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0.0 Revisions

Click Here to view Revisions

1.0 Purpose

Define the DICOM Conformance statement associated with Varex Nexus systems.

2.0 Scope

This document describes the DICOM Conformance statement in accordance with the document DICOM PS 3.2 Conformance.

3.0 References and Forms

DICOM 2015A
DICOM PS 3.1 Introduction and Overview
DICOM PS 3.2 Conformance
DICOM PS 3.3 Information Object Definitions
DICOM PS 3.4 Service Class Specifications
DICOM PS 3.5 Data Structures and Encoding
DICOM PS 3.6 Data Dictionary
DICOM PS 3.7 Message Exchange
DICOM PS 3.8 Network Communication Support for Message Exchange
DICOM PS 3.10 Media Storage and File Format for Media Interchange
DICOM PS 3.11 Media Storage Application Profiles
DICOM PS 3.12 Media Formats and Physical Media for Media Interchange
DICOM PS 3.14 Grayscale Standard Display Function

4.0 Equipment and Materials

N/A

5.0 Responsibilities

N/A

6.0 Definitions

AE	Application Entity
FSC	File Sector Creator
FSR	File Sector Reader
FSU	File Sector Updater
IOD	Information Object Definition
SCU	Service Class User
SCP	Service Class Provider
SOP	Service Object Pair
UID	Unique Identifier

7.0 Instructions

The rest of this document is written in the format specified for DICOM Conformance statements in the DICOM PS 3.2 Conformance standard document.

8.0 Introduction

This conformance statement details the Varex Nexus DR system's compliance to DICOM 3.0. It covers all service class roles that are supported by this product:
Storage Service Class (SCU) roles
Storage Commitment Service Class (SCU) roles
Verification Service Class (SCU) roles
Modality Worklist Management Service Class (SCU) roles

9.0 Implementation Model

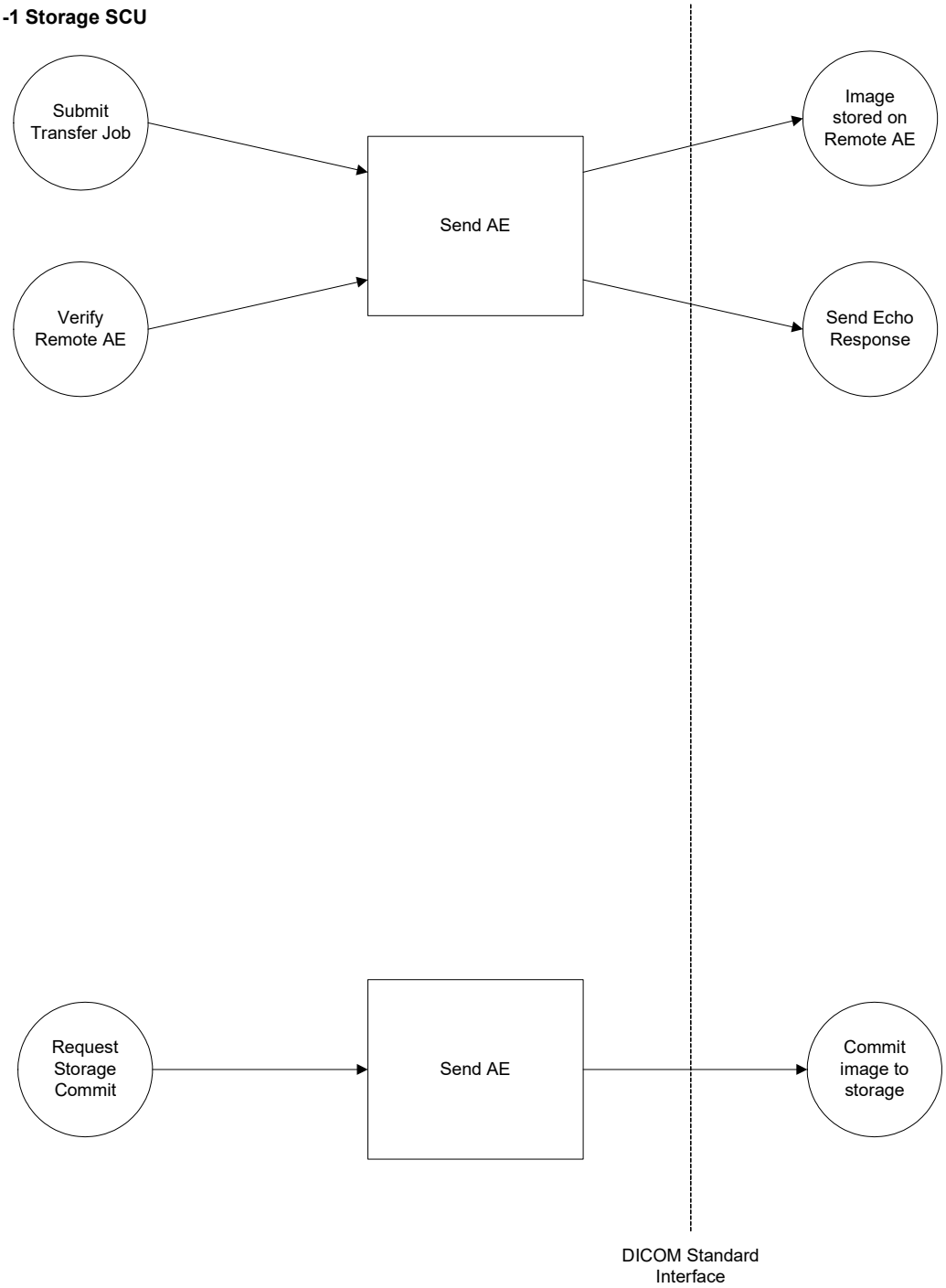
DICOM capabilities of the NEXUS system include:

- The NEXUS system can send images to a remote AE by initiating the DICOM C-STORE request as a SCU.
- The NEXUS system can act as a Storage Commitment SCU to request commitment for images transferred to a remote AE.
- The NEXUS system supports the DICOM Verification operation as a SCU.
- The NEXUS system can query DICOM Modality Worklist SCP systems for patient/study information using the Modality Worklist Management Service Class.
- The NEXUS system can report back Performed Procedure information to a Modality Worklist SCP using the Modality Performed Procedure Step service.
- The NEXUS system can send images to a DICOM Print Server AE by utilizing the services of the Basic Grayscale Print Management Meta SOP Class as a SCU.
- The NEXUS system can store images for interchange using the General Purpose CD-R Image Interchange Profile Class.

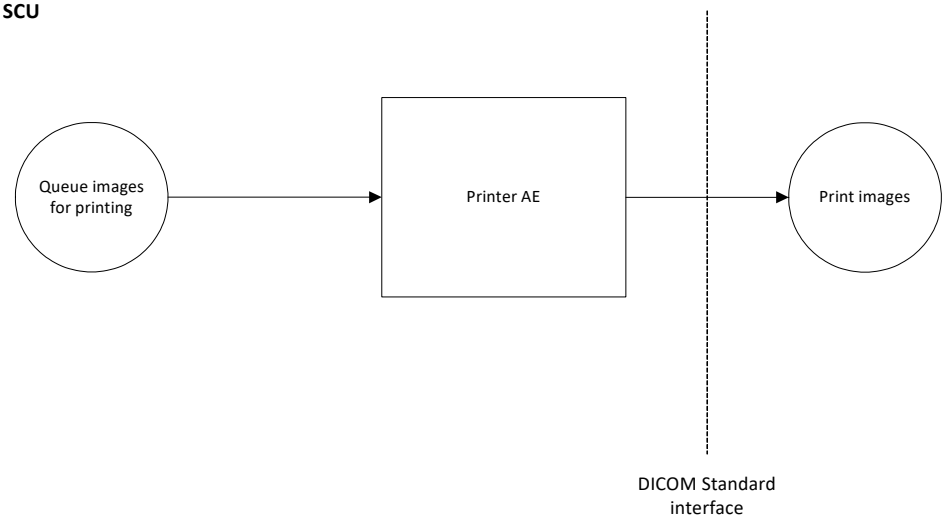
9.1 Application Data Flow Diagrams

See figures 9.1-1, 9.1-2, 9.1-3, and 9.1-4.

