Series Attributes – ref. PS 3.3 - 2004 C.7.3.1**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality	“PR”
(0020,000E)	UI	1	Series Instance UID	Unique identifier for the series.
(0020,0011)	IS	2	Series Number	A number that identifies the series: “1”
(0020,0060)	CS	2C	Laterality	Laterality of body part examined: ”R” = right ”L” = left
(0008,1070)	PN	3	Operator’s Name	Operator name obtained from image header.

**Table 69 – Presentation Series Attributes – ref. PS 3.3 - 2004 C.11.9**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality	“PR”

**Table 70 – General Equipment Attributes – ref. PS 3.3 - 2004 C.7.5.1**

Group and Element	VR	Type	Description	Value
(0008,0060)	CS	1	Modality	“PR”

**Table 71 – Presentation State Attributes – ref. PS 3.3 - 2004 C.11.10**

Group and Element	VR	Type	Description	Value
(0020,0013)	1	IS	Instance Number	A number that identifies this presentation (SOP Instance) obtained from the image header.
(0070,0080)	1	VS	Presentation Label	A label that is used to identify this presentation. Combination of laterality and view.
(0070,0081)	2	LO	Presentation Description	A description of this presentation: "SecondLook CAD results"
(0070,0082)	1	DA	Presentation Creation Date	Date on which this presentation was created.
(0070,0083)	1	TM	Presentation Creation Time	Time at which this presentation was created.
(0070,0084)	2	PN	Presentation Creator's Name	Name of operator saving the presentation state "SecondLook Digital CAD"
(0008,1115)	1	SQ	Referenced Series Sequence	Sequence of Repeating Items where each Item includes the Attributes of one or more Series.
>(0020,000E)	1C	UI	Series Instance UID	Unique identifier of a Series that is part of this Study.
>(0008,1140)	1C	SQ	Referenced Image Sequence	Sequence of Repeating Items where each Item provides reference to a selected set of Image SOP Class/SOP Instance pairs that are part of this Study and the Series defined by Series Instance UID (0020,000E).
>>(0008,1150)	1C	UI	Referenced SOP Class UID	Uniquely identifies the referenced SOP Class.
>>(0008,1155)	1C	UI	Referenced SOP Instance UID	Uniquely identifies the referenced SOP Instance.

Table 72 – Displayed Area Attributes – ref. PS 3.3 - 2004 C.10.4

Group and Element	VR	Type	Description	Value
(0070,005A)	SQ	1	Displayed Area Selection Sequence	A sequence of Items each of which describes the displayed area selection for a group of images or frames.
>(0008,1140)	SQ	1C	Referenced Image Sequence	Sequence of Repeating Items where each Item provides reference to a selected set of Image SOP Class/SOP Instance pairs that are defined in the Presentation State Module.
>>(0008,1150)	UI	1C	Referenced SOP Class UID	Uniquely identifies the referenced SOP Class.
>>(0008,1155)	UI	1C	Referenced SOP Instance UID	Uniquely identifies the referenced SOP Instance.
>(0070,0052)	SL	1	Displayed Area Top Left Hand Corner	The top left pixel in the referenced image to be displayed, given as column\row. Column is the horizontal offset (X) and row is the vertical offset (Y) relative to the origin of the pixel data before spatial transformation, which is “1\1”.
>(0070,0053)	SL	1	Displayed Area Bottom Right Hand Corner	The bottom right pixel in the referenced image to be displayed, given as column\row. Column is the horizontal offset (X) and row is the vertical offset (Y) relative to the origin of the pixel data before spatial transformation, which is “1\1”.
>(0070,0100)	CS	1	Presentation Size Mode	Manner of selection of display size: ”SCALE TO FIT”
>(0070,0101)	DS	1C	Presentation Pixel Spacing	Physical distance between the center of each pixel in the referenced image, specified by a numeric pair – adjacent row spacing adjacent column spacing in mm obtained from image header.

