

DICOM Conformance Statement

IntelliSpace PACS DCX R3.1.0



Issued by:

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1. DICOM Conformance Statement Overview

The IntelliSpace PACS DCX R3.1.0 is a Picture Archive and Communication System solution. The IntelliSpace PACS DCX R3.1.0 includes a PACS Viewer for medical images in the DICOM format that are received from medical modalities and stored at the DICOM servers.

The IntelliSpace PACS DCX R3.1.0 provides the following DICOM data exchange features:

- It receives instances sent to it by remote systems (e.g. workstations or imaging modalities), stores them in a database and commits performed storing.
- It allows a remote system to query the IntelliSpace PACS DCX R3.1.0 database and to retrieve instances from it.
- It allows user to query a remote system and to retrieve instances from it.
- It allows user to print images by a DICOM printer.
- It provides additional services for instances distribution and archive management.
- It is able to write DICOM DVD General purpose Interchange with JPEG Application Profile disks.

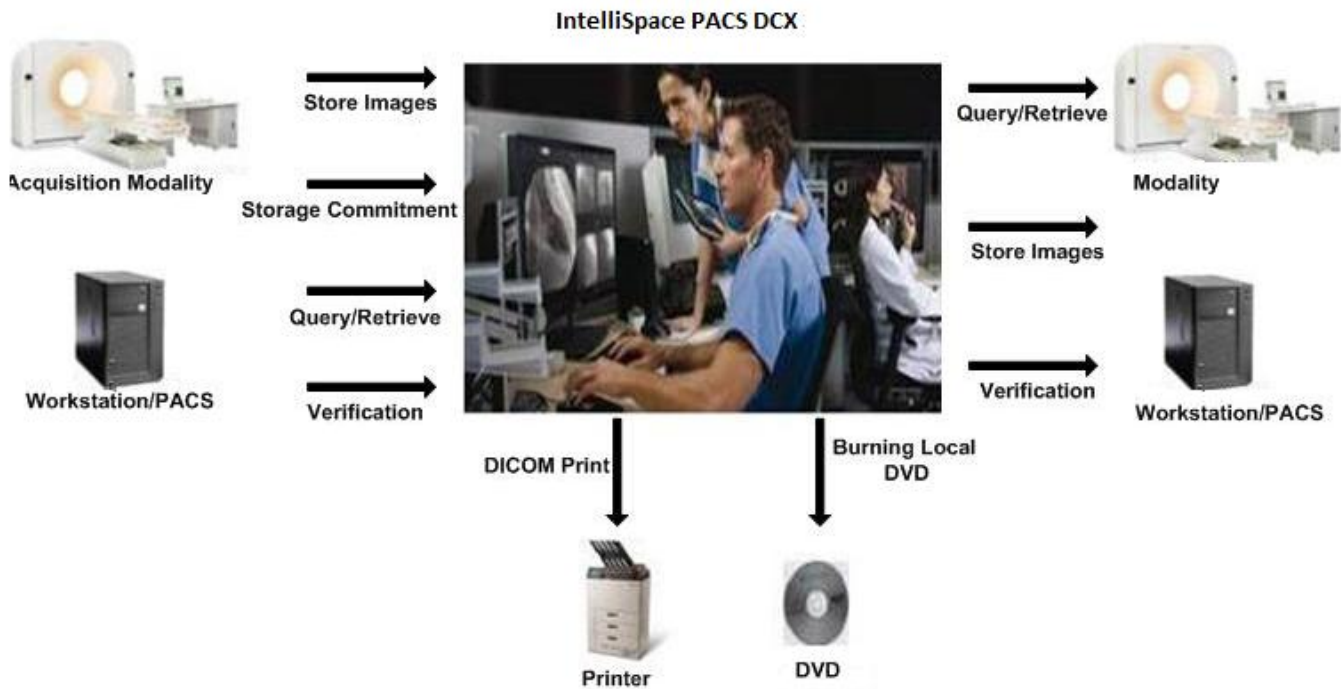


Figure 1: IntelliSpace PACS DCX R3.1.0 in a DICOM Network

The IntelliSpace PACS DCX R3.1.0 allows the operator also to view, analyze and process the images stored in the database. Some advanced analysis and processing applications are primarily designed for images generated by Philips equipment when sent to the IntelliSpace PACS DCX R3.1.0.

The following table presents an overview of all network services and the applicable SOP Classes as provided by the IntelliSpace PACS DCX R3.1.0

Table 1: Network Services

SOP Class		User of Service (SCU)	Provider of Service (SCP)	Display
Name	UID			
Other				
Verification SOP Class	1.2.840.10008.1.1	Yes	Yes	N/A

SOP Class		User of Service (SCU)	Provider of Service (SCP)	Display
Name	UID			
Print Management				
Print Job SOP Class	1.2.840.10008.5.1.1.14	Yes	No	N/A
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	Yes	No	N/A
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No	N/A
>Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Yes	No	N/A
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No	N/A
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No	N/A
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Yes	No	N/A
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No	N/A
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No	N/A
>Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Yes	No	N/A
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No	N/A
Query/Retrieve				
Patient Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Yes	Yes	N/A
Patient Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Yes	Yes	N/A
Study Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes	N/A
Study Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes	N/A
Patient/Study Only QR Info. Model - FIND SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.1	Yes	Yes	N/A
Patient/Study Only QR Info. Model - MOVE SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.2	Yes	Yes	N/A
Transfer				
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Yes	Yes	No
Hardcopy Grayscale Image Storage (Retired)	1.2.840.10008.5.1.1.29	Yes	Yes	Yes
Hardcopy Color Image Storage (Retired)	1.2.840.10008.5.1.1.30	Yes	Yes	Yes
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Yes	Yes	Yes
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes	Yes
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	Yes	Yes
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	Yes	Yes	Yes
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	Yes	Yes
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	Yes	Yes	Yes
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	Yes	Yes
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	Yes	Yes
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	Yes	Yes
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	Yes	Yes
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes	Yes
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	Yes	Yes
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	Yes	Yes	Yes
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Yes	Yes	No
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	Yes	Yes
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Yes	Yes	Yes
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes	Yes
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	Yes	Yes
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	Yes	Yes	Yes
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	Yes	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	Yes	Yes
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Yes	Yes	No

SOP Class		User of Service (SCU)	Provider of Service (SCP)	Display
Name	UID			
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	Yes	Yes	No
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	Yes	No
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	Yes	No
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	Yes	No
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	Yes	No
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	Yes	No
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	Yes	No
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Yes	Yes	No
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	Yes	Yes	No
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes	Yes
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Yes	Yes	Yes
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Yes	Yes	Yes
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes	Yes
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Yes	Yes	Yes
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	Yes	Yes
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	Yes	Yes
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Yes	Yes	Yes
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	Yes	No
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Yes	Yes	No
VL Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Yes	Yes	Yes
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes	Yes
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	Yes	Yes
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	Yes	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	Yes	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	Yes	Yes
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	Yes	No
VL Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Yes	Yes	Yes
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Yes	Yes	No
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	Yes	Yes	No
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Yes	Yes	No
Procedure Log SOP Class	1.2.840.10008.5.1.4.1.1.88.40	Yes	Yes	No
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	Yes	Yes	No
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Yes	Yes	No
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Yes	Yes	No
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Yes	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes	No
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	Yes	Yes	Yes
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Yes	Yes	No
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	Yes	Yes	No
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	Yes	Yes	No
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Yes	Yes	No
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	Yes	Yes	No

SOP Class		User of Service (SCU)	Provider of Service (SCP)	Display
Name	UID			
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	Yes	Yes	No
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	Yes	Yes	No
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	Yes	Yes	No
Workflow Management				
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	No	Yes	N/A

Note:

- Private Transfer Syntaxes are not supported.
- Private SOP classes are supported for storing and distribution. Private SOP classes are not supported for viewing or presentation.

A table of Supported Media Storage Application Profiles (with roles) is provided.

Table 2: Media Services

Media Storage Application Profile	File-set Creator (FSC)	File-set Updater (FSU)	File-set Reader (FSR)
DVD			
General Purpose DVD Interchange with JPEG	Yes	No	No

Note :

IntelliSpace PACS DCX R3.1.0 does not check type of media on which data is burned. General Purpose DVD Interchange with JPEG Media Storage Application Profile is used for media writing.

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3. Introduction

3.1. Revision History

The revision history provides dates and differences of the different releases.

Table 3: Revision History

Document Version	Date of Issue	Status	Description
00	June 2015	Authorized	Final version

3.2. Audience

This Conformance Statement is intended for:

- (Potential) customers
- System integrators of medical equipment
- Marketing staff interested in system functionality
- Software designers implementing DICOM interfaces

It is assumed that the reader is familiar with the DICOM standard.

3.3. Remarks

The DICOM Conformance Statement is contained in chapter 4 through 8 and follows the contents and structuring requirements of DICOM PS 3.2.

This DICOM Conformance Statement by itself does not guarantee successful interoperability of Philips equipment with non-Philips equipment. The user (or user's agent) should be aware of the following issues:

- **Interoperability**
Interoperability refers to the ability of application functions, distributed over two or more systems, to work successfully together. The integration of medical devices into an IT environment may require application functions that are not specified within the scope of DICOM. Consequently, using only the information provided by this Conformance Statement does not guarantee interoperability of Philips equipment with non-Philips equipment.
It is the user's responsibility to analyze thoroughly the application requirements and to specify a solution that integrates Philips equipment with non-Philips equipment.
- **Validation**
Philips equipment has been carefully tested to assure that the actual implementation of the DICOM interface corresponds with this Conformance Statement.
Where Philips equipment is linked to non-Philips equipment, the first step is to compare the relevant Conformance Statements. If the Conformance Statements indicate that successful information exchange should be possible, additional validation tests will be necessary to ensure the functionality, performance, accuracy and stability of image and image related data. It is the responsibility of the user (or user's agent) to specify the appropriate test suite and to carry out the additional validation tests.
- **New versions of the DICOM Standard**
The DICOM Standard will evolve in future to meet the user's growing requirements and to incorporate new features and technologies. Philips is actively involved in this evolution and plans to adapt its equipment to future versions of the DICOM Standard. In order to do so, Philips reserves the right to make changes to its products or to discontinue its delivery. The user should ensure that any non-Philips provider linking to Philips equipment also adapts to future versions of the DICOM Standard. If not, the incorporation of DICOM enhancements into Philips equipment may lead to loss of connectivity (in case of networking) and incompatibility (in case of media).

3.4. Definitions, Terms and Abbreviations

Table 4: Definitions, Terms and Abbreviations

Abbreviation/Term	Explanation
AE	Application Entity
CAD	Computer Aided Design
CT	Computed Tomography
DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
DVD	Digital Versatile Disk
ECG	ElectroCardioGram
FSC	File-set Creator
FSR	File-set Reader
FSU	File-set Updater
IOD	Information Object Definition
JPEG	Joint Photographic Experts Group
MPPS	Modality Performed Procedure Step
MR	Magnetic Resonance
NEMA	National Electrical Manufacturers Association
PDU	Protocol Data Unit
RIS	Radiology Information System
RT	Radiotherapy
RWA	Real-World Activity
SC	Secondary Capture
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
WLM	Worklist Management
XA	X-Ray Angiographic

3.5. References

[DICOM] Digital Imaging and Communications in Medicine, Parts 1 - 18 (NEMA PS 3.1- PS 3.18),
National Electrical Manufacturers Association (NEMA)
Publication Sales 1300 N. 17th Street, Suite 1752 Rosslyn, Virginia. 22209, United States of America
Internet: <http://medical.nema.org/>

Note that at any point in time the official standard consists of the most recent yearly edition of the base standard (currently 2011) plus all the supplements and correction items that have been approved as Final Text.

4. Networking

This section contains the networking related services (vs. the media related ones).

4.1. Implementation model

The implementation model consists of three sections:

- The application data flow diagram, specifying the relationship between the Application Entities and the "external world" or Real-World Activities,
- A functional description of each Application Entity, and
- The sequencing constraints among them.

4.1.1. Application Data Flow

The IntelliSpace PACS DCX R3.1.0 communication is based on the DICOM v3.0 standard. This enables the IntelliSpace PACS DCX R3.1.0 to communicate with any DICOM v3.0 compliant products (e.g., modalities, workstations, PACS, hardcopy units). The IntelliSpace PACS DCX R3.1.0 can function both as a server and as a client. Thus it can send DICOM objects to other stations, and other stations can retrieve from the IntelliSpace PACS DCX R3.1.0 and send DICOM objects to it. The DICOM objects are transferred in the DICOM v3.0 protocol based on TCP/IP as a transport layer.

The IntelliSpace PACS DCX R3.1.0 implements and provides DICOM services using the following Application Entities:

- Storage Provider AE
- Distribution Manager AE
- Archive-Manager AE
- Media AE (No Network AE, See Chapter 5)
- Storage Commitment AE
- Print Manager AE

The next image shows the network application data flow as a functional overview of the IntelliSpace PACS DCX R3.1.0 AE's.

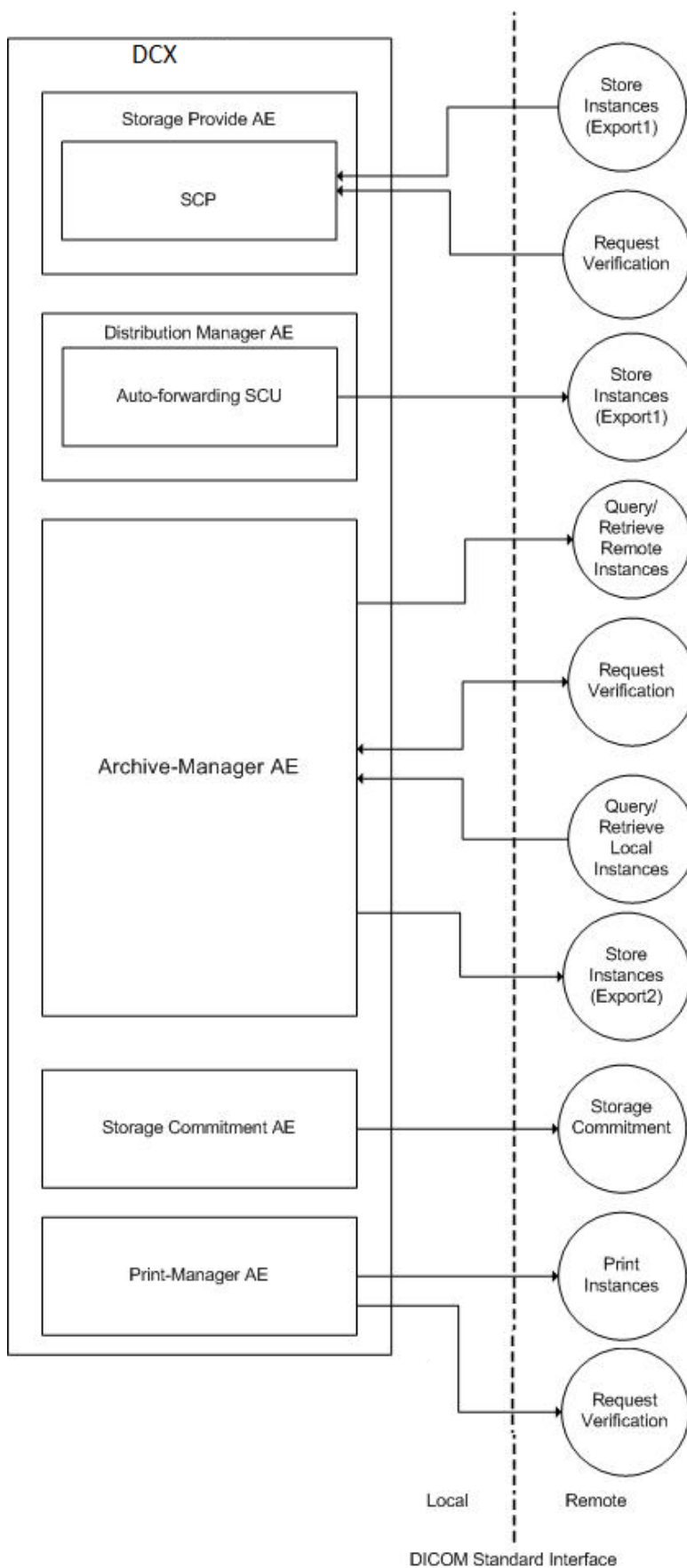


Figure 2: Networking application data flow diagram

The Application Entities incorporate the following functionality:

- The RWA Request Verification, the Storage Provider AE and Archive-Manager AE act as a C-ECHO SCP. It receives a Verification request and responds successfully to the requesting SCU.
- The RWA Storage Data Flow, the Archive Manager AE acts as C-STORE SCP. It receives requests for instance storage from external AE, processes the instance, populates its local database with instance information and stores the instances to the storage. The Stored images will be committed by the Storage Commitment AE, if requested. The IntelliSpace PACS DCX R3.1.0 will be acts as Storage Commitment SCP. This information is used for later queries and archive management.
- The RWA Forward Data Flow, the Distribution Manager AE acts as C-STORE SCU. It provides a non standard service for dispatching instances that originate in one AE to one or more target AE(s). Once a data collection is ready for distribution, the Distribution Manager AE further checks to see if there are any Forward-Rules defined for the data collection. For each Forward-Rule that the Distribution Manager AE found, the Distribution Manager AE initiates an association with the target AE and transmits the instances to it.
- After the instance is received by the Storage Provider AE and stored into database it is available for later queries and retrieving.
- After RWA Query Data Flow, the Archive-Manager AE acts as C-FIND SCP. It receives a find request from an external AE, makes a query to its database, and builds a list of the matching entries. Then Archive-Manager returns search results to the external AE (which may be the source AE or another AE).
- After RWA Retrieve Data Flow, the Archive-Manager AE acts as a C-MOVE SCP. It receives a retrieve request from an external AE, makes a query to its instances database, and builds a list of the matching instances. Then the Archive-Manager AE, acting as a C-STORE SCU, initiates an association with the target AE (which may be the source AE or another AE) and transmits the instances to it.
- The Archive-Manager AE acts as C-FIND-SCU. It Queries for instances to a remote node and receives query responses. Then the Archive-Manager shall act as C-MOVE-SCU to retrieve the selected instances from the remote node.
- The Archive-Manager can retrieve instances from a remote node to another remote node (other than itself). This is done by a MOVE request (C-MOVE-RQ) on a remote node for the selected instance to another configured remote node.
- The Archive-Manager AE uses defined Cleanup-Policies for performing automatic maintenance tasks related to disk space management. This mechanism enables the IntelliSpace PACS DCX R3.1.0 to run over long periods.
- The Print Manger AE acts as Print SCU. When user selecting images to be printed from the IntelliSpace PACS DCX R3.1.0 viewing application. The system will use DICOM Print to instruct the DICOM Printer to print films at Film Box level.