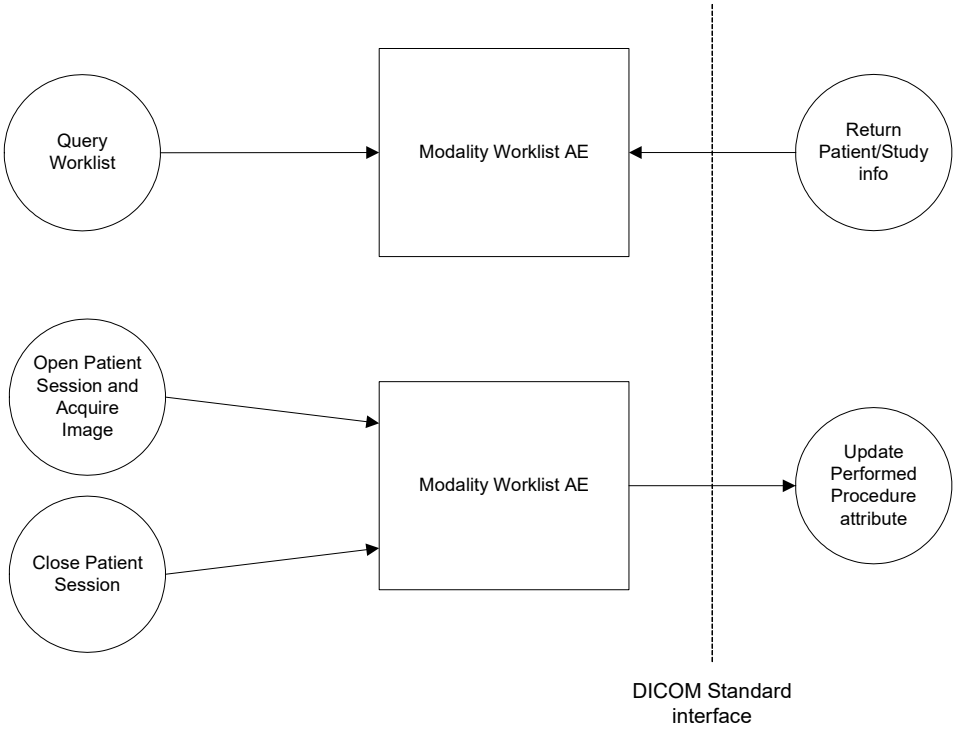
Figure 9.1-1 Storage SCU



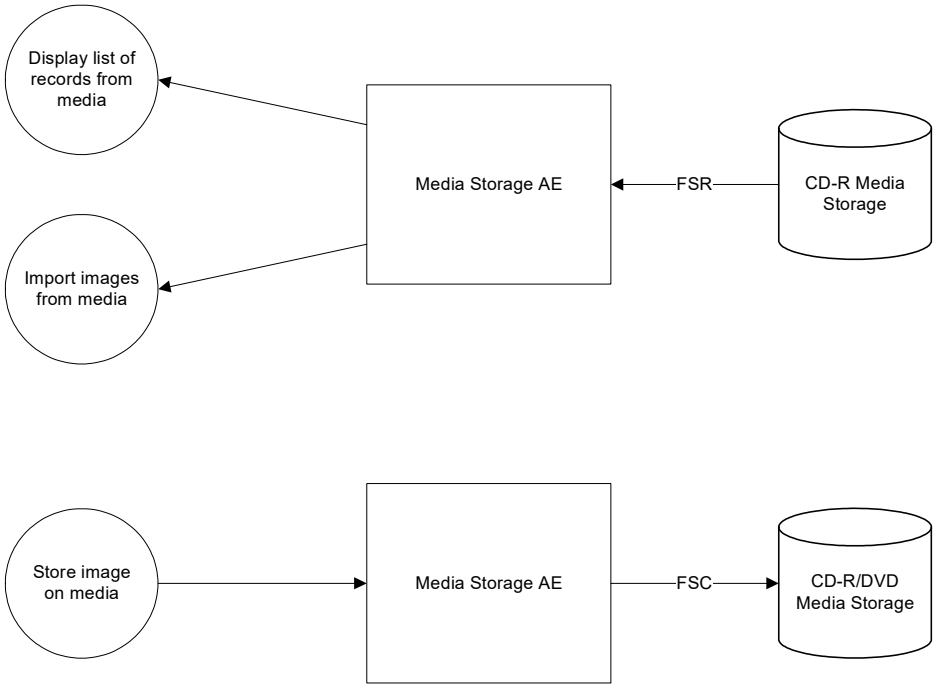
9.1-2 Print SCU



9.1-3 Worklist and MPPS SCU



9.1-4 Media Storage AE



9.2 Functional definition of AEs

Send AE:

The Send AE initiates an association with a remote AE and acts as a SCU of the Storage Service Class to store images on a remote AE that acts as a SCP of the Storage Service Class.

When the image transfer is completed, the send function waits for the DIMSE-C-STORE Response from the receiving AE to indicate the status of the transfer (success or fail).

The Send AE can also request Storage Commitment for images that it transfers to a remote AE if the remote AE is configured for the Storage Commit Service as a SCP.

When the Send AE system initiates the DICOM Echo Request, it first proposes an Association with the Verification Class Presentation Context. When the DICOM Association Accept message is received, the system sends the DIMSE-C-ECHO Request

message to initiate the Verification function on the receiving AE. The status of the Verification response (success or fail) is displayed.

Modality Worklist AE:
The Modality Worklist AE initiates an Association with a user selected remote Worklist AE and acts as a SCU of the Modality Worklist Management Service Class. The Modality Worklist AE sends a C-FIND request based on parameters set by the user. The user can configure the Modality Worklist AE to query for any/all modalities supported by the local system. The user can configure the Worklist to query for exams scheduled for any AE configured in the system as a Worklist SCU. One request is sent for each modality/AE title pair configured by the user.

If the remote Worklist AE supports the Modality Performed Procedure Step service then the Modality Worklist AE can be used to notify the remote AE of Performed Procedure Step updates (In Progress, Discontinued, Completed).

Print AE:
The Print AE initiates an Association with a user selected remote Print AE and acts as a SCU of the Basic Grayscale Print Management Service Class. When all of the images for a particular Film Session have been transferred, the Association is closed.

Media Storage AE:

The Media Storage AE can perform the following functions:

1. It can initialize a piece of media, writing a new DICOM File-set onto the media.
2. It can display a directory listing of the File-set on a piece of media.
3. It can copy SOP instances from the media onto local storage.