Table 73 – Graphic Annotation Attributes – ref. PS 3.3 - 2004 C.10.5

Group and Element	VR	Type	Description	Value
(0070,0001)	SQ	1	Graphic Annotation Sequence	A sequence of Items of which represents a group of annotations composed of graphics and text.
>(0008,1140)	SQ	1C	Referenced Image Sequence	Sequence of Repeating Items where each Item provides reference to a selected set of Image SOP Class/SOP Instance pairs that are defined in the Presentation State Module.
>>(0008,1150)	UI	1C	Referenced SOP Class UID	Uniquely identifies the referenced SOP Class.
>>(0008,1155)	UI	1C	Referenced SOP Instance UID	Uniquely identifies the referenced SOP Instance.
>(0070,0002)	CS	1	Graphic Layer	The layer defined in the Graphic Layer Module in which the graphics or text is to be rendered. "SECONDL00K CAD"
>(0070,0008)	SQ	1C	Text Object Sequence	Sequence that describes a text annotation.
>>(0070,0003)	CS	1C	Bounding Box Annotation Units	Units of measure for the axes of the text bounding box. "PIXEL"
>>(0070,0006)	ST	1	Unformatted Text Value	A string of text containing the software version and the number of calcification clusters and densities found.
>>(0070,0010)	FL	1C	Bounding Box Top Left Hand Corner	Location of the Top Left Hand Corner (TLHC) of the bounding box in which Unformatted Text Value (0070,0006) is to be displayed, in Bounding Box Annotation Units (0070,0003), given as column\row. Column is the horizontal offset and row is the vertical offset. "10.0\10.0"
>>(0070,0011)	FL	1C	Bounding Box Bottom Right Hand Corner	Location of the Bottom Right Hand Corner (BRHC) of the bounding box in which Unformatted Text Value (0070,0006) is to be displayed, in Bounding Box Annotation Units (0070,0003), given as column\row. Column is the horizontal offset and row is the vertical offset. "100.0\100.0"
>>(0070,0012)	CS	1C	Bounding Box Text Horizontal Justification	Location of the text relative to the vertical edges of the bounding box: "LEFT"
>(0070,0009)	SQ	1C	Graphic Object Sequence	Sequence that describes a graphic

				annotation.
>>(0070,0005)	CS	1	Graphic Annotation Units	Units of measure for the axes of the graphic annotation: "PIXEL"
>>(0070,0020)	US	1	Graphic Dimensions	"2"
>>(0070,0021)	US	1	Number of Graphic Points	Number of data points in this graphic. "4" for ELLIPSE and ""5 for POLYLINE.
>>(0070,0022)	FL	1	Graphic Data	Coordinates that specify this graphic annotation.
>>(0070,0023)	CS	1	Graphic Type	The shape of graphic that is to be drawn. "ELLIPSE" = Density "POLYLINE" = Calcification Cluster.
>>(0070,0024)	CS	1C	Graphic Filled	Whether or not the closed graphics element is displayed as filled or as an outline. "N" = No

Table 74 – Graphic Layer Attributes – ref. PS 3.3 - 2004 C.10.7

Group and Element	VR	Type	Description	Value
(0070,0060)	SQ	1	Graphic Layer Sequence	A sequence of Items each of which represents a single layer in which graphics are rendered.
>(0070,0002)	CS	1	Graphic Layer	A string which identifies the layer. "SECONDLOOK CAD"
>(0070,0062)	IS	1	Graphic Layer Order	An integer indicating the order in which it is recommended that the layer be rendered, if the display is capable of distinguishing. Lower numbered layers are to be rendered first. "1"
>(0070,0066)	US	3	Graphic Layer Recommended Display Grayscale Value	A default single gray unsigned value in which it is recommended that the layer be rendered on a monochrome display. The units are specified in P-Values from minimum of 0000H (black) up to a maximum of FFFFH (white). "32767"

**Table 75 – Softcopy Presentation LUT Attributes – ref. PS 3.3 - 2004 C.11.6**

Group and Element	VR	Type	Description	Value
(2050,0020)	CS	1C	Presentation LUT Shape	Specifies predefined Presentation LUT transformation. "IDENTITY" – no further transformation necessary, input values are P-Values.

**Table 76 – SOP Common Attributes – ref. PS 3.3 - 2004 C.12.1**

Group and Element	VR	Type	Description	Value
(0008,0016)	UI	1	SOP Class UID	Uniquely identifies the SOP Class: "1.2.840.10008.5.1.4.1.1.11.1"
(0008,0018)	UI	1	SOP Instance UID	Uniquely identifies the SOP instance.

**3.3.6.16.1.5 Storage of CAD Results – Digital Mammography X-Ray – For Presentation with CAD overlay**

SecondLook® can be configured to populate the CAD detections into the overlay module of the Digital Mammography X-Ray – For Presentation image. In order for this to occur, SecondLook® must receive both the Digital Mammography X-Ray – For Processing and the Digital Mammography X-Ray – For Presentation images for the patient case. SecondLook® will perform it’s algorithms on the Digital Mammography X-Ray – For Processing images and then populate the overlay module of the Digital Mammography X-Ray – For Presentation image, where ellipses are used to identify densities and rectangles are used to identify calcification clusters. The Digital Mammography X-Ray – For Presentation image with the CAD overlay can be sent to any number of remote devices. Note that the overlay module can also be applied to the Digital Mammography X-Ray – For Processing image. This object contains information identical to how it was received, except a new SOP Instance UID is created for the updated image and the overlay plane module had been applied as described in Table 77.