4.1.2. Functional Definition of AE's

This section contains a functional definition for each individual local Application Entity.

4.1.2.1. Functional Definition of Storage Provider AE

The Storage Provider constantly waits for association requests from external applications.

For each association it

- Verifies the access privileges that was defined for the requesting AE;
- Accepts transfer syntaxes according to the settings in the Storage Provider AE control database;
- Decides whether to accept the association runs in a separate process.

The Storage Provider accepts association to verify the connectivity and to import instances.

Verification Service Class:

The Storage Provider AE can perform the Verification service as SCP (RWA Request Verification).

A remote SCU shall request an association with the Storage Provider AE for Verification SOP class. After accepting the association, the AE shall receive and respond to the Verification request to check the network connection to the AE and make sure that the AE is up and running, and release the association when requested.

Storage Service Class:

The Storage Provider AE waits for incoming associations and can perform the Storage service as SCP (RWA Store Instances, Import).

Incoming associations are approved or rejected according to the settings in the Storage Provider AE control database.

A remote SCU shall request an association with the Storage Provider AE for Storage SOP classes. After accepting the association, the Storage Provider AE shall receive the Storage requests, store the data in the database, send the applicable Storage responses,

and release the association when requested. The received instances are attached to patient identified in accordance to defined identification rules.

4.1.2.2. Functional Definition of Distribution Manager AE

The IntelliSpace PACS DCX R3.1.0 provides a unique Forward-Rules feature that enables to use it as a DICOM network hub. When instances are received, system can forward these instances to other AE's according to these Forward-Rules. In this case system acts as a C-STORE SCU (Distribution Manager AE).

The Distribution Manager AE can forward received instances to one or more target AE(s).

Once an instance is received, the Distribution Manager AE further checks if there are any Forward-Rules defined for the instance (for the called and/or calling AE Title or received objects). For each Forward-Rule that the Distribution Manager AE found, the Distribution Manager AE initiates an association with the target AE and transmits the instances to it.

Storage Service Class :

The Distribution Manager AE can perform the Storage service as SCU (RWA Store Instances, Export 1) if there are any Forward-Rules defined for the called and/or calling AE Title or received objects.

The Distribution Manager AE shall request an association with the selected remote SCP. When the association is accepted, the Distribution Manager AE shall send the Storage requests, receive the Storage responses and act accordingly, and release the association. All transferred instances will be sent within one association.

4.1.2.3. Functional Definition of Archive-Manager AE

The Archive-Manager AE manages data that is received, processed and populated in the local database with instance information by Storage Provider AE. The information is used for later queries.

The Archive-Manager AE uses defined Cleanup-Policies for performing automatic maintenance tasks related to disk space management. This mechanism enables IntelliSpace PACS DCX R3.1.0 to run over long periods causing no administrative burden.

The system allows the operator also to view, analyze and process the images stored in the database.

The Archive-Manager acts as SCP (constantly waits for association requests from external applications), also it acts as SCU (accepts associations from remote Query/Retrieve SCU to query or to retrieve. For each association it verifies the access privileges that was defined for the requesting AE, decides whether to accept the association and runs in a separate process.

The Archive-Manager AE accepts association to verify the connectivity and to query and retrieve local instances.

The Archive-Manager AE provides ability to initiate query and retrieve remote instances for remote service class user.

IntelliSpace PACS DCX R3.1.0 allows the operator also to find and retrieve instances stored on remote AE.

The Archive-Manager AE initiates association with remote Query/Retrieve provider and query information about remote instances or query remote instances.

IntelliSpace PACS DCX R3.1.0 allows the operator also to export instances stored in the local database to remote AE.

The Archive-Manager AE provides ability to verify connectivity with remote AE.

The Application Entity includes the service classes that are described below.

Verification Service Class Provider:

The Archive-Manager AE can perform the Verification service as SCP (RWA Request Verification).

A remote SCU shall request an association with the Archive-Manager AE for Verification SOP class. After accepting the association, the AE shall receive and respond to the Verification request to check the network connection to the AE and make sure that the AE is up and running, and release the association when requested.

Verification Service Class User:

The Archive-Manager AE can perform the Verification service as SCU (RWA Request Verification).

The AE requests an association with a remote SCP for Verification SOP class. After accepting the association, the AE shall send a Verification request and waits a response to check the network connection to the remote SCP to be sure that the SCP is up and running, and requests a release of the association.

Storage Service Class:

The Archive-Manager AE can perform the Storage service as SCU (RWA Store Instances, Export 2, triggered by retrieve request or by operator).

The Archive-Manager AE shall request an association with the selected remote SCP for all applicable Storage SOP classes. When

the association is accepted, the Archive-Manager AE shall send the Storage requests (including data from local database), receive the Storage responses and act accordingly, and release the association. All requested instances will be sent within one association.

Query/Retrieve Service Class Provider:

The Archive-Manager AE can perform the Query/Retrieve service as SCP (RWA Query/ Retrieve Local Instances).

A remote SCU shall request an association with the Archive-Manager AE for Query/Retrieve SOP classes. After accepting the association, the Archive-Manager AE shall receive the Query/Retrieve requests.

In case of a Retrieve request, the Archive-Manager AE shall request storage as SCU (ref. Store Instances, Export 2). Next, Archive-Manager AE shall send the applicable Retrieve responses over the same association, and release the association when requested. As a C-FIND SCP and C-MOVE SCP Archive-Manager AE supports Patient Root, Study Root and Patient/Study Only Root Information Models.

Query/Retrieve Service Class User:

The Archive-Manager AE provides to user to perform the Query/Retrieve service as SCU (RWA Query/ Retrieve Remote Instances). The Archive-Manager AE shall request an association with a remote Query/Retrieve SCP for Query/Retrieve SOP classes. After accepting the association, the Archive-Manager AE shall send the Query/Retrieve requests.

In case of a Retrieve request, the remote AE shall request storage as SCU with Storage Provider AE. Next, remote AE shall send the applicable Retrieve responses over the same association, and release the association when requested.

As a C-FIND SCU and C-MOVE SCU Archive-Manager AE supports Patient Root and Study Root Information Models.

4.1.2.4. Functional Definition of Storage Commitment AE

The Storage Commitment AE receives requests from the SCU to commit previously stored instances in Storage Provider AE after request has been proceeded Storage Commitment AE inform remote SCU about requested commitment result in different association.

The Storage Commitment AE constantly waits for association requests from external applications. For each association it verifies the access privileges that was defined for the requesting AE, decides whether to accept the association and runs in a separate process. The Application Entity includes the service classes that are described below.

Verification Service Class:

The Storage Commitment AE can perform the Verification service as SCP (RWA Request Verification).

A remote SCU shall request an association with the Storage Commitment AE for Verification SOP class. After accepting the association, the AE shall receive and respond to the Verification request to check the network connection to the AE and make sure that the AE is up and running, and release the association when requested.

Storage Commitment Service Class:

The Storage Commitment AE can perform the Storage commitment service as SCP (RWA Storage Commitment).

A Remote SCU shall request an association with the Storage Commitment AE for Storage Commitment SOP class. After accepting the association, the storage Commitment AE shall receive the request (N-ACTION). The Storage Commitment AE may respond (send N-EVENT-REPORT) in the same association in which a request was received or in newly initiated association. The behavior is configured for each SCU.

In case of Storage Commitment request (N-ACTION), Storage Commitment AE checks for the commitment of required SOP Instance UID and updates the local database with information about Storage Commitment requests.

The Storage Commitment AE updates the local database with results on the existing Storage Commitment records, collect results for the same SCU and send results to the SCU. After SCU will inform SCP about successful received results, Storage Commitment AE removes Storage Commitment results from the local database. If the Storage Commitment AE can't send N-EVENT-REPORT to the remote SCU (for example due to error to connect to remote host), it will retry to send defined number of times.

4.1.2.5. Functional Definition of Print Manager AE

Print Manager AE allows users to send print images to a general DICOM Printer and provides ability to verify connectivity with remote AE.

The images are sends to the printer by "Image Mode".

It accepts color and grayscale printing in different formats with a flexible setup for the user.

Verification Service Class:

The Print Manager AE can perform the Verification service as SCU (RWA Request Verification).

The AE requests an association with a remote SCP for Verification SOP class. After accepting the association, the AE shall send a Verification request and waits a response to check the network connection to the remote SCP to be sure that the SCP is up and running, and requests a release of the association. The Storage Commitment AE shall release the association when requested.

Print Management Service Class:

The Print Manager AE can perform the Print Management service as SCU (RWA Print Instances).

The AE requests an association with a remote SCP for Print SOP classes. After accepting the association, the AE shall send a Film Session request (N-CREATE) and waits a response, sends Film Box request (N-CREATE) and waits a response, sends Image Box request (N-SET) and waits response, sends print request (N-ACTION) and waits response, requests a release of Film Box and Film Session and requests a release of the association.

4.1.3. Sequencing of Real World Activities

This section contains a description of specific sequencing as well as potential constraints of Real-World Activities, including any applicable user interactions, as performed by AE-s of the IntelliSpace PACS DCX R3.1.0.

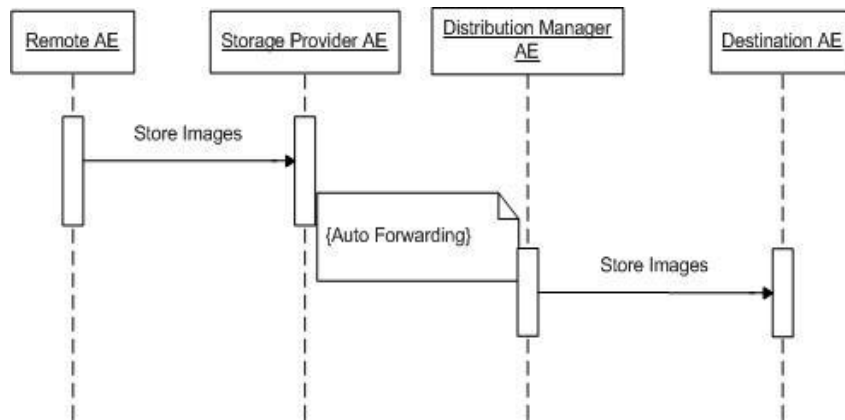


Figure 3: RWA Sequencing for Instance Forwarding.

IntelliSpace PACS DCX R3.1.0 has no ability to recognize when it has a complete study or what constitutes a complete study. If it receives an instance query while also receiving storage requests, the query response may not include all of the instances that are in the study.

4.2. AE Specifications

This section in the DICOM Conformance Statement is a set of Application Entity specifications. There are as many of these subsections as there are different AE's in the implementation.

4.2.1. Storage Provider AE

Detail of this specific Application Entity is specified in this section.

4.2.1.1. SOP Classes

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

Any SOP specific behavior is documented later in the Conformance Statement in the applicable SOP specific conformance section.

Table 5: SOP Classes for Storage Provider AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	No	Yes
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	No	Yes
Hardcopy Grayscale Image Storage (Retired)	1.2.840.10008.5.1.1.29	No	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Hardcopy Color Image Storage (Retired)	1.2.840.10008.5.1.1.30	No	Yes
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	No	Yes
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	No	Yes
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.3.1	No	Yes
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	No	Yes
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	No	Yes
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	No	Yes
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	No	Yes
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	No	Yes
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	No	Yes
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	No	Yes
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	No	Yes
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	No	Yes
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	No	Yes
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	No	Yes
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	No	Yes
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	No	Yes
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	No	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	No	Yes
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	No	Yes
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	No	Yes
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	No	Yes
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	No	Yes
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	No	Yes
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	No	Yes
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	No	Yes
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	No	Yes
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	No	Yes
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	No	Yes
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	No	Yes
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	No	Yes
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	No	Yes
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	No	Yes
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	No	Yes
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	No	Yes
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	No	Yes
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	No	Yes
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	No	Yes
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	No	Yes
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	No	Yes
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	No	Yes

SOP Class Name	SOP Class UID	SCU	SCP
VL Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	No	Yes
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	No	Yes
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	No	Yes
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	No	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	No	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	No	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	No	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	No	Yes
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	No	Yes
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	No	Yes
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	No	Yes
VL Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	No	Yes
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	No	Yes
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	No	Yes
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	No	Yes
Procedure Log SOP Class	1.2.840.10008.5.1.4.1.1.88.40	No	Yes
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	No	Yes
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	No	Yes
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	No	Yes
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	No	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	No	Yes
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	No	Yes
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	No	Yes
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	No	Yes
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	No	Yes
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	No	Yes
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	No	Yes
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	No	Yes
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	No	Yes
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	No	Yes

4.2.1.2. Association Policies

Each AE specification contains a description of the general association establishment and acceptance policies of the AE.

4.2.1.2.1. General

Storage Provider accepts Associations for the following purposes:

- To allow remote applications to verify application level communication with Storage Provider
- To allow remote applications to store instances in the Storage Provider database (i.e. instance import)

The maximum PDU size, which can be received the Storage Provider, is configurable (default value is 64 Kbytes).

Table 6: DICOM Application Context

Description	Value
Application Context Name	1.2.840.10008.3.1.1.1

4.2.1.2.2. Number of Associations

The Storage Provider manages an association resources pool. Each incoming association is assigned to one of the pool members. The size of this pool is configurable and the maximum size is limited only by the underlying operating system and by hardware limits. When the maximum number of associations is reached, Storage Provider will reject associations.

Table 7: Number of associations as an Association Initiator for this AE

Description	Value
Maximum number of simultaneous associations	0

Table 8: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations	Limited by the operating system

4.2.1.2.3. Asynchronous Nature

Asynchronous communication is not supported.

4.2.1.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

Table 9: DICOM Implementation Class and Version for Storage Provider AE

Implementation Class UID	1.2.826.0.1.3680043.8.195.3.1.7230010.3
Implementation Version Name	ISP_DCX_V3_1

4.2.1.2.5. Communication Failure Handling

Table 10: DICOM Command Communication Failure Behavior

Exception	Behavior
ARTIM Time-out	The association shall be dropped. Storage Provider waits next association.
Association Time-out SCU	The association shall be dropped. Storage Provider waits next association.
Association aborted	The association shall be dropped. Storage Provider waits next association.

4.2.1.3. Association Initiation Policy

Storage Provider never initiates an association.

4.2.1.4. Association Acceptance Policy

Storage Provider accepts Associations for the following purposes:

- To allow remote applications to verify application level communication with Storage Provider
- To allow remote applications to store instances in the Storage Provider database (i.e. instance import)

The Storage Provider will acknowledge an association from an external AE if the following conditions are met all conditions:

- The association request application context is DICOM,
- The requesting AE title is configured in the Storage Provider control database,
- The requesting AE network node matches the configured node,
- The responding AE title in the association request matches the one of defined Storage Provider AE titles,
- The number of active associations has not reached the maximum concurrent associations limit.

4.2.1.4.1. (Real-World) Activity – Verification as SCP

4.2.1.4.1.1. Description and Sequencing of Activities

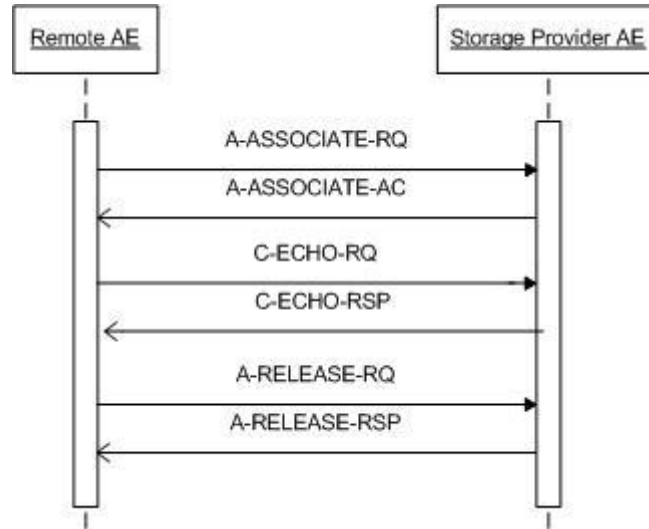


Figure 4: Sequencing of RWA Request Verification

The Storage Provider AE accepts associations from systems that are going to verify application level communication using the C-ECHO command.

The real-world activity associated with the C-ECHO request is verification activity made by an external AE that is going to verify that the network connection is operating properly and that the Storage Provider is up and running.

4.2.1.4.1.2. Accepted Presentation Contexts

The Storage Provider will accept any number of Verification SOP classes provided that the requesting application configured and granted storage access.

The Storage Provider accepts presentation contexts with multiple transfer syntaxes. The presentation contexts are differing only by their transfer syntax as well as duplicate presentation contexts.

There is no check for duplicate contexts, and these will therefore be accepted.

The Storage Provider does not limit the number of accepted presentation contexts.

In the unlikely event that the Storage Provider runs out of resources while trying to accept multiple presentation contexts, the Storage Provider will gracefully reject the association.

The Storage Provider will be able to accept the presentation contexts as specified in the next table.

Table 11: Acceptable Presentation Contexts for (Real-World) Activity – Verification as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

4.2.1.4.1.3. SOP Specific Conformance for Verification SOP Class as SCP

The Storage Provider AE provides standard conformance to the Verification service class.

4.2.1.4.1.3.1. Dataset Specific Conformance for Verification C-ECHO SCP

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 12: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete - No Failures	The C-ECHO command has been completed
Error	xxxx	<>0000	Any of the return statuses is Not Success

4.2.1.4.2. (Real-World) Activity – Image Import

4.2.1.4.2.1. Description and Sequencing of Activities

The Storage Provider AE shall accept associations from systems that are going to store instances in the data storage using the C-STORE command to store the instances on the Storage Provider disk.

The received instances are attached to patient record identified in accordance to defined identification rules.

The Storage Provider AE will issue a failure status in the following cases:

- The Storage Provider AE is unable to store the instances on the disk.
- The SOP class used for transmission does not match the instance structure and data.