9.3 Sequencing of Real World Activities

Print Operations

The following describes the sequence of events that occurs when performing a print operation:

1. The user queues up a print job from the GUI.
2. The Print AE sends a DICOM Association Request to the print server AE.
3. If the DICOM Association request fails then the print job is aborted.
4. If the DICOM Association request is successful then the Print AE requests the printer status with the Printer N-GET message.
   a. NORMAL – Continue with print operation.
   b. FAILURE – The print job is aborted.
5. The Print AE sends the Basic Film Session N-CREATE message to the print server and waits for the N-CREATE Response.
   a. SUCCESS – Continue print operation.
   b. FAILURE – The print job is aborted.
6. The Print AE sends the Basic Film Box N-CREATE message to the print server and waits for the N-CREATE Response.
   a. SUCCESS – Continue print operation.

b. FAILURE (C616) – The print job is aborted.

7. The Print AE sends an Image Box N-SET message to the print server and waits for the N-SET response.
   a. SUCCESS – Continue print operation.
   b. FAILURE (C603, C605, C613) – The print job is aborted.
8. When the Film Box is full or the last image in the print job has been added to the Film Box then the Print AE sends a Film Box N-ACTION message to the print server and waits for the N-ACTION response.
   a. SUCCESS – Continue with print operation.
   b. FAILURE (C602, C603, C613) – The print job is aborted.
9. When the print job is completed (or aborted) the Print AE sends a DICOM Association Release Request to the print server.

Storage Operations

The following describes the sequence of events that occurs when performing a storage operation with a network storage server AE:

1. The user queues up a send job from the GUI.
2. The Send AE sends a DICOM Association Request to the storage server AE.
3. If the DICOM Association request fails then the send job is aborted.
4. If the DICOM Association request is successful then the Send AE sends a C-STORE Request message to the storage server and waits for the C-STORE response.
   a. SUCCESS – Continue with send operation.
   b. WARNING – Continue with send operation.
   c. FAILURE (0110, A700, A900, C000, C002) – The send job is aborted. The Send AE sends a DICOM Association Abort Request message to the storage server AE.
5. When the send job is completed the Send AE sends a DICOM Association Release Request to the storage server AE.

Worklist Operations

The following describes the sequence of events that occurs when performing a worklist operation with a worklist server AE:

1. The user initiates a Worklist query from the GUI.
2. The Worklist AE sends a DICOM Association Request to the worklist server AE.
3. If the DICOM Association request fails then the status display on the GUI indicates that the Association failed.
4. If the DICOM Association request is successful then the Worklist AE sends a C-FIND Request message to the worklist server and waits for a C-FIND response.
   a. SUCCESS – C-FIND is completed.
   b. PENDING (FF00, FF01) – Matches are continuing. If the number of matches exceeds the maximum defined by the user then the Worklist AE sends a C-CANCEL Request message to the worklist server.
   c. CANCEL (FE00) – C-FIND is cancelled.
   d. FAILED (A900, Cxxx) – The Worklist AE sends a DICOM Association Abort Request to the worklist server.
5. For the SUCCESS and CANCEL cases, the Worklist AE sends a DICOM Association Release Request to the worklist server. The status display on the GUI

indicates that the worklist query is completed and the list of matching records is displayed.

Modality Performed Procedure Step Operations

The following describes the sequence of events that occurs when performing a MPPS operation with a MPPS server AE:

1. The user opens an empty Patient/Study and acquires the first image.
2. The MPPS AE sends a DICOM Association Request to the MPPS server AE.
3. If the DICOM Association request fails then the MPPS operation is aborted.
4. If the DICOM Association request is successful then the MPPS AE sends a Modality Performed Procedure Step N-CREATE Request message to the MPPS server AE and waits for an N-CREATE response.
   a. SUCCESS – Continue with MPPS operation.
   b. FAILURE – MPPS operation is terminated.
5. The MPPS AE sends a DICOM Association Release Request to the MPPS server AE.
6. The user acquires additional images into the Patient/Study and then closes the Patient/Study.
7. The MPPS AE sends a DICOM Association Request to the MPPS server AE.
8. If the DICOM Association request fails then the MPPS operation is aborted.
9. If the DICOM Association request is successful then the MPPS AE sends a Modality Performed Procedure Step N-SET Request message to the MPPS server AE and waits for the N-SET response.
   a. SUCCESS – MPPS operation is successfully completed.
   b. FAILURE – MPPS operation is terminated.
10. The MPPS AE sends a DICOM Association Release request to the MPPS server AE.

9.4 File Meta Information Options

Implementation Class UID = “1.2.826.0.1.3680043.2.135.1066.101”

Implementation Version Name = “1.4.16/WIN32”

The Implementation Class UID is part of the File Meta Information written into every file and therefore necessary for any device that acts as an FSC.

10.0 AE Specifications

10.1 Send AE - Specification

The Send AE provides Standard Conformance to the following DICOM V3.0 SOP Classes as a SCU:

SOP Class Name	SOP Class UID
Verification SOP Class	1.2.840.10008.1.1
Digital X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Storage Commitment Push Model	1.2.840.10008.1.20.1

Association establishment policies

General

The DICOM Application Context name is 1.2.840.10008.3.1.1.1

The AE Title of the Send AE is a configurable parameter. The default title is "OEM_StoreSCU".

The Send AE establishes an association whenever a transfer job comes to the top of the transfer queue.

If the remote AE that stores the images is configured for the Storage Commit service then the Send AE establishes an association after a transfer job is successfully completed to request storage commitment.

The Send AE establishes an association whenever the user attempts to verify the DICOM connection with a remote AE.

The maximum PDU size is 30720 bytes.

Number of Associations

The Send AE attempts only one Association establishment at a time.

Asynchronous nature

The Send AE does not perform asynchronous operations.

Implementation Identifying Information

The Send AE provides a single Implementation Class UID which is "1.2.826.0.1.3680043.2.135.1066.101".

Association initiation policy

The Send AE initiates a new association for the DIMSE-C-STORE service operation for each transfer job that comes to the top of the job queue.

The Send AE initiates a new association for the DIMSE-C-ECHO service operation.

Transfer Image Object to a Remote AE

Associated Real-World Activity – Queue image(s) for transfer to remote AE

The associated Real-World activity is a C-Store Request initiated by the Send AE when a transfer job comes to the top of the job queue. A transfer job is created by the user selecting a study or group of studies to be sent to a remote AE.

Proposed presentation contexts

The Send AE proposes Presentation Contexts as shown in Table 10.1.-1.

The receiving AE returns which Presentation Contexts it supports in the Association Accept message.

Table 10.1.-1 Proposed Presentation Contexts for Send AE

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Digital X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Storage Commitment Push Model	1.2.840.10008.1.20.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Verification Service Class	1.2.840.10008.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

SOP Specific Conformance

When a successful response to a C-STORE operation is received, the status display is updated to indicate that the percentage of job that has been transferred at that point.

If an Association request fails or if a Failed, Refused or Warning response to a C-STORE operation is received then the currently active transfer job is put into an error state.

Extended negotiation is not supported.

See Annex A for a description of the IOD modules supported.

Send Storage Commit Request to Remote AE

Associated Real-World Activity – Request Storage Commit for previously transferred images

The associated Real-World activity is an N-Action Request initiated by the Send AE with a list of UIDs for the images from a successfully completed transfer job.

Proposed presentation contexts

The Send AE proposes Presentation Contexts as shown in Table 10.1-1.

The receiving AE returns which Presentation Contexts it supports in the Association Accept message.

SOP Specific Conformance

If a transfer job is completed successfully and the remote AE that the images were sent to is configured for the Storage Commit Service as a SCP then the Send AE initiates a Storage Commit Request message for the images in the transfer job. If the Storage Commit request is successful for an image then the local database record for that image indicates that the image has been archived.