**Table 77 – Digital Mammography X-Ray – For Presentation – Overlay Plane Module – ref. PS 3.3 - 2004 C.12.1**

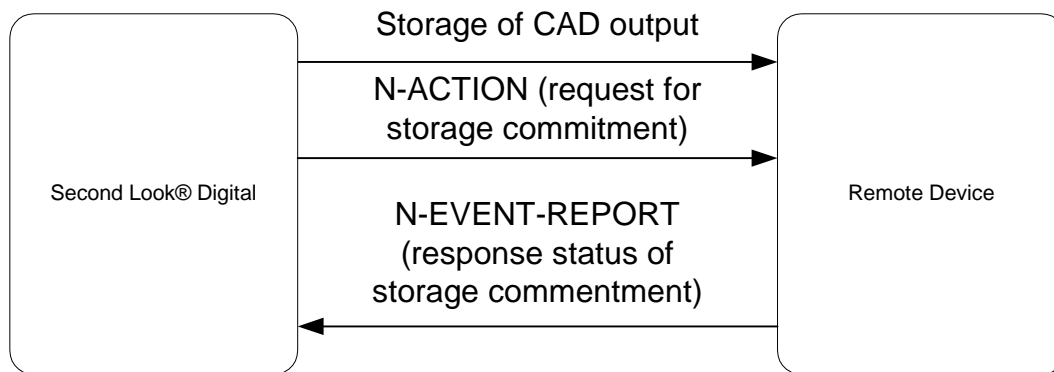
Group and Element	VR	Type	Description	Value
(6000,0010)	US	1	Overlay Rows	Number of rows in the overlay
(6000,0011)	US	1	Overlay Columns	Number of columns in the overlay
(6000,0022)	CS	1	Overlay Type	"G" = Graphics
(6000,0050)	SS	1	Overlay Origin	Location of first overlay point with respect to pixels in the image, given as row\column.

				The upper left pixel of the image has the coordinate "1\1".
(6000,0100)	US	1	Overlay Bits Allocated	The number of bits allocated in the overlay: "1"
(6000,0102)	US	1	Overlay Bit Position	Bit in which overlay is stored: "0"
(6000,3000)	OW	1C	Overlay Data	Overlay pixel data.
(6000,0022)	LO	3	Overlay Description	User defined comments about the overlay: "iCAD, Inc."
(6000,0045)	LO	3	Overlay Subtype	Defined term which identifies the intended purpose of the Overlay Type: "AUTOMATED"
(6000,1500)	LO	3	Overlay Label	A user defined text string which may be used to label or name this overlay: "SecondLook"

**3.3.6.17 Storage Commitment of CAD Output**

**3.3.6.18 Associated Real World Activity – Storage Commitment**

SecondLook® Digital can be configured to issue a storage commitment request (N-ACTION) to any of the configured remote devices through the Field Service Engineer’s Graphical User Interface. SecondLook® Digital will respond to any storage commitment response (N-EVENT-REPORT) as long as the SecondLook® Digital’s service is started. An overview of the storage commitment sequence is shown in Figure 3.4.



**Figure 3.4 - Storage Commitment Overview**

**3.3.6.19 Presentation Context Table – Storage Commitment**

SecondLook® Digital supports the transfer syntaxes listed in Table 78. For a storage commitment request (N-ACTION), SecondLook® Digital will propose the Presentation Contexts listed in Table 79.



**Table 78 – Storage Commitment Transfer Syntaxes**

Transfer Syntaxes	UID
DICOM Implicit VR Little Endian	1.2.840.10008.1.2

**Table 79 – Storage Commitment SOP Class**

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
SOP Class	SOP Class UID			
Storage Commitment	1.2.840.10008.1.20.1	Declared in Table 78	SCU/SCP	None

**3.3.6.20 SOP Specific Conformance – Storage Commitment**

The Storage Commitment request N-ACTION information is defined in Table 80.

**Table 80 – Storage Commitment Request – Action Information**

Action Type Name	Action Type ID	Tag	Attribute	Req. Type SCU	Description
Request Storage Commitment	1	(0008,1195)	Transaction UID	1	Uniquely identifies this Storage Commitment transaction.
		(0088,0130)	Storage Media File-Set ID	3	Not used
		(0088,0140)	Storage Media File-Set UID	3	Not used
		(0008,1199)	Referenced SOP Sequence	1	A sequence of repeating Items where each Item references a single SOP Instance for which storage commitment is requested / or has been provided.
		>(0008,1150)	Referenced SOP Class UID	1	Uniquely identifies the referenced SOP Class.
		>(0008,1155)	Referenced SOP Instance UID	1	Uniquely identifies the referenced SOP Instance.
		>(0088,0130)	Storage Media File-Set ID	3	Not used
		>(0088,0140)	Storage Media File-Set UID	3	Not Used

The handling of the N-ACTION response by SecondLook® is listed in Table 81.

