

DIGISCAN M ASCR1 VB00

SPS

DICOM Conformance Statement Supplement to *syngo* VC10B

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Hans Sjöström
SPS-UB**Author**

Name/Dept.: Hans Sjöström / SPS-UB

Date:

Signature:

Approved by

Name/Dept.: Peter Kövamees / SPS-U

Date:

Signature:

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1 Introduction

1.1 Purpose

This Conformance Statement is written according to MedSW Patex, Image Manager, Study Transfer Requirement Specification, SIEMENS AG B Med, R 5.0[3], *Syngo* DICOM Conformance Statement, SIEMENS AG B Med, R 11.0[2] and Digital Imaging and Communications in Medicine (DICOM) 3.0, NEMA PS 3, 1999[1].

The applications described in this conformance statement are the Siemens DIGISCAN M products using software ASCR1 VB00.

1.2 Intended Audience

People who are interested in DICOM based inter connectivity/operability, e.g. hospital IT-Manager, Physicians, medical technicians.

1.3 Scope

This Conformance Statement refers to Siemens DIGISCAN M products using software ASCR1 VB00.

The following table relates software names to Siemens products.

Table 1: Siemens DIGISCAN M DICOM Products

Software Name	Siemens Product
ASCR1 VB00	DIGISCAN M

Within the MED software architecture ESS is responsible for the whole patient and image management and transfer via Versant Database API.

1.4 Definitions, Acronyms and Abbreviations

1.4.1 Definitions

DICOM	Digital Imaging and Communications in Medicine
FFDM CR	Full Field Digital Mammography system using Computer Radiography
ESS	Examination Session Server

1.4.2 Acronyms and Abbreviations

ACR	American College of Radiology
AE	Application Entity
ASCII	American Standard Code for Information Interchange
DB	Database
DBS	Database System
CSA	Common Software Architecture
IOD	DICOM Information Object Definition
IP	Imaging Plate
ISO	International Standard Organization
LUT	Lookup Table
M	MANDATORY MODULES
NEMA	National Electrical Manufacturers Association
O	Optional Key Attribute
OODBMS	Object Oriented Database Management System
PATEX	<i>Syngo</i> Patient and Examination manager
PM	Patient Management
R	Required Key Attribute
RIS	Radiology Information System
SCU	DICOM Service Class User (DICOM client)
SCP	DICOM Service Class Provider (DICOM server)
SOP	DICOM Service-Object Pair
SPS	Solution Provider in Sweden
TAG	unique identifier for a DICOM element
U	USER OPTION MODULES
UID	Unique Identifier
Versant	VERSANT OODBMS Release 5.2.2
VR	Value Representation

1.5 References

- [1] Digital Imaging and Communications in Medicine (DICOM) 3.0, NEMA PS 3, 1999
- [2] *Syngo* DICOM Conformance Statement, SIEMENS AG B Med, R 11.0
- [3] MedSW Patex, Image Manager, Study Transfer Requirement Specification, SIEMENS AG B Med, R 5.0
- [4] FFDM CR System requirement Specification, SPS X187-202-001
- [5] MedCom NLS Guidelines, version 3.0
- [6] Med SW NLS Guideline, Med SW-DI02, R2.0

1.6 Connectivity and Interoperability

The implementation of the Siemens DICOM interface has been carefully tested to assure correspondence with *Syngo* DICOM Conformance Statement. But the *Syngo* Conformance Statement and the DICOM standard does not guarantee interoperability of Siemens modalities and modalities of other vendors. The user must compare the relevant Conformance Statements and if a successful interconnection should be possible, the user is responsible to specify an appropriate test suite and to validate the interoperability, which is required. A network environment may need additional functions out of the scope of DICOM.