Extended negotiation is not supported.

Send Echo Request to Remote AE

Associated Real-World Activity - Verify DICOM connection with remote AE

The associated Real-World activity is a C-Echo Request initiated by the user to determine if a remote DICOM AE is responding.

Proposed presentation contexts

The Send AE proposes a Presentation Context as shown in Table 10.1-1.

SOP Specific Conformance

The Send AE provides standard conformance to the DICOM Verification Service Class as a SCU.

Association acceptance policy

The Send AE is always ready to accept associations for the purpose of receiving a verification request or a storage commit response (N-EVENT-REPORT). The default port for listening for these events is 2400.

10.2 Modality Worklist AE - Specification

The Modality Worklist AE provides Standard Conformance to the following DICOM V3.0 SOP Classes as a SCU:

SOP Class Name	SOP Class UID
Modality Worklist Find	1.2.840.10008.5.1.4.31
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3
Verification SOP Class	1.2.840.10008.1.1

Association establishment policies

General

The DICOM Application Context name is 1.2.840.10008.3.1.1.1

The AE Title of the Modality Worklist AE is a configurable parameter. The default title is “OEM_WorklistSCU”.

The Modality Worklist AE establishes associations under the following conditions:

1. When the user initiates a manual query.

2. To create a Modality Performed Procedure Step notification object
3. When the user attempts to verify the DICOM connection with a remote Worklist AE

The maximum PDU size is 30720 bytes.

Number of Associations
The Modality Worklist AE can have one Association open at one time.

Asynchronous nature
The Modality Worklist AE does not perform asynchronous operations.

Implementation Identifying Information
The Modality Worklist AE provides a single Implementation Class UID which is "1.2.826.0.1.3680043.2.135.1066.101".

Association initiation policy
The Modality Worklist AE initiates a new association for the Worklist Management Class for each query session. A query session is defined as a group of queries required to completely satisfy the input from the user. The Association is closed when all of the results from the query session have been received.

If Patient/Study information was received from a worklist SCP then the Modality Worklist AE initiates a new association to handle the Performed Procedure Step Notification service when the Patient/Study record is "opened" for image acquisition and the first image is acquired.

The Modality Worklist AE initiates a new association to verify a DICOM connection with a remote Worklist AE when the user selects the echo option for the remote AE.

Worklist Query Operations
The Modality Worklist AE initiates associations to perform C-FINDs and Performed Procedure Step notifications. The association is closed after an error or when the initiator requests that it be closed.

Associated Real-World Activity – Query for Scheduled Procedure information
Once the Worklist Query association has been established, the Modality Worklist AE sends a series of Worklist C-FIND messages to the Worklist SCP. One C-FIND message is sent for each Modality selected by the user. After each C-FIND message is sent, the Modality Worklist AE waits for a C-FIND response from the SCP. If the total number of records received during the active association exceeds the maximum limit set by the user, a C-CANCEL-FIND message is sent to the SCP. Response messages are read in until a C-FIND response of Success is received.

Proposed presentation contexts
The Presentation Contexts proposed by the Modality Worklist AE are defined in table 10.2-1.

Table 10.2-1 Proposed Presentation Contexts for Modality Worklist AE

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Modality Worklist Find	1.2.840.10008.5.1.4.31	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Verification Service Class	1.2.840.10008.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

SOP Specific Conformance

The Modality Worklist AE provides standard conformance to the DICOM Modality Worklist Find Service Class as a SCU.

See Annex B for a description of the attribute values for the Modality Worklist Find operation proposed by the Modality Worklist AE.

Extended negotiation is not supported.

Worklist Performed Procedure Step Operations

Associated Real-World Activity – Notify Remote AE of Performed Procedure Step Status

Proposed presentation contexts

The Presentation Contexts proposed by the Modality Worklist AE are defined in table 10.2-1.

SOP Specific Conformance

The Modality Worklist AE provides standard conformance to the DICOM Modality Performed Procedure Step Service Class as a SCU.

When the system opens a Patient/Study/Series record for image acquisition and acquires an image, if the patient information was received from a remote Worklist AE and if the system has been configured for the Performed Procedure Step service then the Modality Worklist AE will attempt to establish an Association to create and update a Performed Procedure Step object.

When the patient is closed, a new association is created to update the Performed Procedure Step object with a status of “completed” or “discontinued.”

Extended negotiation is not supported.

Verify DICOM Connection with Worklist SCP

Associated Real-World Activity – User selects verify option for a remote Worklist AE

When the user selects the Echo option for a selected remote Worklist AE the Modality Worklist AE initiates an Association to execute the Verification Service class.

Proposed presentation contexts

The Presentation Contexts proposed by the Modality Worklist AE are defined in table 10.2-1.

SOP Specific Conformance

The Modality Worklist AE provides standard conformance to the DICOM Verification Service Class as a SCU.

The status of a C-ECHO request message is displayed (SUCCESS or FAIL).

Extended negotiation is not supported.

Association acceptance policy

The Modality Worklist AE never accepts associations.

11.0 Network Communication Profiles

Supported Communication Stacks

The NEXUS system provides DICOM V3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard (PS 3.8).

OSI Stack

No OSI Stack communications are provided.

TCP/IP Stack

The NEXUS system supports the TCP/IP stack.

Physical media support

The NEXUS system is indifferent to the physical medium over which TCP/IP executes.

Point-to-Point Stack

No Point-to-Point Stack communications are provided.

12.0 Extensions/Specializations/Privatizations

The Storage AEs do not support any private attributes.

13.0 Configuration

The NEXUS system obtains its configuration information for SQL Server 2008 configuration database.

AE title/presentation address mapping

The presentation address mapping is defined in the configuration database. The destination AE title, host name, listen port and service list for each remote AE that the NEXUS system can connect to are defined in this database. The mapping of the hostname to an IP address is defined in the 'hosts' file.

Configurable Parameters

The following parameters may be configured:

Local AE Titles

1. Station name
2. Remote AEs:
   a. AE Title
   b. Hostname
   c. Port number

The local network address, netmask and gateway are configured via the standard Windows Network configuration utility.

14.0 Support of Extended Character Sets

The NEXUS system supports the ISO_IR 100, ISO_IR 144 and GB18030 Character sets.

15.0 Annex A – DICOM Data Elements Supported

COMMON MODULES

Patient Module PS3.3 section C.7.1.1			
Attribute Name	**Tag**	**Type**	**Description**
Patient's name	0010,0010	2	Patient's full legal name
Patient ID	0010,0020	2	Primary hospital ID number or code for the patient
Patient's birth date	0010,0030	2	Birth date of patient
Patient's sex	0010,0040	2	Sex of patient
Other Patient IDs	0010,1000	3	Other identification numbers or codes used to identify the patient

General Study Module PS3.3 section C.7.2.1			
Attribute Name	**Tag**	**Type**	**Description**
Study Instance UID	0020,000D	1	Unique identifier for study
Study Date	0008,0020	2	Date the Study started
Study Time	0008,0030	2	Time the Study started
Referring Physician's name	0008,0090	2	Patient's referring physician
Study ID	0020,0010	2	User or equipment generated Study Identifier
Accession Number	0008,0050	2	A RIS generated study number
Study Description	0008,1030	3	Institution-generated description or classification of the Study (component) performed.