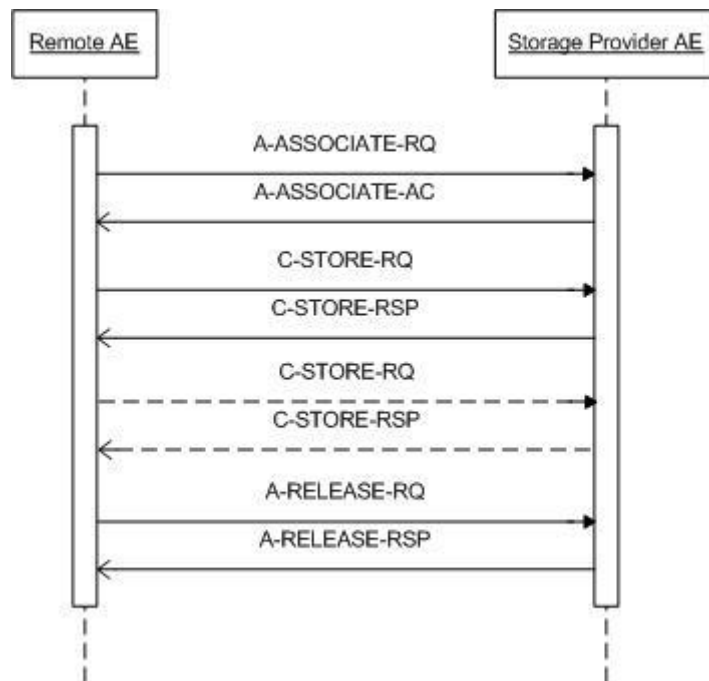


Figure 5: Sequencing of RWA Store Instances (Import)

4.2.1.4.2.2. Accepted Presentation Contexts

The Storage Provider AE will accept any number of SOP Classes (listed in the next table) that granted storage access and provided that the requesting application is configured.

Table 13: Acceptable Presentation Contexts for (Real-World) Activity – Image Import

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Hardcopy Grayscale Image Storage (Retired)	1.2.840.10008.5.1.1.29	JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		RLE Lossless	1.2.840.10008.1.2.5		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
Hardcopy Color Image Storage (Retired)	1.2.840.10008.5.1.1.30	JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70	SCP	None
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.2.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.3	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.3.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
VL Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
VL Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Comprehensive SR SOP	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Class		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Procedure Log SOP Class	1.2.840.10008.5.1.4.1.1.88.40	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

The Storage Provider accepts presentation contexts with multiple transfer syntaxes, the presentation contexts differing only by their Transfer Syntax as well as duplicate presentation contexts.

There is no check for duplicate contexts, and these will therefore be accepted.

The Storage Provider AE does not limit the number of accepted presentation contexts.

In some unlikely cases when the Storage Provider AE runs out of resources while trying to accept multiple presentation contexts, IntelliSpace PACS DCX R3.1.0 will reject the association.

4.2.1.4.2.3. SOP Specific Conformance for Storage SOP Classes

The DICOM standard does not guarantee that the Storage Provider AE applications can process the received instances.

This depends on the presence and consistency of a set of attributes in these instances. The conditions for running the Storage Provider AE applications shall be specified in separate Annexes.

The Storage Provider AE conforms to the SOP's of the Storage Service Class at Level 2 (Full) conformance.

The Storage Provider AE does not attempt any extended negotiation.

The Storage Provider AE does not discard any elements.

The Storage Provider takes no further action in case of warnings or errors in the C-STORE operations. The store response status is saved in the extended log.

Storage Provider AE has three modes for acceptance, processing and populating of received instances in local database and storage:

- Reject (Default configuration) – newly received instance will be refused if database has instance with the same SOP Instance ID.
- Keep previous – newly received instance will be stored with new generated IntelliSpace PACS DCX R3.1.0 root based UID.
- Override – newly received instance will replace previously stored instance with the same UID.

After receiving of instances, Storage Provider AE:

- Identify instance and related entities (Patient, Visit, Study, and Series) into Database. Storage Provider AE uses configurable identification rules to do search. For Patient entity it uses up to 4 attributes, Visit is identified by Admission ID, Study and Series are identified by UID. If the incoming instance identified then subset of data changed according to Database values.
- Converts text strings in the instance from defined in received instance or in Store SCU settings character set to Unicode. Following table resumes applying conversion rules in accordance to remote Store SCU configuration:

Table 14: Character set to unicode conversion table

Character Set in Received Instance	Defined for Store SCU Default Character Set	Always use manually defined character set Flag	Applied Character Set to Be Converted to Unicode
Not specified	Specified	Not applicable	Specified for StoreSCU default character set
Specified	Not applicable	Not defined	Specified in received data
Specified	Specified	Defined	Specified for Store SCU default character set

- Converts and stores two copies of received images with: JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1]): Default Transfer Syntax for Lossless JPEG Image Compression transfer syntax (1.2.840.10008.1.2.4.70) and JPEG Lossy, Process 4 : Transfer Syntax (1.2.840.10008.1.2.4.51) with defined by system administrator quality (Storage attribute).

Note: Received lossy compressed images are stored twice with original compression.

The Storage Provider AE will return a failure status of instance receiving in the following cases:

- The Storage Provider is unable to store the instances on the disk.
- The Storage Provider is unable to update the local database.
- The instance is broken in reason of any failure: hardware, disk file system, operation system or any other failure.

If received instance is not correct DICOM object or includes incorrectly coded pixel data, the instance will not be stored in archive and populated in the local database. Storage Commitment usage is recommended for assurance that the instance archived in IntelliSpace PACS DCX R3.1.0 system.

4.2.1.4.2.3.1. Dataset Specific Conformance for C-STORE-RSP

Following are the details regarding the specific conformance, including response behavior to all applicable status codes, both from an application level and communication errors.

Table 15: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful stored	The instance(s) shall be stored in IntelliSpace PACS DCX R3.1.0 database
Error	A700	Out of Resources	IntelliSpace PACS DCX R3.1.0 hasn't enough disk space to complete storage (Disk Full)
	0111	Duplicate SOP Instance	Database has instance with the same SOP Instance ID
	C000	Cannot understand	The instance(s) cannot be parsed. Storage Provider shall send a notification, log the condition, and wait next store request

4.2.2. Distribution Manager AE

Detail of this specific Application Entity is specified in this section.

4.2.2.1. SOP Classes

This Application Entity provides Standard Conformance to the following SOP Classes. Any SOP Specific behavior is documented later in the Conformance Statement.

Table 16: SOP Classes for Distribution Manager AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	Yes	No
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Yes	No
Hardcopy Grayscale Image Storage (Retired)	1.2.840.10008.5.1.1.29	Yes	No
Hardcopy Color Image Storage (Retired)	1.2.840.10008.5.1.1.30	Yes	No
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Yes	No
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	Yes	No
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	No
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	Yes	No
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	No
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	No
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	No
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	No
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	No
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	Yes	No
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Yes	No
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	No
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Yes	No
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	No
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	No
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	Yes	No
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	Yes	No
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	No
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Yes	No
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	Yes	No
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	No
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	No
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	No
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	No
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	No
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	No
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Yes	No
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	Yes	No
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Yes	No
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Yes	No
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Yes	No
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	No
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	No
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Yes	No
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Yes	No
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Yes	No
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	No
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Yes	No
VL Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Yes	No
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	No
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	No
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	No
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	No
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	No
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	No
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	No
VL Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Yes	No
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Yes	No
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	Yes	No
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Yes	No
Procedure Log SOP Class	1.2.840.10008.5.1.4.1.1.88.40	Yes	No
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	Yes	No
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Yes	No
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Yes	No
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	Yes	No
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Yes	No
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	Yes	No
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	Yes	No
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Yes	No
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	Yes	No
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	Yes	No
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	Yes	No
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	Yes	No

4.2.2.2. Association Policies

Each AE specification contains a description of the general association establishment and acceptance policies of the AE.

4.2.2.2.1. General

The Distribution Manager AE will initiate associations as a result of Forward-Rules.

The Distribution Manager AE attempts to establish an association once. If this attempt fails or if the association is unexpectedly terminated, the Distribution Manager AE tries to establish an association after defined time interval. Number of attempts is configurable.

The maximum PDU size, which can be transmitted by the Distribution Manager AE, is configurable (default value is 64 Kbytes).

Table 17: DICOM Application Context

Description	Value
Application Context Name	1.2.840.10008.3.1.1.1

4.2.2.2.2. Number of Associations

The Distribution Manager will not initiate more than one association within one instance of the Distribution Manager AE. The association may be used to issue store request.

Table 18: Number of associations as an Association Initiator for this AE

Description	Value
Maximum number of simultaneous associations	1

Table 19: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations	None

4.2.2.2.3. Asynchronous Nature

Asynchronous communication is not supported.

4.2.2.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

Table 20: DICOM Implementation Class and Version for Distribution Manager AE

Implementation Class UID	1.2.826.0.1.3680043.8.195.3.1.7230010.3
Implementation Version Name	ISP_DCX_V3_1

4.2.2.2.5. Communication Failure Handling

The behavior of the AE during communication failure is summarized in the next table.

Table 21: Communication Failure Behavior

Exception	Behavior
ARTIM Timeout-out	The reason is logged (in extended DICOM log only).
Reply Time-out	The association is released. The reason is logged (in extended DIOCM log only).
Association Time-out SCU	The association is released. The reason is logged (in extended DIOCM log only).
Association aborted	The association is released. The reason is logged (in extended DIOCM log only).

4.2.2.3. Association Initiation Policy

Distribution Manager initiates associations in the following cases: As a result of a received data collection for which there is an active Forward-Rule, the Distribution Manager will attempt to initiate an association to the target AE and transmit the instances to it.

Multiple Forward-Rules can be defined for a data collection.

4.2.2.3.1. (Real-World) Activity – Image Export

4.2.2.3.1.1. Description and Sequencing of Activities

The RWA Store Instances (Export 1) involve the storage of instances from the local Storage Provider to a remote system.

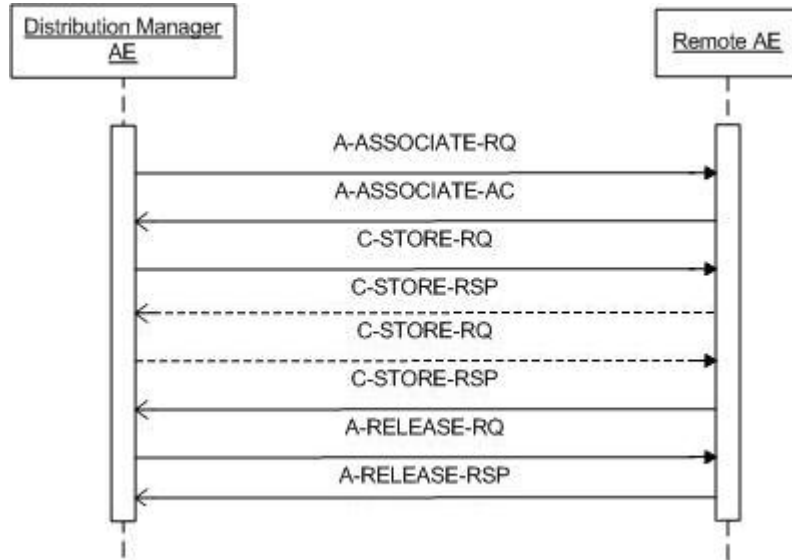


Figure 6: Sequencing of RWA - Store Instances (Export 1)

The Distribution Manager AE initiates Store Instances (Export 1) after receiving of data from an external AE by Storage Provider AE for which data there is one or more active Forward-Rules defined in the Distribution Manager control database. Forward-Rules make IntelliSpace PACS DCX R3.1.0 to act as a hub in the DICOM applications network. This mechanism enables the distribution of instances that originate from one AE to other AE's.

Once a data is rendered to Distribution Manager AE, the AE checks if there are any active Forward-Rules for calling AE Title, called AE Title or received objects.

For each Forward-Rule that the Distribution Manager AE found, it initiates an association with the target AE stated in that rule and transmits the instance to it.

The associations will be initiated and instances are sent within the association. The sending process will be repeated for each target AE. If several Forward-Rules direct to Distribution Manager to send one data collection to one target AE, the collection will be sent to the target AE once. The Distribution Manager AE attempts to forward the instance once. If this attempt fails, the Distribution Manager AE tries to forward the next instance.

The Distribution Manager AE retries sending after configurable time interval if sending failed in previous attempt.

The Distribution Manager AE stops sending retries when number of sending failures reaches defined number of attempts.

4.2.2.3.1.2. Proposed Presentation Contexts

Each time an association is initiated, the association initiator proposes one Presentation Context to be used on that association. The Presentation Contexts proposed by the Distribution Manager AE for export instances are defined in next table.

Table 22: Proposed Presentation Contexts for (Real-World) Activity – Image Export

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Hardcopy Grayscale Image Storage (Retired)	1.2.840.10008.5.1.1.29	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		RLE Lossless	1.2.840.10008.1.2.5		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Hardcopy Color Image Storage (Retired)	1.2.840.10008.5.1.1.30	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Mammography X-Ray Image Storage - Pres.	1.2.840.10008.5.1.4.1.1.1.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
SOP		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.3.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Ultrasound Multi-frame	1.2.840.10008.5.1.4.1.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Image Storage (Retired)		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Standalone Overlay	1.2.840.10008.5.1.4.1.1.8	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Storage SOP Class (Retired)		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
VL Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
VL Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Procedure Log SOP Class	1.2.840.10008.5.1.4.1.1.88.40	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

4.2.2.3.1.3. SOP Specific Conformance for Storage SOP Classes

Just before to send instance to the Store SCP, the Distribution Manager:

- Converts text strings in the instances from Unicode to define for Store SCP character set. Outgoing text strings conversion rules are configurable.
- Converts Pixel Data and Overlay binary data to format which corresponds to be accepted by remote Store SCP Transfer Syntax.

Important remarks about the exported instances:

- The Distribution Manager does not attempt any extended negotiation.
- The Distribution Manager continues sending the remaining instances after unsuccessful C-STORE responses.
- The Distribution Manager takes no further action in case of warnings or errors in the C-STORE operations during transferring attempt.
- Transfer syntaxes which the Distribution Manager AE proposes to send the instances are configured for each destination AE.

4.2.2.3.1.3.1. Dataset Specific Conformance for C-STORE-RQ

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors.

Table 23: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful stored	Continues with next store until completed there after the store job is marked as completed and the association is released.

Service Status	Error Code	Further Meaning	Behavior
Failure	A7xx	Refused: Out of Resources	Continues with next store until end of data. The job status is reported to user (in extended DICOM log only).
	A9xx	Error: Data Set does not match SOP Class	Continues with next store until end of data. The job status is reported to user (in extended DICOM log only).
	Cxxx	Error: cannot understand	Continues with next store until end of data. The job status is reported to user (in extended DICOM log only)
Warning	B000	Coercion of Data Elements	Continues with next store until end of data. The job status is reported to user (in extended DICOM log only).
	B006	Elements Discarded	Continues with next store until end of data. The job status is reported to user (in extended DICOM log only).
	B007	Data Set does not match SOP Class	Continues with next store until end of data. The job status is reported to user (in extended DICOM log only)

4.2.2.4. Association Acceptance Policy

Distribution Manager never accepts an association

4.2.3. Archive-Manager AE

Detail of this specific Application Entity is specified in this section.

4.2.3.1. SOP Classes

After the instance is received by the Storage Provider AE and stored into database it is available for later queries and retrieving. IntelliSpace PACS DCX R3.1.0 uses defined cleanup policies for performing automatic maintenance task related to disk space management. This mechanism enables the PACS to run over long periods causing no administrative burden.

It allows the operator also to view, analyze and process the images stored in the database, to create and store key images.

It allows a remote system to query its local database and to retrieve instances for it.

It allows a user to send local instances to remote device, to query a remote system and to retrieve instances from it.

Depending on configuration, the Archive-Manager may be accessible for remote AE under several AE Titles simultaneously, each representing to one Application Entity.

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

Any SOP specific behavior is documented later in the Conformance Statement in the applicable SOP specific conformance section

Table 24: SOP Classes for Archive-Manager AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	No	Yes
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Yes	No
Hardcopy Grayscale Image Storage (Retired)	1.2.840.10008.5.1.1.29	Yes	No
Hardcopy Color Image Storage (Retired)	1.2.840.10008.5.1.1.30	Yes	No
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Yes	No
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	Yes	No
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	No
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	Yes	No
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	No
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	No
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	No
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	No
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	Yes	No
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Yes	No
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	No
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Yes	No
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	No
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	No
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	Yes	No
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	Yes	No
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	No
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Yes	No
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	No
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	No
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	No
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	No
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	No
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	No
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Yes	No
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	Yes	No
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	No
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Yes	No
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Yes	No
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Yes	No
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	No
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	No
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Yes	No
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Yes	No
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Yes	No
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	No
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67		
VL Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Yes	No
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	No
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	No
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	No
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	No
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	No
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	No
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	No
VL Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Yes	No
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	Yes	No
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Yes	No
Procedure Log SOP Class	1.2.840.10008.5.1.4.1.1.88.40	Yes	No
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	Yes	No
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Yes	No
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Yes	No
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	Yes	No
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Yes	No
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	Yes	No
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	Yes	No
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Yes	No
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	Yes	No
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	Yes	No
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	Yes	No
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	Yes	No
Patient Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Yes	Yes
Patient Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Yes	Yes
Study Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes

4.2.3.2. Association Policies

Each AE specification contains a description of the general association establishment and acceptance policies of the AE.

4.2.3.2.1. General

The Archive-Manager AE will accept associations to verify the connectivity and for query or move requests.

In case of move request the Archive-Manager AE will initiate association to copy the instances to the remote AE.

The Archive Manager AE will initiate associations to verify the connectivity, to send local instances and in operator query or retrieve request to remote AE.

The Archive-Manager AE attempts to establish an association once. If this attempt fails or if the association is unexpectedly terminated, the Archive-Manager AE reports an error in its extended log files and stops the related activity.

The maximum PDU size, which can be transmitted by the Archive-Manager AE, is configurable (default value is 64kBytes).

Table 25: DICOM Application Context

Description	Value
Application Context Name	1.2.840.10008.3.1.1.1

4.2.3.2.2. Number of Associations

Number of associations simultaneously accepted and initiated by the Archive Manager will limit free resources of the operation system. The associations may be used for verification, sending local instances, search and retrieve remote instances and to issue retrieve requests. Furthermore, Archive-Manager may initiate one association for each remote retrieve request, executed by Archive-Manager as a C-MOVE operation. These associations are used to issue the C-STORE sub-operations implied by the retrieve requests. The number of simultaneous store associations for this retrieve purpose is principally not limited.