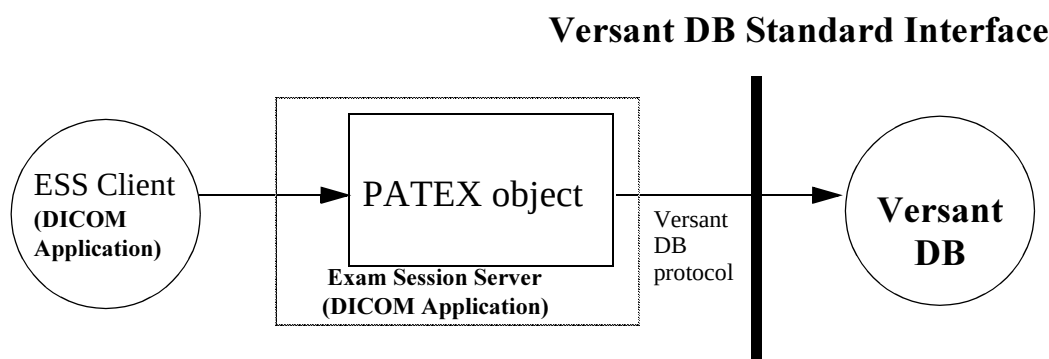
2 Implementation Model

The Examination Session Server based on PATEX (*Syngo* Patient manager). The Patex manager has to provide a common interface to the local database for all other components. Patex also defines the data hierarchy model (DICOM data model) used for the database and the applications. It does not provide any user interface; please refer to [3](pg. 14).

2.1 Application Data Flow Diagram

The ESS is responsible for the whole patient management on the local station (patient, which is registered for examination).

Figure 1: Application Data Flow Diagram



Syngo provides Real-World Activities [2]. ESS only produces information for *Syngo*.

2.2 Functional Definitions of AE's

The ESS Patient management uses *Syngo* PATEX to “get” and “set” “DICOM” information from/in Versant DB. *Syngo* provides this. [2]

2.3 Sequencing of real World Activities

Not applicable. *Syngo* have it. [2]

3 AE Specifications

Siemens DICOM products provide Standard Digital Mammography X-Ray Image Information following DICOM V3.0. And *Syngo* has all AE Specifications [2].

DATA ELEMENT TYPE: Used to specify whether an Attribute of an Information Object Definition or an Attribute of a SOP Class Definition is mandatory (type 1), mandatory under certain conditions (type 1C), mandatory but can be empty (type 2), mandatory under certain conditions (type 2C), or optional (type 3). An implementation need not employ all the optional components of the DICOM Standard (type 3). PS 3.2, page 8 and PS 3.5, page 5 [1]. ESS implements attribute type 2, but value set if information available.

3.1 Digital Mammography X-Ray Image AE Specification

The Digital Mammography X-Ray Image Information Object Definition specifies an image, which has been created by a digital mammography projection radiography imaging device. It meets all of the requirements of the DX IOD in A.102 [1] in addition to those specified in this section.

The Digital Mammography Image IOD is used in two SOP Classes as defined in PS 3.4 [1] Storage Service Class, a SOP Class for storage of images intended for presentation, and a SOP Class for storage of images intended for further processing before presentation. These are distinguished by their SOP Class UID and by the Enumerated Value of the mandatory attribute in the DX Series Module, Presentation Intent Type (0008,0068).

Table 2: Standard SOP Classes as an Storage SCU and an SCP

SOP Class Name	SOP Class UID
Digital Mammography X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1

3.1.1 Digital Mammography X-Ray Image IOD

The E-R Model in Section A.1.2 [1] depicts those components of the DICOM Information Model, which directly reference the DX Image IOD.

Table 3: IOD Digital Mammography X-Ray Image

IE	Module	DICOM Ref.	Usage
Patient	Patient	C.7.1.1	M
Study	General Study	C.7.2.1	M
	Patient Study	C.7.2.2	U
Series	General Series	C.7.3.1	M
	DX Series	C.8.11.1	M
	Mammography Series	C.8.11.6	M
Equipment	General Equipment	C.7.5.1	M
Image	General Image	C.7.6.1	M
	Image Pixel	C.7.6.3	M
	DX Anatomy Image	C.8.11.2	M
	DX Image	C.8.11.3	M
	DX Detector	C.8.11.4	M
	X-Ray Collimator	C.8.7.3	U
	DX Positioning	C.8.11.5	U
	X-Ray Acquisition Dose	C.8.7.8	U
	X-Ray Generation	C.8.7.9	U
	X-Ray Filtration	C.8.7.10	U
	X-Ray Grid	C.8.7.11	U
	Mammography Image	C.8.11.7	M
	VOI LUT	C.11.2	C – Required if Presentation Intent Type (0008,0068) is FOR PRESENTATION.
	Acquisition Context	C.7.6.14	M
	SOP Common	C.12.1	M

3.1.1.1 Patient IE

3.1.1.1.1 Patient Module

The following module specifies the Attributes of the Patient that describe and identify the Patient who is the subject of a diagnostic Study, see C.7.1.1. [1].