Patient Study Module PS3.3 section C.7.2.2			
Attribute Name	**Tag**	**Type**	**Description**
Occupation	0010,2180	3	Occupation of the Patient.
Patient’s Age	0010,1010	3	Age of the Patient
Patient's Weight	0010,1030	3	Weight of the Patient, in kilograms.
Patient's Size	0010,1020	3	Length or size of the Patient, in meters

General Series Module PS3.3 section C.7.3.1			
Attribute Name	**Tag**	**Type**	**Description**
Modality	0008,0060	1	Type of equipment that acquired image data (XA)
Series instance UID	0020,000E	1	Unique identifier of the Series
Series number	0020,0011	2	A number that identifies this Series
Laterality	0020,0060	2C	Laterality of (paired) body part examined. Required if the body part examined is a paired structure and Image Laterality (0020,0062) or Frame Laterality (0020,9072) or Measurement Laterality (0024,0113)are not sent.

Series Date	0008,0021	3	Date the Series started
Series Time	0008,0031	3	Time the Series started
Performing physician's name	0008,1050	3	Name of physician administering the Series
Protocol Name	0018,1030	3	User defined description of conditions under which Series was performed
Series Description	0008,103E	3	User defined description of Series
Operator's Name	0008,1070	3	Technologist(s) supporting the Series
Body Part Examined	0018,0015	3	Text description of the part of the body examined
Request Attributes Sequence	0040,0275	3	Sequence that contains attributes from the Imaging Service Request
>Schedule Procedure Step Description	0040,0007	3	Institution-generated description or classification of the Schedule Procedure Step to be performed
>Requested Procedure ID	0040,1001	3	ID of the Requested Procedure in the Imaging Service Request
>Scheduled Procedure Step ID	0040,0009	3	ID of the Scheduled Procedure Step
Performed Procedure Step ID	0040,0253	3	ID of that part of a Procedure that has been carried out within this step

General Equipment Module PS3.3 section C.7.5.1			
Attribute Name	**Tag**	**Type**	**Description**
Manufacturer	0008,0070	2	Manufacturer of equipment that produced images
Institution name	0008,0080	3	Institution where equipment that produced images is located
Institution Address	0008,0081	3	Mailing address of the institution where the equipment is located that produced the digital images
Station name	0008,1010	3	User defined name identifying the machine that produced the images
Manufacturer's model name	0008,1090	3	Manufacturer's model number of the equipment that produced the images
Device Serial Number	0018,1000	3	Manufacturer's serial number of the equipment that produced the digital images
Software version	0018,1020	3	Manufacturer's designation of software version of equipment that produced images

General Image Module PS3.3 section C.7.6.1			
Attribute Name	**Tag**	**Type**	**Description**
Image (instance) number	0020,0013	2	A number that identifies the image
Patient Orientation	0020,0020	2C	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). May be present otherwise. See Section C.7.6.1.1.1 for further explanation.

Image (content) date	0008,0023	2C	Date the image pixel data creation started. Required if image is part of a series in which the images are temporally related. May be present otherwise.
Image (content) time	0008,0033	2C	Time the image pixel data creation started. Required if image is part of a series in which the images are temporally related. May be present otherwise.
Image type	0008,0008	3	See IOD specific Image Module
Acquisition Number	0020,0012	3	A number identifying the single continuous gathering of data over a period of time which resulted in this image
Acquisition Date	0008,0022	3	The date the acquisition of data that resulted in this image started
Acquisition Time	0008,0032	3	The time the acquisition of data that resulted in this image started
Images in Acquisition	0020,1002	3	Number of images that resulted from this acquisition of data
Image comments	0020,4000	3	User defined comments about image
Lossy Image Compression	0028,2110	3	Specifies whether an image has undergone lossy compression
Presentation LUT Shape	2050,0020	3	When present, specifies an identity transformation for the Presentation LUT such that the output of all grayscale transformations, if any, are defined to be in P-values Enumerated Values: **Identity**: output is in P-Values - shall be used if Photometric Interpretation (0028,0004) is Monochrome2 or any color photometric interpretation **Inverse**: output after inversion is in P-Values - shall be used if Photometric Interpretation (0028,0004) is Monochrome1
Burned In Annotation	0028,0301	3	Indicates whether or not image contains sufficient burned in annotation to identify the patient and date the image was acquired. Enumerated Values: YES NO If this Attribute is absent, then the image may or may not contain burned in annotation.

Image Pixel Module PS3.3 section C.7.6.3			
Attribute Name	**Tag**	**Type**	**Description**
Samples per pixel	0028,0002	1	Number of samples (planes) in this image (1)
Photometric interpretation	0028,0004	1	Specifies the intended interpretation of the pixel data (MONOCHROME2 or MONOCHROME1)
Rows	0028,0010	1	Number of rows in image
Columns	0028,0011	1	Number of columns in image
Bits allocated	0028,0100	1	See IOD Image Module

Bits stored	0028,0101	1	See IOD Image Module
High bit	0028,0102	1	See IOD Image Module
Pixel representation	0028,0103	1	See IOD Image Module
Pixel data	7FE0,0010	1	Data stream of pixel samples which comprise the image

Display Shutter Module (Optional) PS3.3 section C.7.6.11			
Attribute Name	**Tag**	**Type**	**Description**
Shutter shape	0018,1600	1	Shape of the shutter defined for display (REGULAR, POLYGON, CIRCULAR)
Center of circular shutter	0018,1610	1C	Required if shutter shape is CIRCULAR
Radius of circular shutter	0018,1612	1C	Required if shutter shape is CIRCULAR
Shutter Left Vertical Edge	0018,1602	1C	Required if Shutter Shape (0018,1600) is RECTANGULAR. Location of the left edge of the rectangular shutter with respect to pixels in the image given as column.
Shutter Right Vertical Edge	0018,1604	1C	Required if Shutter Shape (0018,1600) is RECTANGULAR. Location of the right edge of the rectangular shutter with respect to pixels in the image given as column.
Shutter Upper Horizontal Edge	0018,1606	1C	Required if Shutter Shape (0018,1600) is RECTANGULAR. Location of the upper edge of the rectangular shutter with respect to pixels in the image given as row.
Shutter Lower Horizontal Edge	0018,1608	1C	Required if Shutter Shape (0018,1600) is RECTANGULAR. Location of the lower edge of the rectangular shutter with respect to pixels in the image given as row.
Vertices of the Polygonal Shutter	0018,1620	1C	Required if Shutter Shape (0018,1600) is POLYGONAL.

VOI LUT Module (Conditional) PS3.3 section C.11.2 **Required for DX image if Presentation Intent Type (0008,0068) is FOR PRESENTATION**			
Attribute Name	**Tag**	**Type**	**Description**
Window center	0028,1050	1C	Window center for display.
Window width	0028,1051	1C	Window width for display. Required if Window center (0028,1050) is sent.

Storage Commit Request PS3.4 section J.3.2.1.1			
Attribute Name	**Tag**	**Type**	**Description**
Transaction UID	0008,1195	1	Request Storage Commit
Referenced SOP Sequence	0008,1199	1	Uniquely identifies the SOP instance

Referenced SOP Class UID	0008,1150	1	Uniquely identifies the referenced SOP Class
Referenced SOP Instance UID	0008,1155	1	Uniquely identifies the referenced SOP Instance

SOP Common Module PS3.3 section C.12.1			
Attribute Name	**Tag**	**Type**	**Description**
SOP class UID	0008,0016	1	Uniquely identifies the SOP class Secondary Capture Image Storage "1.2.840.10008.5.1.4.1.1.7"
SOP instance UID	0008,0018	1	Uniquely identifies the SOP instance
Specific Character Set	0008,0005	1C	Character Set that expands or replaces the Basic Graphic Set. Required if an expanded or replacement set is used. See C12.1.1.2 for Defined Terms.