Table 26: Number of associations as an Association Initiator for this AE

Description	Value
Maximum number of initiated associations within received C-MOVE request	1 (per C-MOVE request)
Maximum number of initiated associations for Verification, Store and for Query/Retrieve Requests	Limits by the operation system

The Archive Manager creates new process to handle C-ECHO, C-FIND or C-MOVE command.

The Archive-Manager manages an association resources pool. Each incoming association is assigned to one of the pool members. The size of this pool is configurable and the maximum size is limited only by the underlying operating system and by hardware limits. When the maximum number of associations is reached, Archive-Manager will reject associations.

Table 27: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations accepted	Limits by the operation system

Nevertheless, the number of simultaneous associations shall be limited by the available resources (CPU, memory, disk space).

4.2.3.2.3. Asynchronous Nature

Asynchronous communication is not supported.

4.2.3.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

Table 28: DICOM Implementation Class and Version for Archive-Manager AE

Implementation Class UID	1.2.826.0.1.3680043.8.195.3.1.7230010.3
Implementation Version Name	ISP_DCX_V3_1

4.2.3.2.5. Communication Failure Handling

Table 29: DICOM command communication failure behavior

Exception	Behavior
ARTIM Time-out	The DICOM operation fails in case of association setup. The reason is reported in extended log file.
Reply Time-out	The DICOM operation fails and the association is aborted. The reason is reported in extended log file.
Association Time-out SCU	The association is released.
Association aborted	The operation fails. The reason is reported in extended log file.

4.2.3.3. Association Initiation Policy

Archive-Manager AE shall initiate associations for the following purposes:

- To send local instances within processing of C-MOVE requests.
- To allow operator to send local instances to remote device.
- To allow operator to verify connectivity with remote device.
- To allow operator to query remote database.
- To allow operator to retrieve instances form remote database.

4.2.3.3.1. (Real-World) Activity – Verification as SCU

4.2.3.3.1.1. Description and Sequencing of Activities

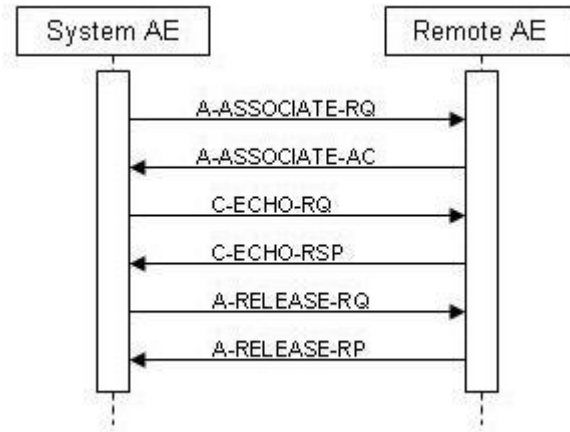


Figure 7: Sequencing of RWA Verification as SCU

The Archive Manager AE initiates Verification when user checks connectivity with remote Store or Query/Retrieve SCP service using dedicated button in Administration Utility of the IntelliSpace PACS DCX R3.1.0.

4.2.3.3.1.2. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 30: Proposed Presentation Contexts for (Real-World) Activity – Verification as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.3.3.1.3. SOP Specific Conformance for Verification SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.3.1.3.1. Dataset Specific Conformance for Verification C-ECHO SCU

Not applicable.

4.2.3.3.2. (Real-World) Activity – FIND as SCU

4.2.3.3.2.1. Description and Sequencing of Activities

The Archive-Manager AE initiates association to remote system to perform C-FIND operation when user selects one or more remote Data Location from a preconfigured list and performs search by the Apply/Refresh button.

A single attempt will be made to query the Remote AE. If the query fails, no retry will be performed for any reason.

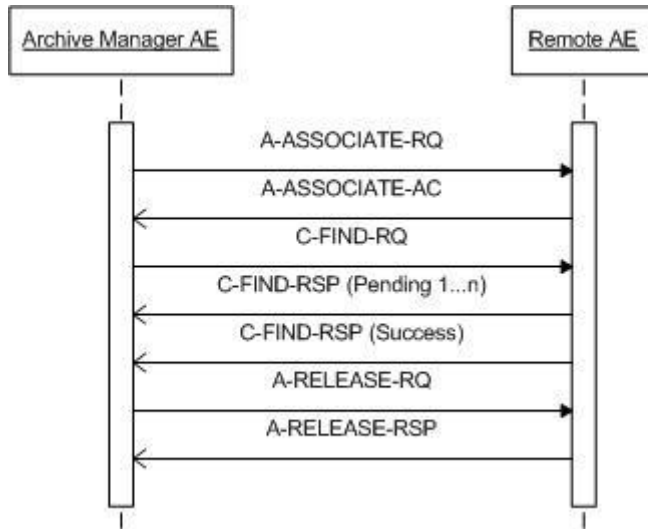


Figure 8: Sequencing of RWA Query Remote Instances

4.2.3.3.2.2. Proposed Presentation Contexts

Each time an association is initiated, the association initiator proposes one Presentation Context to be used on that association. The Presentation Contexts proposed by the Archive Manager AE to query instances are defined in following table.

Table 31: Proposed Presentation Contexts for (Real-World) Activity – FIND as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Study Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

4.2.3.3.2.3. SOP Specific Conformance for Patient Root QR Information Model - FIND SOP Class

The Archive-Manager AE provides standard conformance to the Query/Retrieve service class. Relational queries are not supported. On selecting a patient, the Archive-Manager AE performs automatic query to obtain study list of the patient. On selecting a study the Archive-Manager AE performs automatic query to obtain series list of the study. Automatic queries are executed in separate association and on corresponding level.

The Archive-Manager AE uses specified for remote Query/Retrieve SCP service for strings in C-FIND request.

The Archive-Manager AE converts incoming text strings in the C-FIND response to the Unicode, To determine which encoding applied to the received response the Archive-Manager AE uses value in Character Set Tag (0008,0005).

4.2.3.3.2.3.1. Dataset Specific Conformance for Patient Root QR Information Model - FIND SOP Class C-FIND-SCU

The following keys for Patient Root Query/Retrieve Information Model are supported:

Table 32: Requested Query Keys for Patient Root Information Model

Patient Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Q/R Patient level				
Number of Patient Related Instances	0020,1204	IS		O
Number of Patient Related Series	0020,1202	IS		O
Number of Patient Related Studies	0020,1200	IS		O
Other Patient IDs	0010,1000	LO	Single Value	O
Patient ID	0010,0020	LO	Single Value, Wild Card	U
Patient's Birth Date	0010,0030	DA	Range, Single Value	O
Patient's Name	0010,0010	PN	Single Value, Wild Card	R, Case-insensitive
Patient's Sex	0010,0040	CS	Single Value	O
Q/R Study level				
Accession Number	0008,0050	SH	Single Value	R
Modalities in Study	0008,0061	CS	Single Value	O, SV for each value
Name of Physician(s) Reading Study	0008,1060	PN	Single Value, Wild Card	O, Case-insensitive
Number of Study Related Instances	0020,1208	IS		O
Number of Study Related Series	0020,1206	IS		O
Referring Physician's Name	0008,0090	PN	Single Value, Wild Card	O, Case-insensitive
Study Date	0008,0020	DA	Range, Single Value	R
Study Description	0008,1030	LO	Wild Card	O
Study ID	0020,0010	SH	Single Value	R
Study Instance UID	0020,000D	UI	Single Value	U
Study Time	0008,0030	TM	Range, Single Value	R
Q/R Series level				
Body Part Examined	0018,0015	CS	Single Value	O
Modality	0008,0060	CS	Single Value	R
Number of Series Related Instances	0020,1209	IS		O
Protocol Name	0018,1030	LO	Single Value, Wild Card	O
Series Description	0008,103E	LO	Single Value, Wild Card	O
Series Instance UID	0020,000E	UI	Single Value	U
Series Number	0020,0011	IS	Single Value	R

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 33: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	The query results are displayed. The association is released.
Refused	A700	Out of Resources – Unable to calculate number of matches	No query results are displayed. The association is released. The reason is logged.
Failed	A900	Identifier does not match SOP class	No query results are displayed. The association is released. The reason is logged.
	C000	Unable to process	No query results are displayed. The association is released. The reason is logged.
Cancel	FE00	Matching terminated due to Cancel Request	No query results are displayed. The association is released. The reason is logged.
Pending	FF00	Matches are continuing – Current match is supplied and any optional keys were supported in the same manner as required keys	The Query Images job continues.

Service Status	Error Code	Further Meaning	Behavior
	FF01	Matches are continuing – Warning that one or more optional keys were not supported for existence and/or matching for this identifier	The Query Images job continues.

Table 34: DICOM command communication failure behavior

Exception	Behavior
ARTIM time-out	The query images job fails and the association is aborted. The reason is logged and reported to the user.
Association time-out SCU	The association is released. The reason is logged and reported to the user.
Association aborted	The query images job fails and the association is aborted. The reason is logged and reported to the user.

4.2.3.3.2.4. SOP Specific Conformance for Study Root QR Information Model - FIND SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.3.2.4.1. Dataset Specific Conformance for Study Root QR Information Model - FIND SOP Class C-FIND-SCU

Table 35: Requested Query Keys for Study Root Information Model

Study Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Query/Retrieve Level	0008,0052	CS	Single Value	R
Specific Character Set	0008,0005	CS	Single Value	R
Q/R Study level				
Accession Number	0008,0050	SH	Single Value, Wild Card	R
Modalities in Study	0008,0061	CS	Single Value	O, SV for each value
Name of Physician(s) Reading Study	0008,1060	PN	Single Value, Wild Card	O
Number of Patient Related Instances	0020,1204	IS		O
Number of Patient Related Series	0020,1202	IS		O
Number of Patient Related Studies	0020,1200	IS		O
Number of Study Related Instances	0020,1208	IS		O
Number of Study Related Series	0020,1206	IS		O
Patient ID	0010,0020	LO	Single Value	R
Patient's Name	0010,0010	PN	Single Value, Wild Card	R, case insensitive
Patient's Sex	0010,0040	CS	Single Value	O
Referring Physician's Name	0008,0090	PN	Single Value, Wild Card	O
Study Date	0008,0020	DA	Range, Single Value	R
Study Description	0008,1030	LO	Wild Card	O
Study ID	0020,0010	SH	Single Value	U
Study Instance UID	0020,000D	UI	Single Value	U
Study Time	0008,0030	TM	Range, Single Value	R
Q/R Series level				
Body Part Examined	0018,0015	CS	Single Value	O
Modality	0008,0060	CS	Single Value	R
Number of Series Related Instances	0020,1209	IS		O
Protocol Name	0018,1030	LO	Single Value, Wild Card	O
Series Description	0008,103E	LO	Single Value, Wild Card	O
Series Instance UID	0020,000E	UI	Single Value	U
Series Number	0020,0011	IS	Single Value	R

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 36: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete.	The query results are displayed. The association is released.
Refused	A700	Out of Resources - Unable to calculate number of matches.	
Failed	A900	Identifier does not match SOP class.	
	C000	Unable to process.	
Cancel	FE00	Matching terminated due to Cancel request.	
Pending	FF00	Matching is continuing - Current march is supplied and any optional keys were supported in the same manner as required keys.	
	FF01	Marches are continuing - Warning that one or more optional keys were not supported for existence and/or matching for this identifier.	

Table 37: DICOM command communication failure behavior

Exception	Behavior
ARTIM time-out	The query images job fails and the association is aborted. The reason is logged and reported to the user.
Association time-out SCU	The association is released. The reason is logged and reported to the user.
Association aborted	The query images job fails and the association is aborted. The reason is logged and reported to the user.

4.2.3.3.3. (Real-World) Activity – MOVE as SCU

4.2.3.3.3.1. Description and Sequencing of Activities

The Archive-Manager AE will establish associations with Remote AE to query the Remote AE to send remotely located instances to local Storage Provider AE using the C-MOVE command.

The Real World activity associated with the C-MOVE command is retrieval of instances from the Remote AE to a Storage Provider AE using a C-STORE command.

For the entity (patient, study or series) selected from the user interface to be retrieved, a single attempt will be made to retrieve it from the selected remote AE. If the retrieve fails, no retry will be performed for any reason.

After RWA Retrieve Remote Instances Remote AE requested to send selected instances to Storage Provider AE, Archive Manager AE will receive information about result of store operation.

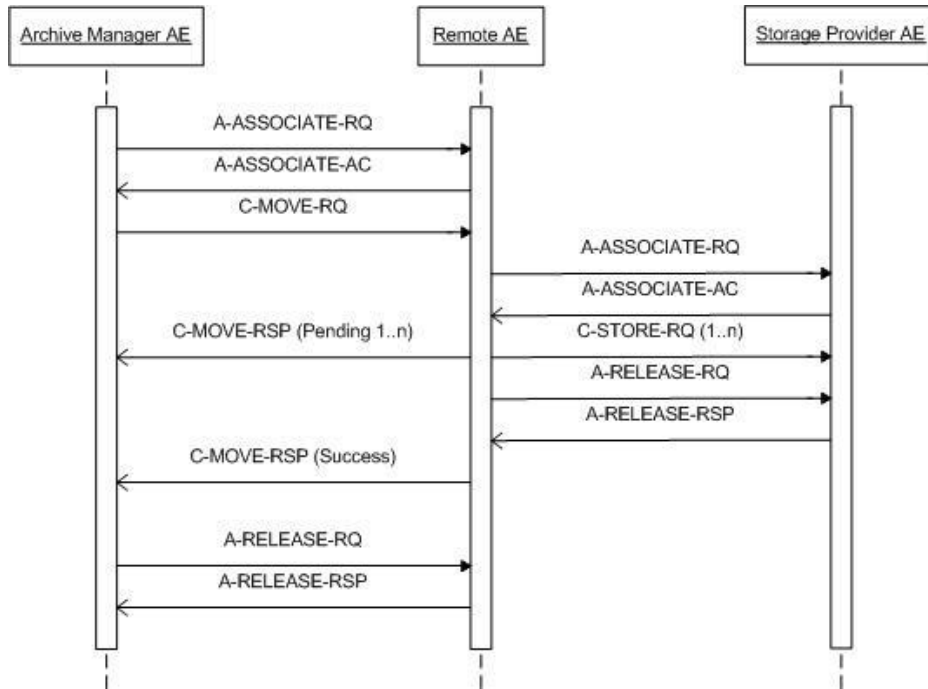


Figure 9: Sequencing of RWA Retrieve Remote Instances

4.2.3.3.2. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 38: Proposed Presentation Contexts for (Real-World) Activity – MOVE as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Study Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

4.2.3.3.3.3. SOP Specific Conformance for Patient Root QR Information Model - MOVE SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

The Archive-Manager AE provides standard conformance to the Query/Retrieve service class user.

4.2.3.3.3.3.1. Dataset Specific Conformance for Patient Root QR Information Model - MOVE SOP Class C-MOVE-SCU

Table 39: Identifiers for MOVE Patient Root Information Model as SCU

Patient Root Information Model			
Attribute Name	Tag	VR	Comment
Query/Retrieve Level	0008,0052	CS	R

Specific Character Set	0008,0005	CS	
Q/R Study level			
Patient ID	0010,0020	LO	
Study Instance UID	0020,000D	UI	U

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 40: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete – No failures	The Retrieve Images job is marked as Completed. The association is released.
Refused	A701	Out of resources – Unable to calculate number of matches	The Retrieve Images job is marked as Failed. The association is released. The reason is logged.
	A702	Out of resources – Unable to perform sub-operations	The Retrieve Images job is marked as Failed. The association is released. The reason is logged.
	A801	Destination Unknown	The Retrieve Images job is marked as Failed. The association is released. The reason is logged.
Failed	A900	Identifier Does Not Match SOP Class	The Retrieve Images job is marked as Failed. The association is released. The reason is logged
	C000	Unable to Process	The Retrieve Images job is marked as Failed. The association is released. The reason is logged.
Warning	B000	Sub-operation complete - One or more failures	Message by transfer result - 0 Success, x Warn, 0 Fail
Cancel	FE00	Sub-operations terminated due to Cancel indication	The Retrieve Images job is marked as Failed. The association is released. The reason is logged.
Pending	FF00	Sub-operations are continuing	The retrieve image continues.

Table 41: DICOM command communication failure behavior

Exception	Behavior
ARTIM time-out	The retrieve images job fails and the association is aborted. The reason is logged.
Association time-out SCU	The association is released.
Association aborted	The retrieve images job fails. The reason is logged.

4.2.3.3.3.4. SOP Specific Conformance for Study Root QR Information Model - MOVE SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.3.3.4.1. Dataset Specific Conformance for Study Root QR Information Model - MOVE SOP Class C-MOVE-SCU

Table 42: Identifiers for MOVE Study Root Information Model as SCU

Study Root Information Model				
Attribute Name	Tag	VR	Comment	
Query/Retrieve Level	0008,0052	CS	R	
Specific Character Set	0008,0005	CS		
Q/R Study level				
Patient ID	0010,0020	LO		
Study Instance UID	0020,000D	UI	U	

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 43: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete - No failures	The retrieve image job is marked as completed. The association is released
Refused	A701	Out of resources - Unable to calculate number of matches	The retrieve image job is marked as failed. The association is released. The reason is logged.
	A702	Out of resources - Unable to perform sub-operations	The retrieve image job is marked as failed. The association is released. The reason is logged.
	A801	Destination Unknown	The retrieve image job is marked as failed. The association is released. The reason is logged.
Failed	A900	Identifier Does Not Match SOP Class	The retrieve image job is marked as failed. The association is released. The reason is logged.
	C000	Unable to Process	The retrieve image job is marked as failed. The association is released. The reason is logged.
Warning	B000	Sub-operations complete - One of more failures	Message by transfer result - 0 Success, x Warn, 0 Fail.
Cancel	FE00	Sub-operations terminated due to Cancel indication	The retrieve image job is marked as failed. The association is released. The reason is logged.
Pending	FF00	Sub-operations are continuing	The retrieve image job continues.

Table 44: DICOM command communication failure behavior

Exception	Behavior
ARTIM time out	The retrieve image job fails and the association is aborted. The reason is logged
Association time-out SCU	The association is released.
Association aborted	The retrieve image job fails. The reason is logged.

4.2.3.3.4. (Real-World) Activity – Image Export

4.2.3.3.4.1. Description and Sequencing of Activities

The RWA Store Instances involves the storage of instances from the local IntelliSpace PACS DCX R3.1.0 database to a remote system.