Table 4: Patient Module Attribute

Name	Tag	Type	Attribute Description	Value
Patient's Name	(0010,0010)	2	Patient's full name.	<Name>
Patient ID	(0010,0020)	2	Primary hospital identification number or code for the patient.	<ID>
Patient's Birth Date	(0010,0030)	2	Birth date of the patient.	<Date>
Patient's Sex	(0010,0040)	2	Sex of the named patient.	F=Female M=Male O=Other
Referenced Patient Sequence	(0008,1120)	3	A sequence which provides reference to a Patient SOP Class/Instance pair.	Empty
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class.	Empty
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance.	Empty
Other Patient Ids	(0010,1000)	3	Other identification numbers or codes used to identify the patient.	<Second ID>
Other Patient Names	(0010,1001)	3	Other names used to identify patient.	<Name>
Ethnic Group	(0010,2160)	3	Ethnic group or race of patient.	<Text>
Patient Comments	(0010,4000)	3	User defined additional information about the patient.	<Text>

3.1.1.2 Study IE**3.1.1.2.1 General Study Module**

The following table specifies the Attributes, which describe and identify the Study performed upon the Patient.

Table 5: General Study Module Attribute

Name	Tag	Type	Attribute Description	Value
Study Instance UID	(0020,000D)	1	Unique identifier for the Study.	<UID>
Study Date	(0008,0020)	2	Date the Study started.	<Date>
Study Time	(0008,0030)	2	Time the Study started.	<Time>
Referring Physician's Name	(0008,0090)	2	Patient's referring physician.	<Name>
Study ID	(0020,0010)	2	Study identifier.	<Text>
Accession Number	(0008,0050)	2	A RIS generated number, which identifies the order for the Study.	<Number>
Study Description	(0008,1030)	3	Institution-generated description or classification of the Study (component) performed.	<Text>
Referenced Study Sequence	(0008,1110)	3	A sequence, which provides reference to a Study SOP Class/Instance pair.	Empty
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class.	Empty
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance.	Empty

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Table 5: General Study Module Attribute

Name	Tag	Type	Attribute Description	Value
Procedure Code Sequence	(0008,1032)	3	A Sequence that conveys the type of procedure performed.	Empty

3.1.1.2.2 Patient Study Module

The following table specifies the Attributes that provide information about the patient at the time the study was performed.

Table 6: Patient Study Module Attribute

Name	Tag	Type	Attribute Description	Value
Admitting Diagnoses Description	(0008,1080)	3	Description of the admitting diagnosis (diagnoses).	<Text>
Patient's Age	(0010,1010)	3	Age of the patient.	<Age>
Patient's Size	(0010,1020)	3	Length or size of the Patient, in meters.	<Height>
Patient's Weight	(0010,1030)	3	Weight of the patient, in kilograms.	<Weight>

3.1.1.3 Series IE

3.1.1.3.1 General Series Module

The following table specifies the Attributes, which identify and describe general information about the Series within a Study.

Table 7: General Series Module Attribute

Name	Tag	Type	Attribute Description	Value
Modality	(0008,0060)	1	MG	Fix
Series Instance UID	(0020,000E)	1	Unique identifier of the Series.	<UID>.

Table 7: General Series Module Attribute

Name	Tag	Type	Attribute Description	Value
Series Number	(0020,0011)	2	A number that identifies this Series.	<Number>
Laterality	(0020,0060)	2C	Laterality of (paired) body part examined. Enumerated Values: R = right L = left	<R> or <L>
Series Date	(0008,0021)	3	Date the Series started.	<Date>
Series Time	(0008,0031)	3	Time the Series started.	<Time>
Performing Physician's Name	(0008,1050)	3	Name of the physicians administering the Series.	<Name>
Operators' Name	(0008,1070)	3	Technologist(s) supporting the Series.	<Name>
Referenced Study Component Sequence	(0008,1111)	3	Uniquely identifies the Study Component SOP Instance or Modality Performed Procedure Step SOP Instance to which the Series is related.	<Text> or <Zero>
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Study Component Sequence (0008,1111) is sent.	<UID>
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Study Component Sequence (0008,1111) is sent.	<UID>
Body Part Examined	(0018,0015)	3	BREAST	BREAST

3.1.1.3.2 DX Series Module

The Digital X-Ray IODs use the General Series module described in section C.7.3.1 PS 3.3 [1], specialized by the DX Series Module, to describe the DICOM Series Entity described in A.1.2.3 PS 3.3 [1], and to define what constitutes a Series for the context of projection Digital X-Ray.