Overlay Plane Module (Conditional) PS3.3 section C.9.2 Required for images if graphic annotation is present			
Attribute Name	**Tag**	**Type**	**Description**
Overlay Rows	(60xx,0010)	1	Number of Rows in Overlay.
Overlay Columns	(60xx,0011)	1	Number of Columns in Overlay.
Overlay Type	(60xx,0040)	1	Indicates whether this overlay represents a region of interest or other graphics. Enumerated Values: **G** Graphics **R** ROI
Overlay Origin	(60xx,0050)	1	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. Column values greater than 1 indicate the overlay plane origin is to the right of the image origin. Row values greater than 1 indicate the overlay plane origin is below the image origin. Values less than 1 indicate the overlay plane origin is above or to the left of the image origin. Note Values of 0\0 indicate that the overlay pixels start 1 row above and one column to the left of the image pixels.
Overlay Bits Allocated	(60xx,0100)	1	Number of Bits Allocated in the Overlay. The value of this Attribute shall be 1. Note Formerly the standard described embedding the overlay data in the Image Pixel Data (7FE0,0010), in which case the value of this Attribute was

			required to be the same as Bits Allocated (0028,0100). This usage has been retired. See PS3.3-2004.
Overlay Bit Position	(60xx,0102)	1	The value of this Attribute shall be 0. Note Formerly the standard described embedding the overlay data in the Image Pixel Data (7FE0,0010), in which case the value of this Attribute specified the bit in which the overlay was stored. This usage has been retired. See PS3.3-2004.
Overlay Data	(60xx,3000)	1	Overlay pixel data. The order of pixels sent for each overlay is left to right, top to bottom, i.e., the upper left pixel is sent first followed by the remainder of the first row, followed by the first pixel of the 2nd row, then the remainder of the 2nd row and so on. Overlay data shall be contained in this Attribute. See Section C.9.2.1.1 for further explanation.
Overlay Description	(60xx,0022)	3	User-defined comments about the overlay.
Overlay Subtype	(60xx,0045)	3	Defined Term that identifies the intended purpose of the Overlay Type. See Section C.9.2.1.3 for further explanation.
Overlay Label	(60xx,1500)	3	A user defined text string that may be used to label or name this overlay.
ROI Area	(60xx,1301)	3	Number of pixels in ROI area. See Section C.9.2.1.2 for further explanation.
ROI Mean	(60xx,1302)	3	ROI Mean. See Section C.9.2.1.2 for further explanation.
ROI Standard Deviation	(60xx,1303)	3	ROI standard deviation. See Section C.9.2.1.2 for further explanation.

DX IOD MODULES

DX Series Module PS3.3 section C.8.11.1			
Attribute Name	**Tag**	**Type**	**Description**
Modality	0008,0060	1	Type of equipment that originally acquired the data used to create the images in this series. Enumerated Values: DX, PX, IO, MG. See Section C.7.3.1.1.1 for further explanation
Presentation Intent Type	0008,0068	1	Identifies the intent of the images that are contained within this Series. Enumerated Values: FOR PRESENTATION, FOR PROCESSING. See C.8.11.1.1.1 for further explanation.

X-Ray Acquisition Dose Module PS3.3 section C.8.7.8			
Attribute Name	**Tag**	**Type**	**Description**
KVP	0018,0060	3	Peak kilo voltage output of the X-Ray generator used
Exposure Time	0018,1150	3	Duration of X-Ray exposure in msec. See 8.7.2.1.1. Required if Exposure (0018,1152) is not present
Tube Current	0018,1151	3	X-Ray Tube Current in mA
Exposure	0018,1152	3	The product of exposure time and X-Ray tube current expressed in mAs. Required if either Exposure Time (0018,1150) or X-Ray Tube Current (0018,1151) is not present.
Exposure in µAs	0018,1153	3	The product of exposure time and X-Ray tube current expressed in µAs
ImageAreaDoseProduct	0018,115e	3	Total area-dose-product to which the patient was exposed, accumulated over the complete Performed Procedure Step and measured in dGy*cm*cm, including fluoroscopy
Comments on Radiation Dose	0040,0310	3	Effective dose in mSv. Only sent when Effective Dose is enabled

DX Anatomy Imaged Module PS3.3 section C.8.11.2			
Attribute Name	**Tag**	**Type**	**Description**
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, U=unpaired, B=both left and right. Note: This Attribute is mandatory, in order to ensure that images may be positioned correctly relative to one another for display. Shall be consistent with any laterality information contained in Primary Atomic Structure Modifier Sequence (0008,2230), if present. Note: Laterality (0020,0060) is a Series level Attribute and must be the same for all Images in the Series, hence it must be absent.
Anatomic Region Sequence	0008,2218	2	Sequence that identifies the anatomic region of interest in this Instance (i.e., external anatomy, surface anatomy,or general region of the body). Zero or one Item shall be included in this Sequence

DX Image Module PS3.3 section C.8.11.3			
Attribute Name	**Tag**	**Type**	**Description**
Image Type	0008,0008	1	Image identification characteristics
Samples per Pixel	0028,0002	1	Number of samples in this image. Shall have an Enumerated Value of 1.
Photometric Interpretation	0028,0004	1	Specifies the intended interpretation of the pixel data. Enumerated Values: MONOCHROME1, MONOCHROME2
Bits Allocated	0028,0100	1	Number of bits allocated for each pixel sample.
Bits Stored	0028,0101	1	Number of bits stored for each pixel sample.
High Bit	0028,0102	1	Most significant bit for pixel sample data. Shall have an Enumerated Value of one less than the value in Bit Stored (0028,0101).
Pixel Representation	0028,0103	1	Data representation of the pixel samples. Shall have the Enumerated Value: 0000H = Unsigned Integer.
Pixel Intensity Relationship	0028,1040	1	The relationship between the Pixel sample values and the X-Ray beam intensity. Enumerated Values: LIN = Linearly proportional to X-Ray beam intensity, LOG = Logarithmically proportional to X-ray beam intensity. See C.8.11.3.1.2 for further explanation.
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. Enumerated Values: 1 = Lower pixel values correspond to less X-Ray beam intensity, -1 = Higher pixel values correspond to less X-Ray beam intensity. See C.8.11.3.1.2 for further explanation.
Rescale Intercept	0028,1052	1	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. See C.8.11.3.1.2 for further explanation.
Rescale Slope	0028,1053	1	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 See C.8.11.3.1.2 for further explanation.
Rescale Type	0028,1054	1	Specifies the output units of Rescale Slope (0028,1053) and Rescale Intercept (0028,1052). Enumerated Value: US = Unspecified See C.8.11.3.1.2 for further explanation.
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. 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. See C.8.11.3.1.2 for further explanation.
Lossy Image Compression	0028,2110	1	Specifies whether an Image has undergone lossy compression. Enumerated Values: 00 = Image has NOT been subjected to lossy compression. 01 = Image has been subjected to lossy compression. See C.7.6.1.1.5 for further explanation.
Patient Orientation	0020,0020	1C	Patient direction of the rows and columns of the image. See C.7.6.1.1.1 for further explanation. Required if View Code Sequence (0054,0220) is not present or is present with an Item value other than (G-8300, SRT, "tissue specimen") or (G-8310, SRT, "tissue specimen from breast"). May be present otherwise.
Burned In Annotation	0028,0301	1	Indicates whether or not image contains sufficient burned in annotation to identify the patient and date the image was acquired. Enumerated Values: YES, NO
Window Center	0028,1050	1C	Defines a Window Center for display. See C.8.11.3.1.5 for further explanation. Required if Presentation Intent Type (0008,0068) is FOR PRESENTATION and VOI LUT Sequence (0028,3010) is not present. May also be present if VOI LUT Sequence (0028,3010) is present.
Window Width	0028,1051	1C	Window Width for display. See C.8.11.3.1.5 for further explanation. Required if Window Center (0028,1050) is sent.