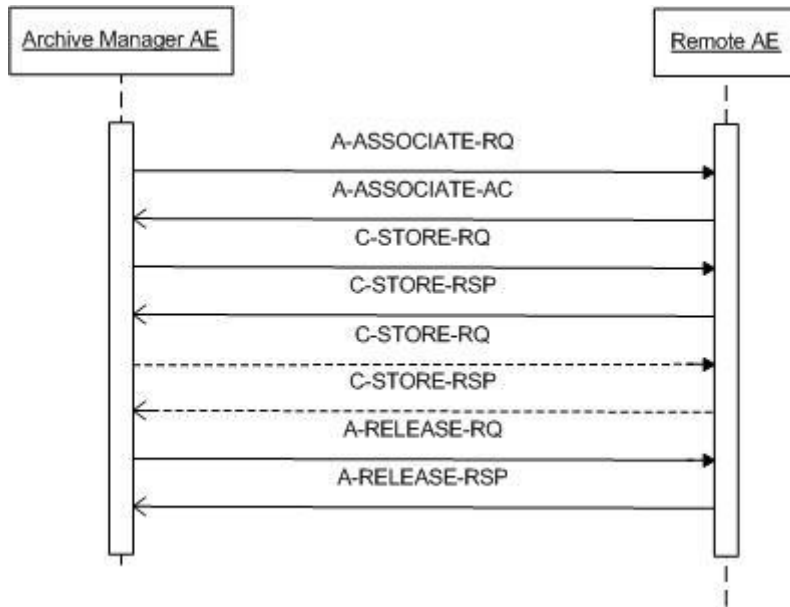


Figure 10: Sequencing of RWA Store Instances

The Archive-Manager AE initiates Store Instances, when it receives a C-MOVE request or when operator initiates export of the instances. For each received move request or initiated export Archive-Manager AE initiates an association to the requested destination AE Title, sends C-STORE requests and receives associated C-STORE responses. The association is released when all instances, i.e. images, presentation states, structured reports and other objects as selected by the retrieve request identifier or operator, have been attempted to transmit.

Archive-Manager AE is able to simultaneously handle C-MOVE requests.

4.2.3.3.4.2. Proposed Presentation Contexts

Each time an association is initiated, the association initiator proposes a number of Presentation Contexts which are configured for the destination node. The Presentation Contexts proposed by the Archive-Manager AE for export instances are defined in the following table

Table 45: Proposed Presentation Contexts for (Real-World) Activity – Image Export

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70	SCU	None
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.3.1	JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Hardcopy Color Image Storage (Retired)	1.2.840.10008.5.1.1.30	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Hardcopy Grayscale Image Storage (Retired)	1.2.840.10008.5.1.1.29	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51 & 4)		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Procedure Log SOP Class	1.2.840.10008.5.1.4.1.1.88.40	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.1.27	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
VL Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
VL Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

4.2.3.3.4.3. SOP Specific Conformance for Storage SOP Classes

Just before to send instance to the Store SCP, the Archive-Manager:

- Converts text strings in the instances from Unicode to define for Store SCP character set.
- Convert Pixel Data and Overlay binary data to format which corresponds to accepted by remote Store SCP Transfer Syntax

Important remarks about the exported instances:

- The Archive-Manager AE does not attempt any extended negotiation.
- The Archive-Manager AE continues to send remaining instances after response of unsuccessful C-STORE.
- In case that the Archive-Manager AE receives an unsuccessful store response status, a move response with “unsuccessful” status is sent to the retrieve or export requestor. The store response status is saved in the extended log.
- The Archive-Manager AE takes no further action in case of warnings or errors in the C-STORE operations.

4.2.3.3.4.3.1. Dataset Specific Conformance for C-STORE-RQ

The Archive-Manager AE takes no further action in case of warnings or errors in the C-STORE operations.

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors.

Table 46: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful stored	Continues with next store until completed thereafter the store job is marked as completed and the association is released.
Failure	A7xx	Refused: Out of Resources	The store job fails. The reason is reported in extended log file. Continues with next store.
	A9xx	Error: Data Set does not match SOP Class	The store job fails. The reason is reported in extended log file. Continues with next store.
	Cxxx	Error: cannot understand	The store job fails. The reason is reported in extended log file. Continues with next store.
Warning	B000	Coercion of Data Elements	Continues with next store until completed thereafter the store job is marked as completed and the association is released.
	B006	Elements Discarded	Continues with next store until completed thereafter the store job is marked as completed and the association is released.
	B007	Data Set does not match SOP Class	Continues with next store until completed thereafter the store job is marked as completed and the association is released.

Table 47: DICOM Command Communication Failure Behavior

Exception	Behavior
ARTIM Time-out	The store job fails in case of association setup. The reason is reported in extended log file.
Reply Time-out	The store job fails and the association is aborted. The reason is reported in extended log file.
Association Time-out SCU	The association is released.
Association aborted	The store job fails. The reason is reported in extended log file.

4.2.3.4. Association Acceptance Policy

Archive-Manager AE shall accept associations for the following purposes:

- To allow remote applications to verify application level communication.
- To allow remote application to query the IntelliSpace PACS DCX R3.1.0 database.
- To allow remote applications to retrieve instances from IntelliSpace PACS DCX R3.1.0 database.

The Archive-Manager AE will acknowledge an association from and external AE if the following conditions are met:

- The association request application context is DICOM.
- The requesting AE title is configured in the Archive-Manager AE control database.
- The requesting AE network node matches the configured node.
- The responding AE title is the association request matches the one of defined Archive-Manager AE titles.

4.2.3.4.1. (Real-World) Activity – Verification as SCP

4.2.3.4.1.1. Description and Sequencing of Activities

The Archive-Manager AE shall accept associations from systems that are going to verify the application level communication using the C-ECHO command.

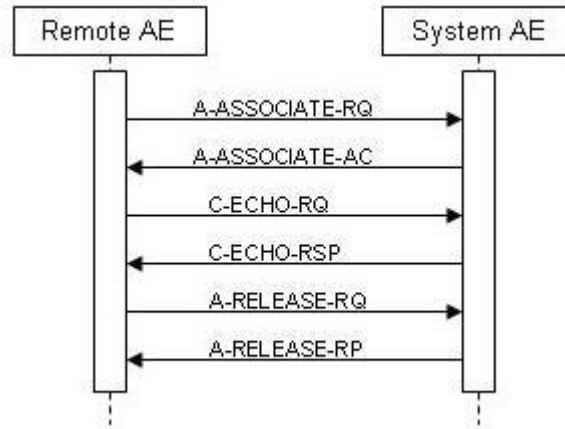


Figure 11: Sequencing of RWA request verification

The real-world activity associated with the C-ECHO request is verification activity made by an external AE that is going to verify that the network connection is operating properly and the Archive-Manager is up and running.

4.2.3.4.1.2. Accepted Presentation Contexts

The Archive-Manager will accept any number of Verification SOP classes, provided that the requesting application configured and granted query/retrieve access. The Archive-Manager shall be able to accept the presentation contexts as specified in the next table.

Table 48: Acceptable Presentation Contexts for (Real-World) Activity – Verification as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

The Archive-Manager AE accepts presentation contexts with multiple transfer syntaxes, presentation contexts differing only by their transfer syntax as well as duplicate presentation contexts.

There is no check for duplicate contexts, and these will therefore be accepted.

The Archive-Manager does not limit the number of accepted presentation contexts.

In some unlikely cases when the Archive-Manager runs out of resources while trying to accept multiple presentation contexts, the Archive-Manager will reject the association.

4.2.3.4.1.3. SOP Specific Conformance for Verification SOP Class as SCP

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

The Archive Manager AE provides standard conformance to the Verification service class.

4.2.3.4.1.3.1. Dataset Specific Conformance for Verification C-ECHO SCP

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 49: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful verification	The verification was successful

4.2.3.4.2. (Real-World) Activity – FIND as SCP

4.2.3.4.2.1. Description and Sequencing of Activities

The Archive-Manager AE shall accept associations from systems of making queries using the C-FIND command. The real-world activity associated with C-FIND requests is the query operations made by an external AE that are going to query the Archive-Manager to check the existence of instances

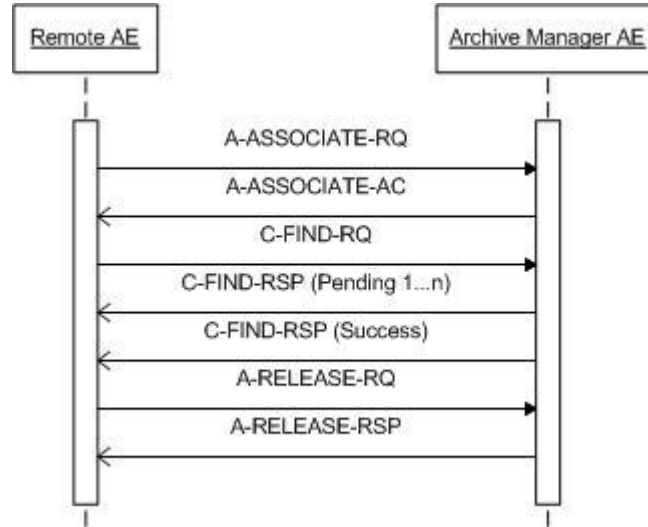


Figure 12: Sequencing of RWA - Query Local Instances

4.2.3.4.2.2. Accepted Presentation Contexts

The Archive-Manager AE shall accept all contexts in the intersection of the proposed and acceptable Presentation Contexts. This means that the Archive-Manager accepts presentation contexts with multiple transfer syntaxes, presentation contexts differing only by their transfer syntax as well as duplicate presentation contexts. There is no check for duplicate contexts, and these will therefore be accepted. The Archive-Manager does not limit the number of accepted presentation contexts. In some unlikely cases when the Archive-Manager runs out of resources while trying to accept multiple presentation contexts, the Archive-Manager will reject the association. The Archive-Manager AE shall be able to accept the presentation contexts as specified in the next table.

Table 50: Acceptable Presentation Contexts for (Real-World) Activity – FIND as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
Patient/Study Only QR Info. Model - FIND SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
Study Root QR Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

The Archive-Manager AE provides standard conformance to the Query/Retrieve service class. Relational queries are not supported. The Archive-Manager AE shall handle simultaneous C-FIND requests.

The Archive-Manager AE converts incoming text strings in the received conditions from defined in received request or in Query/Retrieve SCU settings character set to Unicode, finds in the database to list of existing patients, studies, series or instances (in accordance to received query level), converts outgoing text strings for search responses from Unicode to necessary Character Set

and sends responses back to Query/Retrieve SCU. The number of responses may be limited by Configuration of Query/Retrieve SCP service.

The following table resumes applying conversion rules in accordance to remote Query/Retrieve SCU configuration:

Table 51: Conversion rules table

Character Set in Received Find Request	Defined for Q/R SCU default character set	Always use manually defined character set	Applied character set to be converted to/from Unicode
Not specified	Specified	Not applicable	Specified for remote store SCU default character set
Specified	Not applicable	Not defined	Specified in received data
Specified	Specified	Defined	Specified for remote store SCU default character set

The Archive Manager database distinguishes two patients in accordance to defined patient identification rules (for example, patient with the same Patient ID but different Patient's Name or Patient's Birth Data). However, the DICOM Query/Retrieve service class has Patient ID as a unique key at Patient level, and thus two patients with the same Patient ID cannot be distinguished via a standard DICOM query.

4.2.3.4.2.3. SOP Specific Conformance for Patient Root QR Information Model - FIND SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.4.2.3.1. Dataset Specific Conformance for Patient Root QR Information Model - FIND SOP Class C-FIND-SCP

Matching key attributes may belong to one from the following types: Required (R), Optional (O), or Unique (U).

Table 52: Supported Query Keys for Patient Root Information Model

Patient Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Instance Availability	0008,0056	CS		O
Query/Retrieve Level	0008,0052	CS	Single Value	R
Specific Character Set	0008,0005	CS		O
Q/R Patient level				
Number of Patient Related Instances	0020,1204	IS		O
Number of Patient Related Series	0020,1202	IS		O
Number of Patient Related Studies	0020,1200	IS		O
Other Patient IDs	0010,1000	LO	Single Value	O
Other Patient Names	0010,1001	PN	Single Value	O
Patient Comments	0010,4000	LT		O
Patient ID	0010,0020	LO		U
Patient's Birth Date	0010,0030	DA	Range, Single Value	O
Patient's Birth Time	0010,0032	TM	Range, Single Value	O
Patient's Name	0010,0010	PN	Single Value, Wild Card	R, Case-insensitive
Patient's Sex	0010,0040	CS	Single Value	O
Q/R Study level				
Accession Number	0008,0050	SH	Single Value, Wild Card	R
Additional Patient History	0010,21B0	LT	Single Value, Wild Card	O
Modalities in Study	0008,0061	CS		R
Number of Study Related Instances	0020,1208	IS		O
Number of Study Related Series	0020,1206	IS		O
Patient ID	0010,0020	LO		O

Patient's Age	0010,1010	AS		O
Patient's Size	0010,1020	DS	Single Value	O
Referring Physician's Name	0008,0090	PN		O, Case-insensitive
Study Date	0008,0020	DA	Range, Single Value	R
Study Description	0008,1030	LO		O
Study ID	0020,0010	SH		R
Study Instance UID	0020,000D	UI		U
Study Time	0008,0030	TM	Range, Single Value	R
Q/R Series level				
Body Part Examined	0018,0015	CS	Single Value	O
Modality	0008,0060	CS		R
Number of Series Related Instances	0020,1209	IS		O
Protocol Name	0018,1030	LO		O
Series Date	0008,0021	DA		R
Series Description	0008,103E	LO		O
Series Instance UID	0020,000E	UI	Single value	U
Series Number	0020,0011	IS		O
Series Time	0008,0031	TM		R
Q/R Image level				
Instance Creation Date	0008,0012	DA		O
Instance Creation Time	0008,0013	TM		O
Instance Number	0020,0013	IS		R
Patient ID	0010,0020	LO		R
Series Instance UID	0020,000E	UI		R
SOP Class UID	0008,0016	UI		O
SOP Instance UID	0008,0018	UI	Single Value	U
Study Instance UID	0020,000D	UI		R

When querying optional keys the Archive-Manager AE will respond successfully for available keys if queried per universal matching, otherwise it will respond with warning.

Note that when querying optional keys with non-universal matching the Archive-Manager AE will return information using universal matching for those keys.

The behavior of the response status and exception handling of the Archive-Manager AE is describes in the next tables.

Table 53: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	The C-FIND request handling is completed, no more C-FIND responses are sent.
Failed	C000	Unable to process	The C-FIND request cannot be parsed. The reason is reported in extended log file.
Cancel	FE00	Matching terminated due to Cancel request	The C-FIND request is canceled, no more C-FIND responses are sent.
Pending	FF00	Matches are continuing - Current match is supplied and any optional keys where supported in the same manner as required keys.	The C-FIND responses are continuing.
	FF01	Matches are continuing - Warning that one or more optional keys were not supported for existence and/or matching for this identifier.	The C-FIND responses are continuing.

The DICOM standard does not guarantee that the Archive-Manager AE application can process the received requests. This depends on the presence and consistency of a set of attributes in these requests.

4.2.3.4.2.4. SOP Specific Conformance for Patient/Study Only QR Info. Model - FIND SOP Class (Retired)

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.4.2.4.1. Dataset Specific Conformance for Patient/Study Only QR Info. Model - FIND SOP Class C-FIND-SCP

Table 54: Supported Query Keys for Patient/Study Only Information Model

Patient/Study Only Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Instance Availability	0008,0056	CS		O
Query/Retrieve Level	0008,0052	CS		R
Specific Character Set	0008,0005	CS		O
Q/R Patient level				
Number of Patient Related Instances	0020,1204	IS		O
Number of Patient Related Series	0020,1202	IS		O
Number of Patient Related Studies	0020,1200	IS		O
Other Patient IDs	0010,1000	LO		O
Other Patient Names	0010,1001	PN		O
Patient Comments	0010,4000	LT		O
Patient ID	0010,0020	LO		U
Patient's Birth Date	0010,0030	DA		O
Patient's Birth Time	0010,0032	TM		O
Patient's Name	0010,0010	PN		R
Patient's Sex	0010,0040	CS		O
Q/R Study level				
Accession Number	0008,0050	SH		R
Modalities in Study	0008,0061	CS		R
Name of Physician(s) Reading Study	0008,1060	PN		O
Number of Study Related Instances	0020,1208	IS		O
Number of Study Related Series	0020,1206	IS		O
Patient ID	0010,0020	LO		R
Patient's Age	0010,1010	AS		O
Patient's Size	0010,1020	DS		O
Patient's Weight	0010,1030	DS		O
Referring Physician's Name	0008,0090	PN		O
Study Date	0008,0020	DA		R
Study Description	0008,1030	LO		O
Study ID	0020,0010	SH		R
Study Instance UID	0020,000D	UI		U
Study Time	0008,0030	TM		R

When querying optional keys the Archive-Manager AE will respond successfully for available keys if queried per universal matching, otherwise it will respond with warning.

Note that when querying optional keys with non-universal matching the Archive-Manager AE will return information using universal matching for those keys.

The behavior of the response status and exception handling of the Archive-Manager AE is describes in the next tables.