Table 8: DX Series Module Attribute

Name	Tag	Type	Attribute Description	Value
Modality	(0008,0060)	1	MG	MG
Presentation Intent Type	(0008,0068)	1	Identifies the intent of the images that are contained within this Series.	Fix for - Original image - FOR PROCESSING - Derived image - FOR PRESENTATION

3.1.1.3.3 Mammography Series Module

The following table specifies the Attributes, which identify and describe general information about a Digital Mammography Series.

Table 9: Mammography Series Module Attribute

Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	MG

3.1.1.4 Equipment IE

3.1.1.4.1 General Equipment Module

Equipment Module Attributes identify and describe the piece of equipment which produced a Series of Images.

Table 10: General Equipment Module Attribute

Name	Tag	Type	Attribute Description	Value
Manufacturer	(0008,0070)	2	Manufacturer of the equipment that produced the digital images.	SIEMENS
Institution Name	(0008,0080)	3	Institution where the equipment is located that produced the digital images.	<Name>

Table 10: General Equipment Module Attribute

Name	Tag	Type	Attribute Description	Value
Institution Address	(0008,0081)	3	Mailing address of the institution where the equipment is located that produced the digital images.	<Address>
Station Name	(0008,1010)	3	Name identifying the machine that produced the digital images.	MAMMOMAT
Institutional Department Name	(0008,1040)	3	Department in the institution where the equipment is located that produced the digital images.	<Text>
Manufacturer's Model Name	(0008,1090)	3	Manufacturer's model number of the equipment that produced the digital images.	DIGISCAN M
Device Serial Number	(0018,1000)	3	Manufacturer's serial number of the equipment that produced the digital images. (cassette barcode & IP plate registration no.)	<Text>
Software Version(s)	(0018,1020)	3	Manufacturer's designation of software version of the equipment that produced the digital images.	ASCR1 VB00
Date of Last Calibration	(0018,1200)	3	Date when the image acquisition device calibration was last changed in any way. Multiple entries may be used for additional calibrations at other times.	<Date>
Time of Last Calibration	(0018,1201)	3	Time when the image acquisition device calibration was last changed in any way. Multiple entries may be used.	<Time>

3.1.1.5 Image IE

3.1.1.5.1 General Image Module

The following table specifies the Attributes, which identify and describe an image within a particular series.

Table 11: General Image Module attribute

Name	Tag	Type	Attribute Description	Value
Instance Number	(0020,0013)	2	A number that identifies this image.	<Number>
Patient Orientation	(0020,0020)	2C	Patient direction of the rows and columns of the image. Letter=A, P, R, L, H and F	<Letter, Letter>
Image Date	(0008,0023)	2C	The date the image pixel data creation started.	<Date>
Image Time	(0008,0033)	2C	The time the image pixel data creation started.	<Time>
Image Type	(0008,0008)	3	Image identification characteristics.	- For Original image – ORIGINAL PRIMARY - For Derived image – DERIVED PRIMARY
Acquisition Number	(0020,0012)	3	A number identifying the single continuous gathering of data over a period of time, which resulted in this image.	<Number>.
Acquisition Date	(0008,0022)	3	The date the acquisition of data that resulted in this image started.	<Date>
Acquisition Time	(0008,0032)	3	The time the acquisition of data that resulted in this image started.	<Time>
Derivation Description	(0008,2111)	3	A text description of how this image was derived.	<Text> if any

Table 11: General Image Module attribute

Name	Tag	Type	Attribute Description	Value
Source Image Sequence	(0008,2112)	3	A Sequence, which identifies the set of Image SOP Class/ Instance pairs of the Images, which were used to derive this Image.	Empty
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Source Image Sequence (0008,2112) is sent.	Empty
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Source Image Sequence (0008,2112) is sent.	Empty
Quality Control Image	(0028,0300)	3	Indicates whether or not this image is a quality control or phantom image.	YES if calibration image NO otherwise.
Lossy Image Compression	(0028,2110)	3	Specifies whether an Image has undergone lossy compression. (00 = Image has NOT been subjected to lossy compression)	Fix - 00

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3.1.1.5.2 Image Pixel Module

The following table specified the Attributes that describe the pixel data of the image.