DX Detector Module			**PS3.3 section C.8.11.4**
Attribute Name	**Tag**	**Type**	**Description**
Detector Type	0018,7004	2	The type of detector used to acquire this image. Defined Terms: DIRECT = X-Ray photoconductor, SCINTILLATOR = Phosphor used, STORAGE = Storage phosphor, FILM = Scanned film/screen
Detector Description	0018,7006	3	Free text description of detector.
Detector Manufacturer Name	0018,702A	3	Name of the manufacturer of the detector component of the acquisition system

Detector Manufacturer's Model Name	0018,702B	3	Model name of the detector component of the acquisition system
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. See 10.7.1.3 for further explanation of the value order. The value of this attribute shall never be adjusted to account for correction for the effect of geometric magnification or calibration against an object of known size; Pixel Spacing (0028,0030) is specified for that purpose.
Pixel Spacing	0028,0030	1C	Physical distance in the patient between the center of each pixel, specified by a numeric pair - adjacent row spacing (delimiter) adjacent column spacing in mm. See Section 10.7.1.1 and Section 10.7.1.3. Required if the image has been calibrated. May be present otherwise
Exposure Index	0018,1411	3	Measure of the detector response to radiation in the relevant image region of an image acquired with a digital x-ray imaging system as defined in IEC 62494-1. Notes: 1. A string rather than binary Value Representation is used for this Attribute, in order to allow the sender to control the precision of the value as suggested in the report of AAPM Task Group 116. 2. This index value is scaled as defined by IEC 62494-1.
Target Exposure Index	0018,1412	3	The target value used to calculate the Deviation Index (0018,1413) as defined in IEC 62494-1.
Deviation Index	0018,1413	3	A scaled representation of the difference of the Exposure Index compared to the Target Exposure Index as defined in IEC 62494-1 and the report of AAPM TG 116.
Detector ID	0018,700A	3	The ID or serial number of the detector used to acquire this image

DX Positioning Module PS3.3 section C.8.11.5			
Attribute Name	**Tag**	**Type**	**Description**
Positioner Type	0018,1508	3	Defined Terms: CARM, COLUMN, MAMMOGRAPHIC, PANORAMIC, CEPHALOSTAT, RIGID, NONE. Notes: 1. The term CARM can apply to any positioner with 2 degrees of freedom of rotation of the X-Ray beam about the Imaging Subject. 2. The term COLUMN can apply to any positioner with 1 degree of freedom of rotation of the X-Ray beam about the Imaging Subject.
Positioner Primary Angle	0018,1510	3	Position of the X-Ray beam about the patient from the RAO to LAO direction where movement from RAO to vertical is positive, if Positioner Type (0018,1508) is CARM. See C.8.7.5 XA Positioner Module for further explanation if Positioner Type (0018,1508) is CARM. See C.8.11.7 Mammography Image Module for explanation if Positioner Type (0018,1508) is MAMMOGRAPHIC.
Positioner Secondary Angle	0018,1511	3	Position of the X-Ray beam about the patient from the CAU to CRA direction where movement from CAU to vertical is positive, if Positioner Type (0018,1508) is CARM. See C.8.7.5 XA Positioner Module for further explanation if Positioner Type (0018,1508) is CARM. See C.8.11.7 Mammography Image Module for explanation if Positioner Type (0018,1508) is MAMMOGRAPHIC.
View Position	0018,5101	3	Radiographic view of the image relative to the imaging subject's orientation.

Acquisition Context Module PS3.3 section C.7.6.14			
Attribute Name	**Tag**	**Type**	**Description**
Acquisition Context Sequence	0040,0555	2	A sequence of Items that describes the conditions present during the acquisition of the data of the SOP Instance Zero of more items shall be included in this sequence

16.0 Annex B – Worklist AE Attributes

Attribute	Tag	Return Key Type	Remark / Matching Type
Scheduled Procedure Step Sequence	(0040,0100)	1	The Attributes of the Scheduled Procedure Step shall only be retrieved with Sequence Matching. The Scheduled Procedure Step Sequence shall contain only a single Item.
>Scheduled Station AE Title	(0040,0001)	1	The Scheduled station AE title shall be retrieved with Single Value Matching only.
>Scheduled Procedure Step Start Date	(0040,0002)	1	Scheduled Step Start Date shall be retrieved with Single Value Matching or Range Matching. See remark under Scheduled Procedure Step Start Time (0040,0003).
>Scheduled Procedure Step Start Time	(0040,0003)	1	Scheduled Step Start Time shall be retrieved with Single Value Matching or Range Matching. Scheduled Step Start Date and Scheduled Step Start Time are subject to Range Matching. If both keys are specified for Range Matching, e.g., the date range July 5 to July 7 and the time range 10am to 6pm specifies the time period starting on July 5, 10am until July 7, 6pm. Note If the Information System does not provide scheduling for individual Procedure Steps, it may use the closest scheduling information it possesses (e.g., Procedures are subject to scheduling instead of Procedure Steps).
>Modality	(0008,0060)	1	The Modality shall be retrieved with Single Value Matching.
>Scheduled Performing Physician's Name	(0040,0006)	2	Scheduled Performing Physician's Name shall be retrieved with Single Value Matching or Wild Card Matching.
>Scheduled Procedure Step Description	(0040,0007)	1C	Either the Scheduled Procedure Step Description (0040,0007) or the Scheduled Protocol Code Sequence (0040,0008) or both shall be supported by the SCP.
>Scheduled Station Name	(0040,0010)	2	An institution defined name for the modality on which the Scheduled Procedure Step is scheduled to be performed.
>Scheduled Procedure Step Location	(0040,0011)	2	The location at which the Procedure Step is scheduled to be performed.
>Scheduled Protocol	(0040,0008)	1C	Either the Scheduled Procedure Step

Code Sequence			Description (0040,0007) or the Scheduled Protocol Code Sequence (0040,0008) or both shall be supported by the SCP. The Scheduled Protocol Code Sequence contains one or more Items.
>>Code Value	(0008,0100)	1	Unique identifier to be used to identify the Study
>>Coding Scheme Version	(0008,0103)	1	Used to identify the version of a coding scheme if necessary to resolve ambiguity in Code Value (0008,0100) or Code Meaning (0008,0104)
>>Coding Scheme Designator	(0008,0102)	1C	Identifies the coding scheme in which the code for a term is defined. Standard coding scheme designators used in DICOM information interchange are listed in PS3.16. Other coding scheme designators, for both private and public coding schemes, may be used, in accordance with PS3.16
>>Code Meaning	(0008,0104)	1	Text that has meaning to a human and conveys the meaning of the term defined by the combination of Code Value and Coding Scheme Designator
>Pre-Medication	(0040,0012)	2C	Required if Pre-Medication is to be applied to that Scheduled Procedure Step.
>Scheduled Procedure Step ID	(0040,0009)	1	Identifier that identifies the Scheduled Procedure Step.
>Requested Contrast Agent	(0032,1070)	2C	Required if Contrast Media is to be applied to that Scheduled Procedure Step.
Requested Procedure ID	(0040,1001)	1	
Requested Procedure Description	(0032,1060)	1C	The Requested Procedure Description (0032,1060) or the Requested Procedure Code Sequence (0032,1064) or both shall be supported by the SCP.
Requested Procedure Code Sequence	(0032,1064)	1C	The Requested Procedure Description (0032,1060) or the Requested Procedure Code Sequence (0032,1064) or both shall be supported by the SCP. The Requested Procedure Code Sequence shall contain only a single Item.
>Code Value	(0008,0100)	1	An identifier that is unambiguous within the Coding Scheme
>Coding Scheme Designator	(0008,0102)	1	Identifies the coding scheme in which the code for a term is defined. Standard coding scheme designators used in DICOM information interchange are listed in PS3.16. Other coding scheme designators, for both private and public coding schemes, may be used, in accordance with PS3.16.