Table 55: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	The C-FIND request handling is completed, no more C-FIND responses are sent.
Failed	C000	Unable to process	The C-FIND request cannot be parsed. The reason is reported in extended log file.
Cancel	FE00	Matching terminated due to Cancel request	The C-FIND request is canceled, no more C-FIND responses are sent.
Pending	FF00	Matches are continuing - current match is supplied and any optional keys were supported in the same manner as required keys	The C-FIND responses are continuing
	FF01	Matches are continuing - Warning that one or more optional keys were not supported for existence and/or matching for this identifier	The C-FIND responses are continuing

4.2.3.4.2.5. SOP Specific Conformance for Study Root QR Information Model - FIND SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.4.2.5.1. Dataset Specific Conformance for Study Root QR Information Model - FIND SOP Class C-FIND-SCP

Table 56: Supported Query Keys for Study Root Information Model

Study Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Instance Availability	0008,0056	CS		O
Query/Retrieve Level	0008,0052	CS	Single Value	R
Specific Character Set	0008,0005	CS		O
Q/R Study level				
Accession Number	0008,0050	SH	Single Value, Universal, Wild Card	R
Modalities in Study	0008,0061	CS		R
Name of Physician(s) Reading Study	0008,1060	PN		O
Number of Study Related Instances	0020,1208	IS		O
Patient ID	0010,0020	LO	Single Value, Universal, Wild Card	R
Patient's Name	0010,0010	PN	Single Value, Universal, Wild Card	R
Patient's Sex	0010,0040	CS	Universal	O
Patient's Size	0010,1020	DS		O
Patient's Weight	0010,1030	DS		O
Referring Physician's Name	0008,0090	PN	Universal	O, Case-insensitive
Study Date	0008,0020	DA	Range, Single Value, Universal	R
Study Description	0008,1030	LO	Universal	O
Study ID	0020,0010	SH	Single Value, Universal	R
Study Instance UID	0020,000D	UI	Single Value	U
Study Time	0008,0030	TM		R
Q/R Series level				
Body Part Examined	0018,0015	CS	Single Value	O
Modality	0008,0060	CS	Single Value, Universal	R
Number of Series Related Instances	0020,1209	IS		O
Protocol Name	0018,1030	LO	Single Value, Wild Card	O
Series Description	0008,103E	LO	Single Value, Wild Card	O
Series Instance UID	0020,000E	UI	Single Value	U

Series Number	0020,0011	IS	Single Value, Universal	R
Study Instance UID	0020,000D	UI		R
Q/R Image level				
Instance Number	0020,0013	IS		R
Series Instance UID	0020,000E	UI		R
SOP Class UID	0008,0016	UI		U
SOP Instance UID	0008,0018	UI		R
Study Instance UID	0020,000D	UI		R

When querying optional keys the Archive-Manager AE will respond successfully for available keys if queried per universal matching, otherwise it will respond with warning.

Note that when querying optional keys with non-universal matching the Archive-Manger AE will return information using universal matching for those keys.

The behavior of the response status and exception handling of the Archive-Manager AE is describes in the next tables.

Table 57: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	The C-FIND request handling is completed, no more C-FIND responses are sent.
Failed	C000	Unable to process	The C-FIND request cannot be parsed. The reason is reported in extended log file.
Cancel	FE00	Matching terminated due to Cancel request	The C-FIND request is canceled, no more C-FIND responses are sent.
Pending	FF00	Matches are continuing - Current match is supplied and any optional keys were supported in the same manner as required keys	C-FIND responses are continuing.
	FF01	Matches are continuing - Warning that one or more optional keys were not supported for existence and/or matching for this identifier	C-FIND responses are continuing.

The DICOM standard does not guarantee that the Archive-Manager AE applications can process the received requests. This depends on the presence and consistency of a set of attributes in these requests.

4.2.3.4.3. (Real-World) Activity – MOVE as SCP

4.2.3.4.3.1. Description and Sequencing of Activities

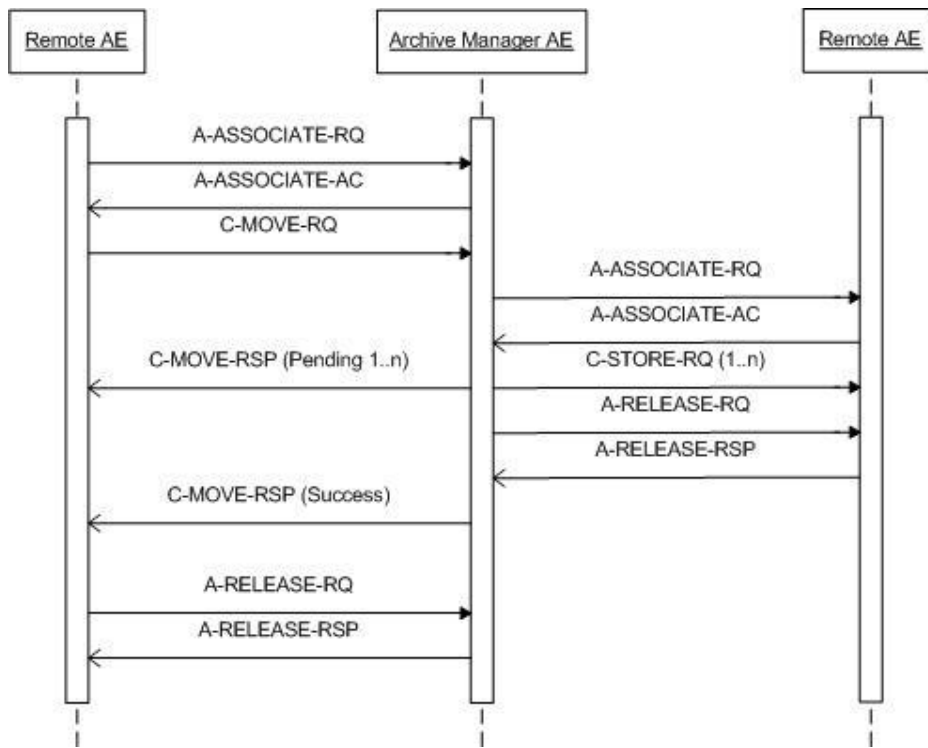


Figure 13: Sequencing of RWA - Rerieive local instances

The Archive-Manager AE shall accept associations from systems that are going to retrieve instances from the Archive-Manager using the C-MOVE command.

The Real World activity associated with the C-MOVE command is retrieval of instances from the Archive-Manager local database and storage of the instances to a destination system using a C-STORE command.

After RWA Retrieve Local Instances the RWA Store Instances is started.

4.2.3.4.3.2. Accepted Presentation Contexts

The Archive-Manager AE shall be able to accept the presentation contexts as specified in the next table.

Table 58: Acceptable Presentation Contexts for (Real-World) Activity – MOVE as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
Patient/Study Only QR Info. Model - MOVE SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		
Study Root QR Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

The Archive-Manager AE shall accept all contexts in the intersection of the proposed and acceptable Presentation Contexts. This means that the Archive-Manager accepts presentation contexts with multiple transfer syntaxes, presentation contexts differing only by their transfer syntax as well as duplicate presentation contexts.

There is no check for duplicate contexts, and these will therefore be accepted.

The Archive-Manager does not limit the number of accepted presentation contexts.

In some unlikely cases when the Archive-Manager runs out of resources while trying to accept multiple presentation contexts, the Archive-Manager will reject the association.

The Archive-Manager AE provides standard conformance to the Query/Retrieve service class. The Archive-Manager AE shall handle simultaneous C-MOVE requests simultaneously.

The Archive-Manager AE provides standard conformance.

The Archive-Manager AE does not attempt any extended negotiation.

The Archive-Manager AE sends one C-MOVE response message after each C-STORE operation it attempts.

The Archive-Manager AE continues sending the remaining instances after unsuccessful C-STORE responses.

The Archive-Manager AE takes no further action in case of warnings or errors in the C-STORE operations.

The Archive-Manager AE sends the matched instances including any private elements.

The Archive-Manager AE just before to send instance to a remote Store SCP do following actions

- Converts text strings in the instance from Unicode to define for Store SCP character set.
- Converts Pixel data and Overlay binary data to format which corresponds accepted by remote store SCP transfer syntax.

4.2.3.4.3.3. SOP Specific Conformance for Patient Root QR Information Model - MOVE SOP Class

4.2.3.4.3.3.1. Dataset Specific Conformance for Patient Root QR Information Model - MOVE SOP Class C-MOVE-SCP

Table 59: Identifiers for MOVE Patient Root Information Model as SCP

Patient Root Information Model			
Attribute Name	Tag	VR	Comment
Failed SOP Instance UID List	0008,0058	UI	

Table 60: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete - No failures	The C-MOVE command has been completed
Refused	A701	Out of Resources - Unable to calculate number of matches	No C-STORE command will be sent. Archive-Manager reports the reason in extended SCP log.
	A702	Out of Resources - Unable to perform Sub-operations	C-STORE command will not be sent. Archive-Manager reports the reason in extended SCU log. Failure status will be responded, Next sub-operation will be attempted.
	A801	Move Destination unknown	No C-STORE command will be sent. Archive-Manager reports the reason in extended log. Failure status will be responded.
Failed	C000	Unable to process	The C-MOVE request cannot be parsed. No store command will be sent. Archive-Manager reports the reason in extended log. Failure status will be responded.
Warning	B000	Sub-operation completed - One or more failures	Number of sub-operations completed > 0 or = 0 and sub operation failed > 0 or/and sub operation warning > 0
Cancel	FE00	Sub-operations terminated due to Cancel indication	The C-MOVE request is canceled, no more C-MOVE responses are sent.
Pending	FF00	Sub-operations are continuing	For every store response we get.

The DICOM standard does not guarantee that the Archive-Manager AE applications can process the received requests. This depends on the presence and consistency of a set of attributes in these requests.

4.2.3.4.3.4. SOP Specific Conformance for Patient/Study Only QR Info. Model - MOVE SOP Class (Retired)

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.4.3.4.1. Dataset Specific Conformance for Patient/Study Only QR Info. Model - MOVE SOP Class C-MOVE-SCP

Table 61: Identifiers for MOVE Patient/Study Only Information Model as SCP

Patient/Study Only Information Model			
Attribute Name	Tag	VR	Comment
Failed SOP Instance UID List	0008,0058	UI	

Table 62: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete - No Failures	The C-MOVE command has been completed.
Refused	A701	Out of Resources - Unable to calculate number of matches	No C-STORE command will be sent. Archive-Manager reports the reason in extended SCP log.
	A702	Out of resources - Unable to perform sub-operations	C-STORE command will not be sent. Archive-Manager reports the reason in extended SCU log. Failure status will be responded. Next sub-operation will be attempted.
	A801	Move Destination unknown	No C-STORE command will be sent. Archive-Manager reports the reason in extended log. Failure status will be responded.
Failed	C000	Unable to process	The C-MOVE request cannot be parsed. No Store command will be sent. Archive-Manager reports the reason in extended log. Failure status will be responded.
Warning	B000	Sub-operations complete - One or more failures	Number of sub-operations completed > 0 or = 0 and sub-operation failed > 0 or/and sub-operation warning > 0.
Cancel	FE00	Sub-operation terminated due to Cancel indication	The C-MOVE request is canceled, no more C-MOVE responses are sent.
Pending	FF00	Sub-operation are continuing	For every store response we get.

The DICOM standard does not guarantee that the Archive-Manager AE applications can be process the received requests. This depends on the presence and consistency of a set of attributes in these requests.

4.2.3.4.3.5. SOP Specific Conformance for Study Root QR Information Model - MOVE SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.3.4.3.5.1. Dataset Specific Conformance for Study Root QR Information Model - MOVE SOP Class C-MOVE-SCP

Table 63: Identifiers for MOVE Study Root Information Model as SCP

Study Root Information Model			
Attribute Name	Tag	VR	Comment
Failed SOP Instance UID List	0008,0058	UI	

Table 64: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete - No failures	The C-MOVE command has been completed.
Refused	A701	Out of Resources - Unable to calculate number of matches	No C-STORE command will be sent. Archive-Manager reports the reason in extended SCP log.
	A702	Out of Resources - Unable to perform sub-operations	C-STORE command will not be sent. Archive-Manager reports the reason in extended SCU log. Failure status will be responded. Next sub-operations will be attempted.
	A801	Move Destination unknown	No C-STORE command will be sent. Archive-Manager reports the reason in extended log. Failure status will be responded.

Service Status	Error Code	Further Meaning	Behavior
Failed	C000	Unable to process	The C-MOVE request cannot be parsed, No Store command will be sent. Archive-Manager reports the reason in extended log. Failure status will be responded.
Warning	B000	Sub-operation complete - One or more Failures	Number of sub-operations completed >0 or = 0 and sub-operation failed > 0 or and sub-operation warning > 0
Cancel	FE00	Sub-operations terminated due to Cancel indication	The C-MOVE request is canceled, no more C-MOVE responses are sent.
Pending	FF00	Sub-operations are continuing	For every store response we get.

The DICOM standard does not guarantee that the Archive Manager AE applications can process the received requests. This depends on the presence of consistency of a set of attributes in these requests.

4.2.4. Storage Commitment AE

Detail of this specific Application Entity is specified in this section.

4.2.4.1. SOP Classes

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

Table 65: SOP Classes for Storage Commitment AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	No	Yes
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	No	Yes

Note: Any SOP specific behavior is documented later in the conformance statement in the applicable SOP specific conformance section.

4.2.4.2. Association Policies

Storage Commitment AE handles commit requests for previously stored instances for the remote AE.

4.2.4.2.1. General

Storage Commitment AE shall accept associations for the following purposes:

- To allow remote applications to verify application level communication with Storage Commitment AE.
- To allow remote applications to commit stored instances.

The AE will propose associations only for the Storage Commitment Push Model Service.

The maximum PDU size, which can be received the Storage Commitment AE, is configurable (default value is 64 Kbytes).

The DICOM standard application context is specified below.

Table 66: DICOM Application Context

Description	Value
Application Context Name	1.2.840.10008.3.1.1.1

4.2.4.2.2. Number of Associations

The Storage Commitment AE manages one association per process. For each incoming association Storage Commitment starts new process.

Number of associations simultaneously accepted by the Storage Commitment will limit free resources of the operation system.

The Storage Commitment AE initiates one Association at a time for sending Storage Commitment Push Model N-EVENT-REPORTS to peer AEs.

Table 67: Number of associations as an Association Initiator for this AE

Description	Value
Maximum number of simultaneous associations proposed by Storage Commitment AE	1

Table 68: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations requested by peer AEs	Limited by operating system

4.2.4.2.3. Asynchronous Nature

The Storage Commitment AE supports asynchronous storage commitment. The Storage Commitment sends N- EVENT-REPORT in newly initiated association.

Table 69: Asynchronous nature as an Association Initiator for this AE

Description	Value
Maximum number of outstanding asynchronous transactions	1

There is no limit on the number of outstanding Storage Commitment Push Model Requests that can be received and acknowledged before the STORAGE-SCP AE has responded with the corresponding N-EVENT-REPORT Notifications.

Table 70: Outstanding Storage Commitment Push Model Requests

Description	Value
Maximum number of outstanding Storage Commitment Requests for which no N-EVENT Notification has been sent	No Maximum Limit

4.2.4.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

Table 71: DICOM Implementation Class and Version for Storage Commitment AE

Implementation Class UID	1.2.826.0.1.3680043.8.195.3.1.7230010.3
Implementation Version Name	ISP_DCX_V3_1

4.2.4.2.5. Communication Failure Handling

The behavior of the AE during communication failure is summarized in the next table.

Table 72: Communication Failure Behavior

Exception	Behavior
ARTIM Time-out	The association shall be dropped. Storage Commitment will open new association.
Association Time-out SCU	The association shall be dropped. Storage Commitment will open new association.
Association aborted	The association shall be dropped. Storage Commitment will open new association.

4.2.4.3. Association Initiation Policy

Storage Commitment shall initiate associations in the following cases: To send an archiving result report within processing of N-CREATE Storage Commitment requests.

4.2.4.4. Association Acceptance Policy

Storage Commitment accepts Associations for the following purposes:

- To allow remote applications to verify application level communication with Storage Commitment AE;
- To allow remote applications to request commitment of stored instances in the database.

The Storage Commitment will acknowledge an association from an external AE if the following conditions are met:

- The association request application context is DICOM;
- The requesting AE title is configured in the control database;
- The requesting AE network node matches the configured node. The Application Entity may reject Association attempts as shown in the table below.

Table 73: Association Reject Reasons

Result	Source	Reason/Diagnosis	Behavior
1 - rejected permanent	1 - DICOM UL service-user	1 - no-reason-given	
		2 - application-context-name-not-supported	
		3 - calling-AE-title-not-recognized	
		7 - called-AE-title-not-recognized	
	2 - DICOM UL service provider (ACSE related function)	1 - no-reason-given	
		2 - protocol-version-not-supported	
3 - DICOM UL service provider (Presentation related function)	1 - temporary-congestion		
	2 - local-limit-exceeded		
2 - rejected-transient	1 - DICOM UL service-user	1 - no-reason-given	
		2 - application-context-name-not-supported	
		3 - calling-AE-title-not-recognized	
		7 - called-AE-title-not-recognized	
	2 - DICOM UL service provider (ACSE related function)	1 - no-reason-given	
		2 - protocol-version-not-supported	
	3 - DICOM UL service provider (Presentation related function)	1 - temporary-congestion	
		2 - local-limit-exceeded	

The behavior of the AE for sending an Association abort is summarized in next table.

Table 74: Association Abort Policies

Source	Reason/Diagnosis	Behavior
0 - DICOM UL service-user (initiated abort)	0 - reason-not-specified	
2 - DICOM UL service-provider (initiated abort)	0 - reason-not-specified	
	1 - unrecognized-PDU	
	2 - unexpected-PDU	
	4 - unrecognized-PDU parameter	
	5 - unexpected-PDU parameter	
	6 - invalid-PDU-parameter value	

4.2.4.4.1. (Real-World) Activity – Verification as SCP

4.2.4.4.1.1. Description and Sequencing of Activities

The Storage Commitment AE shall accept associations from the systems, which are going to verify application level communication, using the C-ECHO command.

The real-world activity associated with the C-ECHO request is verification activity made by an external AE that are going to verify that the network connection is operating properly and that the Storage Provider is up and running.

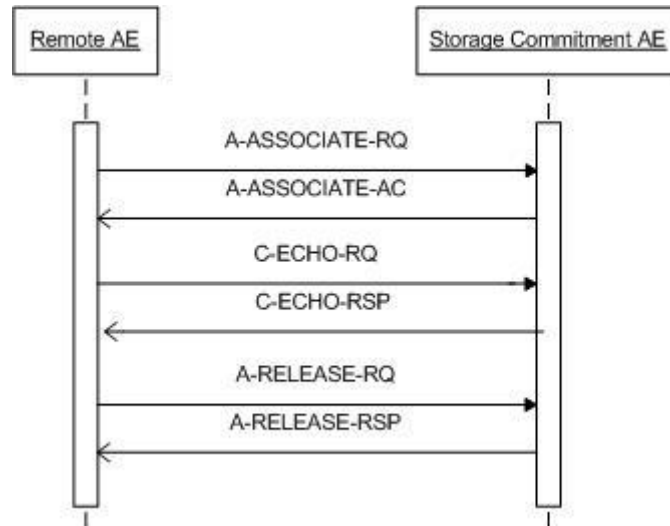


Figure 14: Sequencing of RWA-Request Verification

4.2.4.4.1.2. Accepted Presentation Contexts

The Storage Commitment will accept any number of Verification SOP classes. The Storage Commitment shall be able to accept the presentation contexts as specified in the next table

Table 75: Acceptable Presentation Contexts for (Real-World) Activity – Verification as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

4.2.4.4.1.3. SOP Specific Conformance for Verification SOP Class

The Storage Commitment AE provides standard conformance to the Verification service class.