Table 12: Image Pixel Module Attribute

Name	Tag	Type	Attribute Description	Value
Samples per Pixel	(0028,0002)	1	Number of samples (planes) in this image.	Fix – 1
Photometric Interpretation	(0028,0004)	1	Specifies the intended interpretation of the pixel data.	Fix – MONOCHROME1
Rows	(0028,0010)	1	Number of rows in the image.	<Number>

Table 12: *Image Pixel Module Attribute*

Name	Tag	Type	Attribute Description	Value
Columns	(0028,0011)	1	Number of columns in the image.	<Number>
Bits Allocated	(0028,0100)	1	Number of bits allocated for each pixel sample.	Fix – 16
Bits Stored	(0028,0101)	1	Number of bits stored for each pixel sample.	Fix – 10
High Bit	(0028,0102)	1	Most significant bit for pixel sample data.	Fix – 9
Pixel Representation	(0028,0103)	1	Data representation of the pixel samples.	Fix – 0000H
Pixel Data	(7FE0,0010)	1	A data stream of the pixel samples which comprise the image.	<Image pixel data>

3.1.1.5.3 DX Anatomy Imaged Module

DX Anatomy Imaged Module contains IOD Attributes that describe the anatomy contained in a DX IOD.

Table 13: *DX Anatomy Imaged Module Attribute*

Name	Tag	Type	Attribute Description	Value
Image Laterality	(0020,0062)	1	Laterality of (possibly paired) body part (as described in Anatomic Region Sequence (0008,2218)) examined. Enumerated Values: R = right L = left	R or L
Anatomic Region Sequence	(0008,2218)	2	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.	<Sequence>

Table 13: DX Anatomy Imaged Module Attribute

Name	Tag	Type	Attribute Description	Value
>'Code Sequence Macro'				Fix - - Code Value (0008,0100) – T-04000 - Code Meaning (0008, 0104) - Breast - Body Part Examined (0018,0015) – BREAST
>Anatomic Region Modifier Sequence	(0008,2220)	3	Sequence that modifies the anatomic region of interest in this image (for example prone, supine, decubitus right).	Empty
Primary Anatomic Structure Sequence	(0008,2228)	3	Sequence that identifies the primary anatomic structures of interest in this image.	Empty
>Primary Anatomic Structure Modifier Sequence	(0008,2230)	3	Sequence that modifies the primary anatomic structure of interest in this image.	Empty

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3.1.1.5.4 DX Image Module

IOD Attributes describe a DX Image by specializing Attributes of the General Image and Image Pixel Modules, and adding additional Attributes.

Table 14: DX Image Module Attribute

Name	Tag	Type	Attribute Description	Value
Image Type	(0008,0008)	1	Image identification characteristics.	- For Original image – ORIGINAL PRIMARY - For Derived image – DERIVED PRIMARY

Table 14: DX Image Module Attribute

Name	Tag	Type	Attribute Description	Value
Samples per Pixel	(0028,0002)	1	Number of samples in this image.	Fix - 1
Pixel Intensity Relationship	(0028,1040)	1	The relationship between the Pixel sample values and the X-Ray beam intensity.	Fix – LOG
Pixel Intensity Relationship Sign	(0028,1041)	1	The sign of the relationship between the Pixel sample values stored in Pixel Data (7FE0,0010) and the X-Ray beam intensity.	Fix – 1
Rescale Intercept	(0028,1052)	1	The value b in the relationship between stored value (SV) in Pixel Data (7FE0,0010) and the output units specified in Rescale Type (0028,1054).	Fix - 0
Rescale Slope	(0028,1053)	1	m in the equation specified by Rescale Intercept (0028,1052).	Fix - 1
Rescale Type	(0028,1054)	1	Specifies the output units of Rescale Slope (0028,1053) and Rescale Intercept (0028,1052).	Fix - US
Presentation LUT Shape	(2050,0020)	1	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.	Fix - INVERSE
Lossy Image Compression	(0028,2110)	1	FCRBE will not use Lossy Image Compression. Hence, set 00.	Fix - 00

Table 14: DX Image Module Attribute

Name	Tag	Type	Attribute Description	Value
Derivation Description	(0008,2111)	3	A text description of how this image was derived.	- For Original image – not applicable - For Derived image – IPBE generates
Acquisition Device Processing Code	(0018,1401)	3	Code representing the device-specific processing associated with the image (for example Organ Filtering code).	ESS Sets the Fuji Organ Program Number.
Patient Orientation	(0020,0020)	1	Patient direction of the rows and columns of the image. Letter=A, P, R, L, H and F	<Letter, Letter>
Calibration Image	(0050,0004)	3	Indicates whether a reference object (phantom) of known size is present in the image and was used for calibration.	ESS sets YES if calibration image, NO otherwise.
Window Center	(0028,1050)	1C	Defines a Window Center for display.	Fix-543
Window Width	(0028,1051)	1C	Window Width for display.	Fix-974

3.1.1.5.5 DX Detector Module

IOD Attributes that describe a DX detector.