>Coding Scheme Version	(0008,0103)	1C	Used to identify the version of a coding scheme if necessary to resolve ambiguity in Code Value (0008,0100) or Code Meaning (0008,0104).
>Code Meaning	(0008,0104)	1	Text that has meaning to a human and conveys the meaning of the term defined by the combination of Code Value and Coding Scheme Designator.
Study Instance UID	(0020,000D)	1	Unique identifier to be used to identify the Study
Study Date	(0008,0020)	3	The values of Study Date (0008,0020) and Study Time (0008,0030) may be provided in order to achieve consistency of Study level Attributes in composite instances generated in multiple performed procedure steps on different devices, and the worklist values may be updated by the SCP based on information received from Modality Performed Procedure Steps or by examining the composite instances generated
Study Time	(0008,0030)	3	The values of Study Date (0008,0020) and Study Time (0008,0030) may be provided in order to achieve consistency of Study level Attributes in composite instances generated in multiple performed procedure steps on different devices, and the worklist values may be updated by the SCP based on information received from Modality Performed Procedure Steps or by examining the composite instances generated.
Referenced Study Sequence	(0008,1110)	2	Uniquely identifies the Study SOP Instances associated with this SOP Instance. One or more Items shall be included in this sequence. See Section 10.6.1.
>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance
Accession Number	(0008,0050)	2	A departmental IS generated number that identifies the order for the Imaging Service Request. A RIS generated study number
Requesting Physician	(0032,1032)	2	Name of the physician who requested the Imaging Service Request.
Referring Physician's Name	(0008,0090)	2	Name of the patient's referring physician for this Imaging Service Request.
Patient's Name	(0010,0010)	1	Patient Name shall be retrieved with Single Value Matching or Wild Card Matching.

Patient ID	(0010,0020)	1	Patient ID shall be retrieved with Single Value Matching.
Other Patient IDs	(0010,1000)	3	An identification number or code used to identify the patient
>Type of Patient ID	(0010,0022)	3	The type of identifier in this item. Enumerated Values: TEXT RFID BARCODE Note: The identifier is coded as a string regardless of the type, not as a binary value.
Patients Birth Date	(0010,0030)	2	Date of birth of the named patient
Patient's Sex	(0010,0040)	2	Sex of the named patient. Enumerated Values: M male F female O other
Patient's Weight	(0010,1030)	2	Weight of the patient in kilograms
Occupation	(0010,2180)	3	Occupation of the Patient.
Patient's Age	(0010,1010)	3	Age of the Patient

17.0 Annex C – MWM Attributes available for DICOM storage

Table C. 1 Common Attributes in Modality Worklist Management and DICOM storage

Attribute Name	Tag	Type	Description
Modality	0008,0060	1	Type of equipment that acquired image data (XA)
Study Instance UID	0020,000D	1	Unique Identifier for Study
Patient Name	0010,0010	2	Patient's full legal name
Patient ID	0010,0020	2	Primary hospital ID number or code for the patient
Patient's Birth Date	0010,0030	2	Birth date of the patient
Accession Number	0008,0050	2	A RIS generated study number
Referring Physician	0008,0090	2	Patient's referring Physician

Table C.2 MPPS Attributes

Attribute Name	Tag	Description
Performed Station AE Title	(0040,0241)	AE title of the modality on which the Performed Procedure Step was performed.
Performed Station Name	(0040,0242)	An institution defined name for the modality on which the

		Performed Procedure Step was performed.
Performed Location	(0040,0243)	Description of the location at which the Performed Procedure Step was performed.
Performed Procedure Step Start Date	(0040,0244)	Date on which the Performed Procedure Step started. Note: This value may be used to determine the earliest date to use as the Study Date (0008,0020) in composite instances and in updated Modality Scheduled Procedure Steps in order to allow Study level attributes to have consistent values if additional Procedure Steps are performed.
Performed Procedure Step Start Time	(0040,0245)	Time at which the Performed Procedure Step started. Note: This value may be used to determine the earliest time to use as the Study Time (0008,0030) in composite instances and in updated Modality Scheduled Procedure Steps in order to allow Study level attributes to have consistent values if additional Procedure Steps are performed.
Performed Procedure Step ID	(0040,0253)	User or equipment generated identifier of that part of a Procedure that has been carried out within this step
Performed Procedure Step End Date	(0040,0250)	Date on which the Performed Procedure Step ended.
Performed Procedure Step End Time	(0040,0251)	Time at which the Performed Procedure Step ended.
Performed Procedure Step Status	(0040,0252)	Contains the state of the Performed Procedure Step. Enumerated Values: IN PROGRESS = Started but not complete DISCONTINUED = Canceled or unsuccessfully terminated COMPLETED = Successfully completed
Performed Procedure Step Description	(0040,0254)	Institution-generated description or classification of the Procedure Step that was performed.
Comments on the Performed Procedure Step	(0040,0280)	User-defined comments on the Performed Procedure Step.
Performed Procedure Type Description	(0040,0255)	A description of the type of procedure performed.
Procedure Code Sequence	(0008,1032)	A sequence that conveys the (single) type of procedure performed. Only a single Item shall be included in this sequence.
Reason For Performed Procedure Code Sequence	(0040,1012)	Coded reason(s) for performing this procedure. Note: May differ from the values in Reason for the Requested Procedure (0040,100A) in Request Attribute Sequence (0040,0275), for example if what was performed differs from what was requested. One or more Items shall be included in this Sequence.
Performed Procedure Step Discontinuation Reason Code Sequence	(0040,0281)	The reason the Performed Procedure Step Status (0040,0252) was set to DISCONTINUED.

18.0 Annex D – Non-Standard attributes available for DICOM storage

Table D. 2 Non-Standard Attributes for DICOM storage

Note: These DICOM attributes are not used by default and have to be enabled by the user

Attribute Name	Tag	Type	Description
Patient Comments	0010,4000	3	Populated with content from Tech Comments
Military Rank	0010,1080	3	Populated with content from Views
Visit Status ID	0038,0008	3	Populated with content from Patient – Trip
Admitting Diagnosis Description	0008,1080	3	Populated with content from Additional History or Anamnesis

0.0 Revisions

Rev	Date	Initials	EC	Training Req'd (x)	Purpose
A	05/12/2015	SPW	00036	--	• New Release for Nexus 3.0
B	02/27/2017	CAM	00090	--	• Change references from Varian to Varex
C	04/11/2018	SPW	00200	--	• Updated Private Tags in Annex A, added Annex D
D	8/9/2019	SPW	0000320	--	• Removed reference to DRF and updated header to state DR
E	10/9/2020	SPW	0005641	--	• Updated for Nexus DR 4.7