4.2.4.4.1.3.1. Dataset Specific Conformance for Verification C-ECHO SCP

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 76: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful verification	The SCU has successfully returned all matching information

4.2.4.4.2. (Real-World) Activity – Storage Commitment Push Model as SCP

4.2.4.4.2.1. Description and Sequencing of Activities

The Storage Commitment AE shall accept associations from systems that are going to commit instances stored in the data storage using the N-ACTION command.

If configured, Storage Commitment AE will send storage commitment report (N-EVENT-REPORT) in the same association in which a request is received (synchronous mode). To increase time during which modality waits of N-EVENT-REPORT is recommended if modality has option for configuring of the time interval. Some instances may be not committed yet when Storage Commitment AE

received request. In such case modality should send another request or use asynchronous mode of N-EVENT-REPORT if the time interval will be not enough long.

The Storage Commitment AE will then initiate a new Association to send N-EVEN-REPORT. An Association Request is sent to the peer AE that sent the Storage Commitment Push Model request and upon successful negotiation of the required Presentation Context the outstanding N-EVENT-REPORT is sent. If there are multiple outstanding N-EVENT-REPORTs to be sent to a single peer AE then the Storage Commitment AE will attempt to send them all over a single association rather than requesting a new association for each one. The association will be released when all the N-EVENT-REPORTs for the peer AE have been sent. If any type of error occurs during transmission (either a communication failure or indicated by a Status Code returned by the peer AE) over an open association then the transfer of N-EVEN-REPORTs is halted.

A new association will be opened to retry sending outstanding N-EVENT-REPORTs. The maximum number of times the Storage Commitment AE will attempt to resend and N-EVENT-REPORT is configurable, along with the amount of time to wait between attempts to resend.

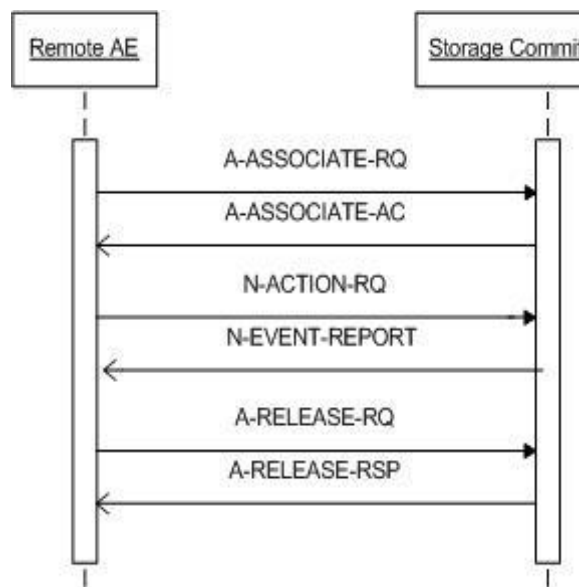


Figure 15: Sequencing of RWA - Synchronous Storage Commitment

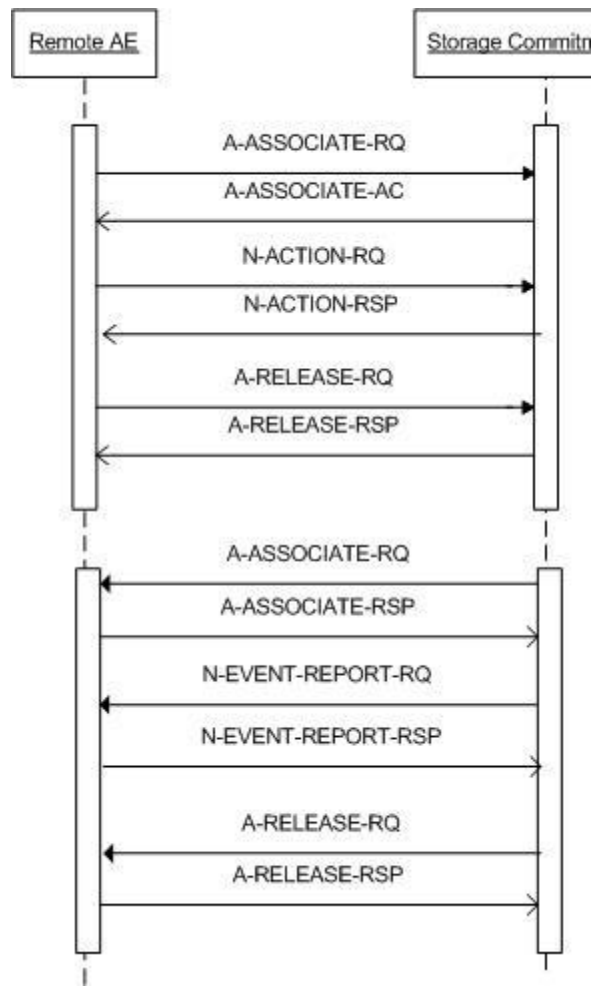


Figure 16: Sequencing of RWA- Asynchronous Storage Commitment

4.2.4.4.2.2. Accepted Presentation Contexts

The presentation contexts are defined in the next table.

Table 77: Acceptable Presentation Contexts for (Real-World) Activity – Storage Commitment Push Model as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

4.2.4.4.2.3. SOP Specific Conformance for Storage Commitment Push Model SOP Class

The DICOM standard does not guarantee that the Storage Commitment AE applications can process the received requests. This depends on the presence and consistency of a set of attributes in these requests.

- The Storage Commitment AE provides partial conformance to the DICOM Storage Commitment Service Class as an SCP.
- The Storage Commitment AE does not attempt any extended negotiation.
- The Storage Commitment AE does not discard any elements.
- The Storage Commitment takes no further action in case of warnings or errors in the N-ACTION-RQ and N-EVENT-REPORT-RQ operations. The operations are logged in the extended log.

If the Storage Commitment AE determines that it has completed storage commitment successfully, the Storage Commitment AE issues an N-EVENT-REPORT to the SCU including references to the successfully stored SOP Instances contained in the N-ACTION.

In the case when the Storage Commitment AE cannot commit to storing SOP Instances, the Storage Commitment AE issues an N-EVENT-REPORT to the SCU including references to the failed SOP Instances contained in the N-ACTION.

4.2.4.4.2.3.1. Dataset Specific Conformance for Storage Commitment Push Model SOP Class N-EVENT-REPORT-SCU

The N-EVENT-REPORT contains the transaction UID value contained in the initiating N-ACTION. The N-EVENT-REPORT is sent on a separate association from the N-ACTION operation.

This AE does not support the optional Storage MEDIA and File-Set ID and UID.

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 78: Storage Commitment attribute for N-EVENT-REPORT

Event Type Name	EVENT Type ID	Attribute Name	Tag	Commit
StorageCommitmentRequestSuccessful	1	Transaction UID	0008,1195	
		Referenced SOP Sequence	0008,1199	
		>Referenced SOP Class UID	0008,1150	
		>Referenced SOP Instance UID	0008,1155	
StorageCommitmentRequestCompleteFailures Exist	1	Transaction UID	0008,1195	
		Referenced SOP Sequence	0008,1199	
		>Referenced SOP Class UID	0008,1150	
		>Referenced SOP Instance UID	0008,1155	
	2	Transaction UID	0008,1195	
		Failed SOP Sequence	0008,1198	
		>Referenced SOP Class UID	0008,1150	
		>Referenced SOP Instance UID	0008,1155	
		>Failure Reason	0008,1197	

On receiving a storage commitment result with Event Type ID 1 (Storage Commitment Request Successful) the Application Entity will mark these images as committed.

On receiving a storage commitment result with Event Type ID 2 (Storage Commitment Request Complete - Failures Exist) the Application Entity will behave as described in next table.

Table 79: Storage Commitment N-EVENT-REPORT Failure Handling Behavior

Service Status	Error Code	Further Meaning	Description
Success	0000	Event report received by the SCU	Storage Commitment request will be removed from the database
Error	C000	Cannot understand	Storage Commitment request will be removed from the database. Reason will be reported in extended storage commitment notify log. SCU should send a new request.

Table 80: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Verification is complete	Successful received.

4.2.4.4.2.3.2. Dataset Specific Conformance for Storage Commitment Push Model SOP Class N-ACTION-SCP

Following are the details regarding the specific conformance, including behavior of request/response to all applicable status codes, both from an application level and communication errors.

Table 81: Storage Commitment request N-ACTION information table

Action Type Name	Action Type ID	Attribute Name	Tag
Request Storage Commitment	1	Transaction UID	(0008,1195)
		Referenced SOP Sequence	(0008,1199)
		>Referenced SOP Class UID	(0008,1150)
		>Referenced SOP Instance UID	(0008,1155)

The Storage AE will store SOP Instances indefinitely unless the instances are manually deleted by a user with appropriate system permissions. The capacity is limited only by the availability of archive storage and volatility is dependent on the archive medium used. This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 82: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Request received	The received request will be processed.
Error	C000	Cannot understand	The received request cannot be parsed. Storage Commitment AE reports the reason in extended SCP log and waits next request.

4.2.5. Print Manager AE

Detail of this specific Application Entity is specified in this section.

4.2.5.1. SOP Classes

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

Table 83: SOP Classes for Print Manager AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	Yes	No
Print Job SOP Class	1.2.840.10008.5.1.1.14	Yes	No
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	Yes	No
>Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Yes	No
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Yes	No
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
>Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Yes	No
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No

Note: Any SOP specific behavior is documented later in the conformance statement in the applicable SOP specific conformance section.

4.2.5.2. Association Policies

Each AE specification contains a description of the general association establishment and acceptance policies of the AE.

4.2.5.2.1. General

Print Manager AE requests an association from a SCP. If the requests for specific SOP classes are accepted, an association is established. The association is terminated after printing.

The following DICOM standard application context is specified.

Table 84: DICOM Application Context

Description	Value
Application Context Name	1.2.840.10008.3.1.1.1

4.2.5.2.2. Number of Associations

The number of simultaneous association that the Print Manager AE may support is specified as follows.

Table 85: Number of associations as an Association Initiator for this AE

Description	Value
Maximum number of simultaneous associations	1

Table 86: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations	1

4.2.5.2.3. Asynchronous Nature

The Print Manager AE doesn't support asynchronous associations (multiple outstanding transactions over a single association).

Table 87: Asynchronous nature as an Association Initiator for this AE

Description	Value
Maximum number of outstanding asynchronous transactions	None

4.2.5.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

Table 88: DICOM Implementation Class and Version for Print Manager AE

Implementation Class UID	1.2.826.0.1.3680043.8.195.3.1.7230010.3
Implementation Version Name	ISP_DCX_V3_1

4.2.5.2.5. Communication Failure Handling

The behavior of the AE during communication failure is summarized in the next table.

Table 89: Communication Failure Behavior

Exception	Behavior
ARTIM time-out	The association shall be dropped. Print Manager will open new association.
Association time-out SCU	The association shall be dropped. Print Manager will open new association.
Association aborted	The association shall be dropped. Print Manager will open new association.

4.2.5.3. Association Initiation Policy

The Application Entity will respond to a received Association rejection as shown in the next table.

Table 90: Association reject response

Result	Source	Reason/Diagnosis	Behavior
1 - rejected-permanent	1 - DICOM UL service-user	1 - no-reason-given	The user is notified. If applicable the command will be retried. Log entry.
		2 - application-context-name-not-supported	
		3 - calling-AE-title-not-recognized	
		7 - called-AE-title-not-recognized	
	2 - DICOM UL service-provider (ACSE related function)	1 - no-reason-given	
		2 - protocol-version-not-supported	
3 - DICOM UL service-provider (Presentation related function)	1 - temporary-congestion		
	2 - local-limit-exceeded		
2 - rejected-transient	1 - DICOM UL service-user	1 - no-reason-given	
		2 - application-context-name-not-supported	
		3 - calling-AE-title-not-recognized	
		7 - called-AE-title-not-recognized	
	2 - DICOM UL service-provider (ACSE related function)	1 - no-reason-given	
		2 - protocol-version-not-supported	
3 - DICOM UL service-provider (Presentation related function)	1 - temporary-congestion		
	2 - local-limit-exceeded		

Table 91: DICOM print management SOP classes result response status handling behavior

Service Status	Error Code	Further Meaning	Behavior
Success	0000	SCP received data	Print SCU can continue its job
Error	C000	Abort association	Abort association
Warning	B000	Abort association	Abort association

4.2.5.3.1. (Real-World) Activity – Verification as SCU

4.2.5.3.1.1. Description and Sequencing of Activities

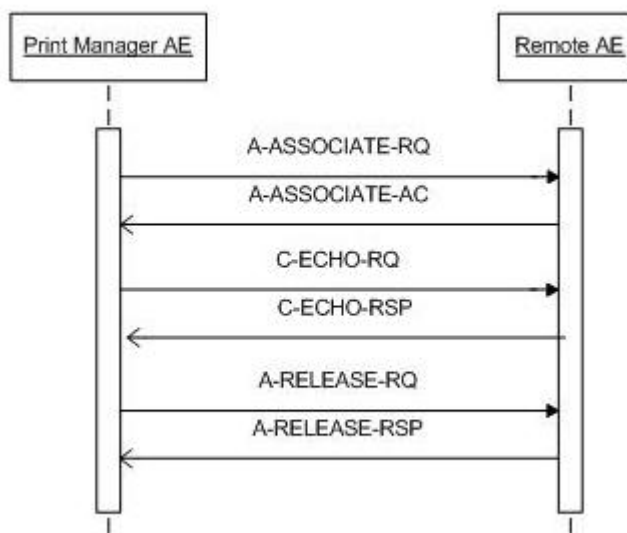


Figure 17: Sequencing of RWA - Verification as SCU

4.2.5.3.1.2. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 92: Proposed Presentation Contexts for (Real-World) Activity – Verification as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		Implicit VR Little Endian	1.2.840.10008.1.2		

4.2.5.3.1.3. SOP Specific Conformance for Verification SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.5.3.2. (Real-World) Activity – Print Management as SCU

4.2.5.3.2.1. Description and Sequencing of Activities

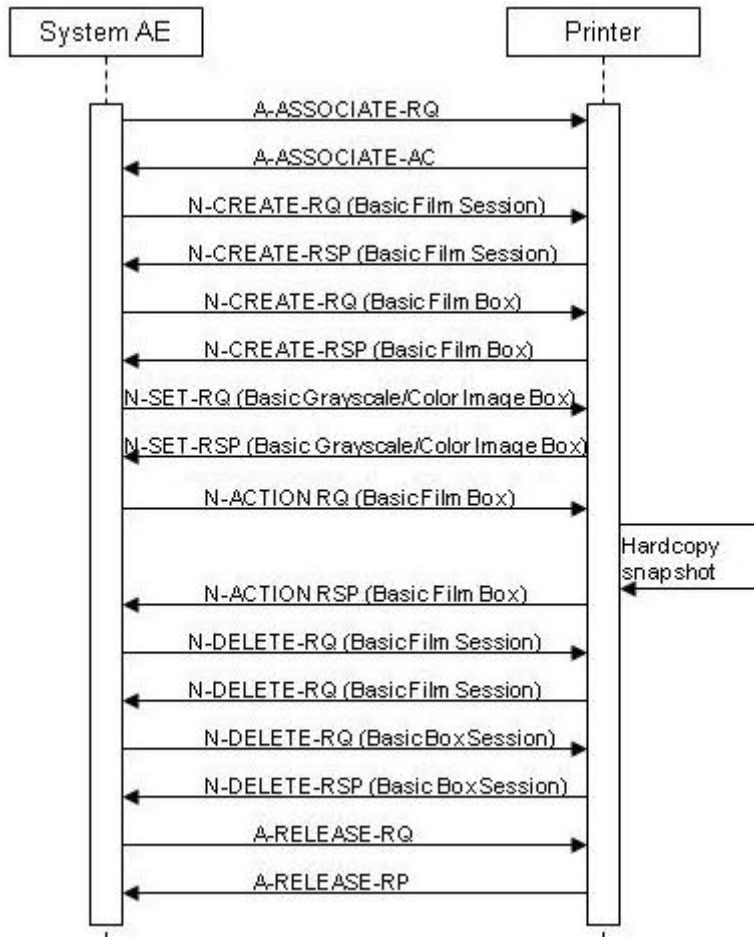


Figure 18: Sequencing of print Images by the System AE

When an association is established, System AE will instruct the SCP to print films at Film Box level for a session by requesting it to create a Film Session, Film Boxes, Image Boxes and Images.

4.2.5.3.2.2. Proposed Presentation Contexts

The Presentation Contexts proposed by the Print Manager AE are defined in following table.

Table 93: Proposed Presentation Contexts for (Real-World) Activity – Print Management as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Print Job SOP Class	1.2.840.10008.5.1.1.14	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18			SCU	None
>Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
>Printer SOP Class	1.2.840.10008.5.1.1.16	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9			SCU	None
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
>Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
>Printer SOP Class	1.2.840.10008.5.1.1.16	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

This section specifies each IOD created (including private IOD's).

Abbreviations used in the Module table for the column "Presence of Value" are:

ALWAYS	The attribute is always present with a value
EMPTY	The attribute is always present without any value (attribute sent zero length)
VNAP	The attribute is always present and its Value is Not Always Present (attribute sent zero length if no value is present)
ANAP	The attribute is present under specified condition – if present then it will always have a value
VNAPCV	The attribute is present under specified condition – if present then its Value is Not Always Present (attribute sent zero length if condition applies and no value is present)
ANAPEV	The attribute is present under specified condition – if present then it will not have any value

The abbreviations used in the Module table for the column "Source" are:

AUTO	The attribute value is generated automatically
CONFIG	The attribute value source is a configurable parameter
COPY	The attribute value source is another SOP instance
FIXED	The attribute value is hard-coded in the application
IMPLICIT	The attribute value source is a user-implicit setting
MPPS	The attribute value is the same as that use for Modality Performed Procedure Step
MWL	The attribute value source is a Modality Worklist
USER	The attribute value source is explicit user input

4.2.5.3.2.3. SOP Specific Conformance for Print Job SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.5.3.2.4. SOP Specific Conformance for Basic Film Session SOP Class of the Basic Color Print Management Meta SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.5.3.2.4.1. Dataset Specific Conformance for Basic Film Session SOP Class N-CREATE-SCU

Table 94: Basic Film Session Presentation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Number of Copies	2000,0010	IS		ALWAYS	CONFIG, USER	In the range from 1 to the maximum allowed by printer (from configuration)

Print Priority	2000,0020	CS	HIGH, LOW, MED	ALWAYS	CONFIG, USER	
Medium Type	2000,0030	CS	BLUE FILM, CLEAR FILM, MAMMO BLUE FILM, MAMMO CLEAR FILM, PAPER	ALWAYS	CONFIG, USER	
Film Destination	2000,0040	CS	BIN_i, MAGAZINE, PROCESSOR	ALWAYS	CONFIG, USER	BIN_i (i -value supported by printer, from configuration and selected by user)
Film Session Label	2000,0050	LO	Film Session	ALWAYS	AUTO	String up to 64 characters
Owner ID	2100,0160	SH	System	ALWAYS	AUTO	

This part of the section includes the dataset specific behavior, i.e. error codes, error and exception handling, time-outs, etc.