Table 15: Module Attribute Table Attribute

Name	Tag	Type	Attribute Description	Value
Detector Type	(0018,7004)	2	The type of detector used to acquire this image.	Fix - STORAGE
Detector Configuration	(0018,7005)	3	The physical configuration of the detector.	Fix - AREA
Detector ID	(0018,700A)	3	The ID or serial number of the detector used to acquire this image.	<Text>

Table 15: Module Attribute Table Attribute

Name	Tag	Type	Attribute Description	Value
Exposures on Detector Since Manufactured	(0018,7011)	3	Total number of X-Ray exposures that have been made on the detector used to acquire this image as identified in Detector ID (0018,700A) since it was manufactured.	<Number>
Field of View Shape	(0018,1147)	3	Shape of the Field of View, that is the image pixels stored in Pixel Data (7FE0,0010).	Fix - RECTANGLE
Field of View Dimension(s)	(0018,1149)	3	Dimensions in mm of the Field of View, that is the image pixels stored in Pixel Data (7FE0,0010). (row dimension followed by column)	<Width,Length>
Imager Pixel Spacing	(0018,1164)	1	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.	Fix-0.05 0.05
Detector Element Physical Size	(0018,7020)	3	Physical dimensions of each detector element that comprises the detector matrix, in mm. Expressed as row dimension followed by column.	Fix-0.05 0.05
Detector Active Shape	(0018,7024)	3	Shape of the active area.	Fix - RECTANGLE

Table 15: Module Attribute Table Attribute

Name	Tag	Type	Attribute Description	Value
Detector Active Dimension(s)	(0018,7026)	3	Dimensions in mm of the active area. Row dimension followed by column.	<Width, Length>

3.1.1.5.6 DX Positioning Module

Contains IOD Attributes that describe the positioning used in acquiring Digital X-Ray Images.

Table 16: DX Positioning Module Attribute

Name	Tag	Type	Attribute Description	Value
Projection Eponymous Name Code Sequence	(0018,5104)	3	A Sequence that describes the radiographic method of patient, tube and detector positioning to achieve a well-described projection or view.	<Sequence>
View Position	(0018,5101)	3	Radiographic view of the image relative to the imaging subject's orientation.	<Text>.
View Code Sequence	(0054,0220)	3	Sequence that describes the projection of the anatomic region of interest on the image receptor.	See Table 17
>View Angulation Modifier Code Sequence	(0054,0222)	3	View modifier.	See Table 18
Patient Orientation Code Sequence	(0054,0410)	3	Sequence that describes the orientation of the patient with respect to gravity.	See Table 19
>Patient Orientation Modifier Code Sequence	(0054,0412)	3	Patient Orientation Modifier.	See Table 20

Table 16: DX Positioning Module Attribute

Name	Tag	Type	Attribute Description	Value
Distance Source to Patient	(0018,1111)	3	Distance in mm from source to the table, support or bucky side that is closest to the Imaging Subject, as measured along the central ray of the X-Ray beam.	Not used
Distance Source to Detector	(0018,1110)	3	Distance in mm from source to detector center.	Fix- 665
Positioner Type	(0018,1508)	2	The positioner type.	Fix - MAMMOGRAPHIC
Table Type	(0018,113A)	3	A table type.	Fix – FIXED

Table 17: 'Code Sequence Macro' for View Code Sequence (0054,0220)

Code Value if (0008,0100)=T-04000	Code meaning if (0008,0104)=Breast
R-10224	Medial lateral
R-10226	Lateral oblique
R-10242	Cranio-caudal

Table 18: 'Code Sequence Macro' for View Code Sequence (0054,0222)

Code Value if (0008,0100)=T-04000	Code meaning if (0008,0104)=Breast
R-10242	Caudal

Table 19: 'Code Sequence Macro' for View Code Sequence (0054,0410)

Code Value (0008,0100)	Code meaning (0008,0104)
F-10440	Erect
F-10450	Recumbent

Table 20: 'Code Sequence Macro' for View Code Sequence(0054,0412)

Code Value (0008,0100)	Code meaning (0008,0104)
F-10320	Standing
F-10340	Supine

3.1.1.5.7 X-Ray Acquisition Dose Module

This Module describes the attributes related to dose delivery from an X-Ray source during the acquisition of an X-Ray image.