**Table 81 – Storage Commitment Response (N-ACTION-RSP) Codes**

Service Status	Further Meaning	Protocol Codes	Related Fields	Description
Success	Success	0x0000	None	Operation performed properly
Failure	Processing failure	0x0110	None	SecondLook® records an N-ACTION processing failure to the event log.
Failure	No such SOP instance	0x0112	None	SecondLook® records to the event log that there were invalid UIDs in the Storage Commitment message.

The Storage Commitment N-EVENT-REPORT information is defined in Table 82.

**Table 82 – Storage Commitment Result – Event Information**

Action Type Name	Action Type ID	Tag	Attribute	Req. Type SCP	Description
Storage Commitment Request Successful	1	(0008,1195)	Transaction UID	1	Uniquely identifies this Storage Commitment transaction.
		(0008,0054)	Retrieve AE Title	3	Not used
		(0088,0130)	Storage Media File-Set ID	3	Not used
		(0088,0140)	Storage Media File-Set UID	3	Not used
		(0008,1199)	Referenced SOP Sequence	1	A sequence of repeating Items where each Item references a single SOP Instance for which storage commitment is requested / or has been provided.
		>(0008,1150)	Referenced SOP Class UID	1	Uniquely identifies the referenced SOP Class.
		>(0008,1155)	Referenced SOP Instance UID	1	Uniquely identifies the referenced SOP Instance.
		>(0008,0054)	Retrieve AE Title	3	Not used
		>(0088,0130)	Storage Media File-Set ID	3	Not used
		>(0088,0140)	Storage Media File-Set UID	3	Not Used

Storage Commitment Request Complete – Failure Exists	2	(0008,1195)	Transaction UID	1	Uniquely identifies this Storage Commitment transaction.
		(0008,0054)	Retrieve AE Title	3	Not used
		(0088,0130)	Storage Media File-Set ID	3	Not used
		(0088,0140)	Storage Media File-Set UID	3	Not used
		(0008,1199)	Referenced SOP Sequence	1	A sequence of repeating Items where each Item references a single SOP Instance for which storage commitment is requested / or has been provided.
		>(0008,1150)	Referenced SOP Class UID	1	Uniquely identifies the referenced SOP Class.
		>(0008,1155)	Referenced SOP Instance UID	1	Uniquely identifies the referenced SOP Instance.
		>(0008,0054)	Retrieve AE Title	3	Not used
		>(0088,0130)	Storage Media File-Set ID	3	Not used
		>(0088,0140)	Storage Media File-Set UID	3	Not Used
		(0008,1198)	Failed SOP Sequence	1	A sequence of repeating Items where each Item references a single SOP Instance for which storage commitment could not be provided.
		>(0008,1150)	Referenced SOP Class UID	1	Uniquely identifies the referenced SOP Class.
		>(0008,1155)	Referenced SOP Instance UID	1	Uniquely identifies the referenced SOP Instance.
		>(0008,1197)	Failure Reason	1	The reason that storage commitment could not be provided for this SOP Instance.

The response codes for the DICOM Storage Commitment message (N-EVENT-REPORT-RSP) are displayed in Table 83. If there was an error in creating the Storage Commitment response, no response shall be sent.

**Table 83 – Storage Commitment Response (N-EVENT-REPORT-RSP) Codes**

Service Status	Further Meaning	Protocol Codes	Related Fields	Description
Success	Success	0x0000	None	Operation performed properly
Failure	Processing failure	0x0110	None	Error in parsing N-EVENT-REPORT-RQ from remote device.
Failure	Instance UID does not match	0x0119	None	The instance UID sent for storage commit does not match the instance UID that was returned.

## 4 Communication Profiles

SecondLook® Digital provides DICOM V3.0 TCP/IP Network Communication support as defined in Part 8 of the DICOM Standard.

### 4.1 OSI Stack

Not Supported

### 4.2 TCP/IP Stack

SecondLook® Digital inherits its TCP/IP stack from the Microsoft® Windows® operating system of the computer upon which it executes. SecondLook® (SCP) listens by default to port number 104, unless this is configured differently.

#### 4.2.1 Physical Media Support

The physical media supported by the TCP/IP Stack are 10/100/1000BaseT.

## 5 Extensions/Specializations/Privatizations

SecondLook® Digital does not use any private group or element codes.

## 6 Configuration

SecondLook® Digital configures the application entity, host name, and listen port for itself and remote devices through the web accessible field service engineering graphical user interface. The SecondLook® Digital service must be stopped to change these parameters, and then restarted to have the new values take effect.

## 7 Support for Extended Character Sets

SecondLook® Digital supports the default character set (ISO-IR 6 Basic G0 Set).

## 8 End of Document