Table 21: X-Ray Acquisition Dose Module Attribute

Name	Tag	Type	Attribute Description	Value
Distance Source to Detector	(0018,1110)	3	Distance in mm from source to detector center.	Fix- 665.
Organ Exposed	(0040,0318)	3	Organ to which Organ Dose (0040,0316) applies.	Fix - BREAST
Rectification Type	(0018,1156)	3	Type of rectification used in the X-Ray generator.	Fix - CONST POTENTIAL

3.1.1.5.8 X-Ray Generation Module

This Module describes the attributes related to generation of X-Rays during the acquisition of an X-Ray image.

Table 22: X-Ray Generation Module Attribute

Name	Tag	Type	Attribute Description	Value
Rectification Type	(0018,1156)	3	Type of rectification used in the X-Ray generator.	Fix - CONST POTENTIAL

3.1.1.5.9 Mammography Image Module

The following table contains IOD Attributes that describe a Digital Mammography X-Ray Image including its acquisition and positioning.

Table 23: Mammography Image Module Attribute

Name	Tag	Type	Attribute Description	Value
Positioner Type	(0018,1508)	1	The positioner type.	Fix - MAMMOGRAPHIC
Image Laterality	(0020,0062)	1	Laterality of the region examined. Enumerated Values: R = right L = left	R or L
Organ Exposed	(0040,0318)	1	Organ to which Organ Dose (0040,0316) applies.	Fix - BREAST
Anatomic Region Sequence	(0008,2218)	1	Sequence that identifies the anatomic region of interest in this image.	- Code value (0008,0100) – T-04000 - Code meaning (0008,0104) – Breast
View Code Sequence	(0054,0220)	1	Sequence that describes the projection of the anatomic region of interest on the image receptor.	See Table 24
>View Angulation Modifier Code Sequence	(0054,0222)	2	View modifier.	See Table 25

Table 24: View Code Sequence (0054,0220)

Code value if (0008,0100)=T-04000	Code meaning if (0008,0104)=Breast	ACR BI-RADS Equivalent
R-10224	medio-lateral	ML
R-10226	medio-lateral oblique	MLO
R-10242	cranio-caudal	CC

Table 25: ViewModifier Code Sequence (0054,0222)

Code value if (0008,0100)=T- 04000	Code meaning if (0008,0104)=Breast	Applies only when view is	ACR BI-RADS Equivalent
R-102D2	Cleavage	CC	CV
R-102D1	Auxiliary Tail	MLO	AT

3.1.1.5.10 Acquisition Context Module

The Table C.7.6.14-1 specifies Attributes for description of the clinically-relevant Anatomic, Chemical, Functional, Physical, and Spatial conditions present during data acquisition.

This Module shall not contain descriptions of conditions that replace those that are already described in specific Modules or Attributes that are also contained within the IOD that contains this Module.

Table 26: Acquisition Context Module Attribute

Name	Tag	Type	Attribute Description	Value
Acquisition Context Sequence	(0040,0555)	2	A sequence of repeating items that describes the conditions present during the acquisition of an Image.	Fix –Zero

3.1.1.5.11 SOP Common

The following table defines the Attributes, which are required for proper functioning and identification of the associated SOP Instances. They do not specify any semantics about the Real-World Object represented by the IOD.

Table 27: SOP Common Module attributes

Name	Tag	Type	Attribute Description	Value
SOP Class UID	(0008,0016)	1	Uniquely identifies the SOP Class.	<UID>
SOP Instance UID	(0008,0018)	1	Uniquely identifies the SOP Instance.	<UID>
Specific Character Set	(0008,0005)	1C	Character Sets that expands or replaces the Basic Graphic Set.	<Text>

The Product Root UID for the FFDM CR project is 1.3.12.2.1107.5.12.4 this is to be used with the Study, Series and SOP Instance UIDs

4 Augmented and Private Profiles

Not applicable

5 Extensions, Specializations and Privatizations of SOP Classes

Not applicable

6 Configuration

Not applicable

7 Support of Extended Character Sets

not applicable. According [5] and [6].

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