Table 95: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000		The instance is successfully created.
Error	0106, 0105	Error in creating the instance	The association is released and the print job is failed.
Failed	C000	Failed to create instance	The association is released and the print job is failed.
Warning	0116	Instance created with warning	The print job continues.

4.2.5.3.2.5. SOP Specific Conformance for Basic Film Box SOP Class Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.5.3.2.5.1. Dataset Specific Conformance for Basic Film Box SOP Class N-CREATE-SCU

Table 96: Basic Film Box Presentation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Display Format	2010,0010	ST	1	ALWAYS	AUTO	
Annotation Display Format ID	2010,0030	CS		ANAPCV	AUTO	
Film Orientation	2010,0040	CS	LANDSCAPE, PORTRAIT	ANAPCV	CONFIG, USER	
Film Size ID	2010,0050	CS	10INX12IN, 10INX14IN, 11INX14IN, 11INX17IN, 14INX14IN, 14INX17IN, 24CMX24CM, 24CMX30CM, 8_5INX11IN, 8INX10IN, A3, A4	ANAPCV	CONFIG, USER	
Magnification Type	2010,0060	CS	BILINEAR, CUBIC, NONE, REPLICATE	ANAPCV	CONFIG	
Border Density	2010,0100	CS	BLACK, WHITE	ANAPCV	CONFIG, USER	
Empty Image Density	2010,0110	CS	BLACK, WHITE	ANAPCV	CONFIG, USER	
Min Density	2010,0120	US		ANAPCV	CONFIG, USER	Range is configured for the specific printer
Max Density	2010,0130	US		ANAPCV	CONFIG, USER	Range is configured for the specific printer

Trim	2010,0140	CS	NO	ALWAYS	AUTO	Printer configuration contains resolution settings for each film size supported by the printer model named as Printer Type in IntelliSpace PACS DCX. Rendered image is adjusted to specified configuration and trim is unnecessary.
Requested Resolution ID	2020,0050	CS	STANDARD, HIGH	ANAPCV	CONFIG, USER	

Table 97: Basic Film Box Relationship Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Referenced Film Session Sequence	2010,0500	SQ		ALWAYS	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	

4.2.5.3.2.6. SOP Specific Conformance for Basic Grayscale Image Box SOP Class of the Basic Grayscale Print Management Meta SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.5.3.2.6.1. Dataset Specific Conformance for Basic Grayscale Image Box SOP Class N-SET-SCU

Table 98: Image Box Pixel Presentation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Magnification Type	2010,0060	CS	NONE	ANAPCV	AUTO	
Image Box Position	2020,0010	US	1	ALWAYS	AUTO	
Basic Grayscale Image Sequence	2020,0110	SQ		ALWAYS	AUTO	
>Samples per Pixel	0028,0002	US	1	ALWAYS	AUTO	
>Photometric Interpretation	0028,0004	CS	MONOCHROME2	ALWAYS	AUTO	
>Planar Configuration	0028,0006	US	1	ALWAYS	AUTO	
>Rows	0028,0010	US		ALWAYS	CONFIG	Configured for specific printer model and each used film size
>Columns	0028,0011	US		ALWAYS	CONFIG	Configured for specific printer model and each used film size
>Bits Allocated	0028,0100	US	16	ALWAYS	AUTO	
>Bits Stored	0028,0101	US	12	ALWAYS	AUTO	
>High Bit	0028,0102	US	11	ALWAYS	AUTO	
>Pixel Representation	0028,0103	US	0	ALWAYS	AUTO	
>Pixel Data	7FE0,0010	OW/OB		ALWAYS	AUTO	

4.2.5.3.2.7. SOP Specific Conformance for Basic Color Image Box SOP Class of the Basic Color Print Management Meta SOP Class

This section and sub-section include the manufacturer SOP and Dataset specific information as well the status codes and their corresponding behavior.

4.2.5.3.2.7.1. Dataset Specific Conformance for Basic Color Image Box SOP Class N-SET-SCU

Table 99: Image Box Pixel Presentation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Magnification Type	2010,0060	CS	NONE	ANAPCV	AUTO	
Image Box Position	2020,0010	US	1	ALWAYS	AUTO	
Basic Color Image Sequence	2020,0111	SQ		ALWAYS	AUTO	
>Samples per Pixel	0028,0002	US	3	ALWAYS	AUTO	
>Photometric Interpretation	0028,0004	CS	RGB	ALWAYS	AUTO	
>Planar Configuration	0028,0006	US	1	ALWAYS	AUTO	
>Rows	0028,0010	US		ALWAYS	CONFIG	Configured for specific printer model and each used film size.
>Columns	0028,0011	US		ALWAYS	CONFIG	Configured for specific printer model and each used film size.
>Pixel Aspect Ratio	0028,0034	IS		ANAP	AUTO	
>Bits Allocated	0028,0100	US	8	ALWAYS	AUTO	
>Bits Stored	0028,0101	US	8	ALWAYS	AUTO	
>High Bit	0028,0102	US	7	ALWAYS	AUTO	
>Pixel Representation	0028,0103	US	0	ALWAYS	AUTO	
>Pixel Data	7FE0,0010	OW/ OB		ALWAYS	AUTO	

4.2.5.3.2.7.2. Dataset Specific Conformance for Basic Film Box SOP Class N-ACTION-SCU

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Requested SOP Class UID	0000,0003	UI		ALWAYS	AUTO	
Requested SOP Instance	0000,1001	UI		ALWAYS	AUTO	

4.2.5.3.2.7.3. Dataset Specific Conformance for Basic Film Box SOP Class N-DELETE-SCU

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Requested SOP Class UID	0000,0003	UI		ALWAYS	AUTO	
Requested SOP Instance	0000,1001	UI		ALWAYS	AUTO	

4.2.5.4. Association Acceptance Policy

Print manager never accepts an association.

4.3. Network Interfaces

4.3.1. Physical Network Interfaces

The System provides only DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3.8 of the standard.

TCP/IP is the only protocol stack supported.

Supported physical medium include:

IEEE 802.3-1995, 10BASE-T

IEEE 802.3-1995, 100BASE-TX (Fast Ethernet)

IEEE 802.3, 1000BASE-X (Fiber Optic Gigabit Ethernet).

TCP/IP stack is inherited from the Operating System.

4.3.2. Additional Protocols

OSI Stack is not supported.

IntelliSpace PACS DCX R3.1.0 is indifferent to the physical media over which TCP/IP operates. Inherits the medium from the operating system upon which it executes.

Point-to-Point stack is not supported.

4.4. Configuration

Any implementation's DICOM conformance may be dependent upon configuration, which takes place at the time of installation. Issues concerning configuration are addressed in this section.

4.4.1. AE Title/Presentation Address Mapping

AE Title / Presentation-Address mapping is stored in centralized control database for configuration and is configured using administration utilities.

4.4.1.1. Local AE Titles

The local AE title mapping and configuration are specified as:

Table 100: AE Title configuration

Application Entity	Default AE Title	Default TCP/IP Port
Storage Provider	CDP5000	104
Distribution-Manager	CDP5000	-
Archive-Manager	CDP5000QRSCP	105
Archive-Manager for Store/QR SCU	CDP5000	-
Storage Commitment	CDP5000SCSCP	106
Print Manager	CDP5000	-

The AE titles can be changed independently. Several number of AE titles can be defined for Store SCP. Only one AE is allowed for all other service.

4.4.1.2. Remote AE Title/Presentation Address Mapping

The configuration of the remote application is specified here.

Remote Association Initiators:

All relevant remote applications able to setup a DICOM association towards IntelliSpace PACS DCX R3.1.0 applications must be configured at it configuration time. The Customer Support Engineer must provide the following information for each remote application:

- The Application Entity Title.
- The host name/IP address on which the remote application resides.

Remote Association Acceptors:

The following information must be provided for all relevant remote applications that are able to accept DICOM associations from IntelliSpace PACS DCX R3.1.0:

- The Application Entity Title.
- The host name/IP address on which the remote application resides.
- The port number at which the remote application accepts association requests.

4.4.2. Parameters

The specification of important operational parameters, their default value and range (if configurable) is specified here.

The configuration parameters are given categorized in the following sections: .

- Local Configurable Parameters of the IntelliSpace PACS DCX R3.1.0 AE's.
- Remote Configurable Parameters of the IntelliSpace PACS DCX R3.1.0 AE's.

Table 101: Configuration Parameters Table

Parameter	Configurable	Default Value
Configurable Parameters of Local AE's		
Time-out waiting for acceptance or rejection Response to an Association Open Request (Application Level timeout) (The parameters depend on operation system configuration.)	Yes	30 seconds
Time-out for response to TCP/IP connect request. (Low-level timeout)	No	-
Time-out waiting for acceptance of a TCP/IP message over the network (Low-level timeout)	No	-
Time-out for waiting for data between TCP/IP packets. (Low-level timeout)	No	-
Any changes to default TCP/IP settings, such as configurable stack parameters.	No	-
Size constraint in maximum object size	No	-
Maximum PDU size the AE can receive (Minimum 1kBytes, Maximum 64 Kbytes)	Yes	64 Kbytes
Maximum PDU size the AE can send (Minimum 1kBytes, Maximum 64 Kbytes)	Yes	64 Kbytes
AE specific DIMSE level time-out values	Yes	30 seconds
Listening by Store SCP port	Yes	104
Listening by Query/Retrieve SCP port	Yes	105
Listening by Storage Commitment SCP port	Yes	106
Configurable Parameter of Remote AE		
Size constraint in maximum object size (The parameters depend on operation system configuration.)	No	-
Maximum PDU size the AE can receive	No	64 Kbytes
Maximum PDU size the AE can send	No	64 Kbytes
Time-out waiting for acceptance or rejection Response to an Association Open Request (Application level time-out ARTIM)	Yes	30 seconds
AE specific DIMSE level time-out values	Yes	30 seconds
Storage Commitment request must be sent after Storage request	No	-
Storage Commitment time-out (synchronous to asynchronous)	NA	-
Storage Commitment response port	Yes	104
Storage Commitment max failed responses	Yes	0
Storage Commitment response in the some association	Yes	False
Storage Commitment N_EVENT_REPORT retrieve AET for each instance	Yes	False
Listening by Store SCP port	Yes	104
Listening by Query/Retrieve SCP port	Yes	105
Move destination for Query/Retrieve SCU	Yes	Store SCP service of same device
Defined character set	Yes	ISO_IR 100
Export pure DICOM instances (i.e. only the standard DICOM attributes as defined in the related IOD) or extended DICOM instances (with additional Standard DICOM, Private and Retired attributes)	No	Allow all attributes

The IntelliSpace PACS DCX R3.1.0 configuration is done using administration utilities. Please refer to Installation Manual and Administration's Manual for complete documentation.

In addition, the IntelliSpace PACS DCX R3.1.0 provides a variety of dynamic application configurations for managing the instances archiving:

- Dynamic Disk Space Cleanup Policies are provided to control the storage period based on the instances origin and content.
- Forward Rules provide a robust mechanism for instances distribution enabling to use the system as a DICOM network hub.

Important implementation remarks and restrictions:

The Archive-Manger AE makes use of Cleanup-Policies for performing automatic maintenance tasks related to disk space management. This mechanism enables to run over long periods causing no administrative burden.

During this phase, or later, the administrator may choose to define cleanup-policies, which will govern the way, selects instances for deletion.

Forward-Rules are a set of rules that is used to select the received by Storage Provider AE instances, for the Receiver application (Distribution Manager AE) to send studies to the Media AE, the Archive-Manager AE, other locations on the network (DICOM), or any combination thereof.

For complete documentation of the IntelliSpace PACS DCX R3.1.0 Cleanup-Policies and Forward-Rules please refer to the Administration's Manual.

5. Media Interchange

5.1. Implementation model

The implementation model identifies the DICOM Application Entities for Media in specific implementation and relates the Application Entities to Real-World Activities.

5.1.1. Application Data Flow Diagram

The Media AE will act as a FSC when writing the selected instances onto the DVD medium.

The next image shows the Media Interchange Application Data Flow as a functional overview of the IntelliSpace PACS DCX R3.1.0 for DVD.

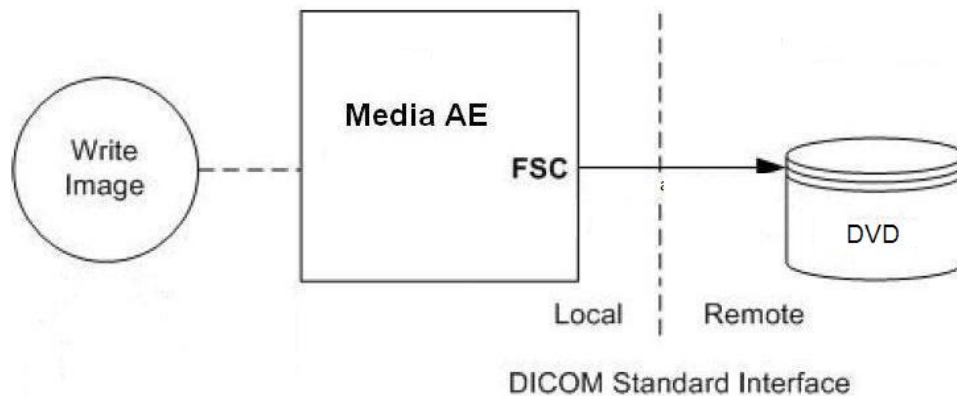


Figure 19: Media Interchange Application Data Flow Diagram

The IntelliSpace PACS DCX R3.1.0 will act as a FSC for a DVD, when writing the selected instances in a data folder onto the medium.

It writes DICOMDIR using Explicit Little Endian Transfer Syntax and writes the instances using the same transfer syntax as they were stored on the IntelliSpace PACS DCX R3.1.0 by Storage Provider AE.

On the media is used the Unicode character set "ISO_IR 192".

Reading of DVD on remote systems is possible if the ISO_IR 192 character set is accepted.

The images can be viewed with the on media available viewer "DIAGNET".

The Media AE cannot read (FSR) the DVD or update (FSU) the DVD.

Note:

IntelliSpace PACS DCX R3.1.0 does not check type of media on which data is burned. General Purpose DVD Interchange with JPEG Media Storage Application Profile shall be used for media writing.

5.1.2. Functional Definitions of AE's

The Media AE includes the Media Storage Service Class for DVD.

The Media AE can perform the DVD Media Storage service as SCU, with capabilities for RWA Write Instances (as FSC).

5.1.3. Sequencing of Real World Activities

Whenever a DVD has to be written the Media AE first reads required DICOM instances from temporary storage and builds the DICOMDIR for the instances set. The Media AE will compile the DICOMDIR, required DICOM instances and unique high quality self-playing image viewing and manipulation program (DiagNET) into a DVD media image; this DVD media image will be written to DVD.

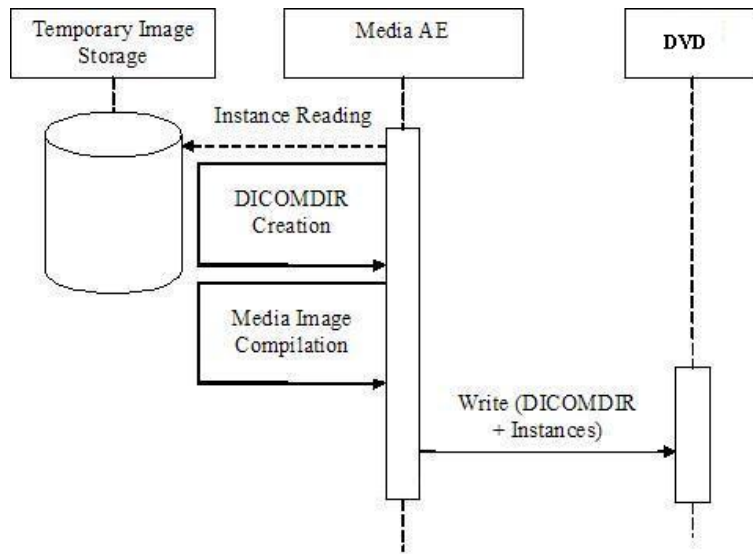


Figure 20: Sequencing of RWA Write Instances

5.2. AE Specifications

This section in the DICOM Conformance Statement specifies a set of Media Application Entities.

5.2.1. Media AE - Specification

The Media AE provides standard conformance to the DICOM Media Storage service and file format ([DICOM] PS. 3.10) and given profiles ([DICOM] PS 3.11) as in table below for writing.

Media AE supports single- and multi-patient DVD for writing.

The following table shows the Real-World activities and the roles of each of these Real-World activities.

Table 102: AE Media AE related Application Profiles, RWA activities and roles

Supported Application Profile	Identifier	Real-World Activities	Roles
General Purpose DVD Interchange with JPEG	STD-GEN-DVD-JPEG	Create File-set	FSC

5.2.1.1. File Meta Information for the Media AE

The AE-Title is registered into the DICOM File Meta information header and is supported by the Media AE acting as a FSC.

Table 103: File Meta Information for the Media AE

Implementation Class UID	1.2.826.0.1.3680043.8.195.3.1.20041017
Implementation Version Name	ISP_DCX_V3_1

5.2.1.2. Real-World Activities

The AE specification contains a description of the Real-World Activities, which invoke the particular AE.

5.2.1.2.1. RWA - Create File-set

When an instance transfer to DVD is initiated then the Media AE acts as an FSC using the interchange option to export SOP instances from the temporary location to an available medium (DVD).

5.2.1.2.1.1. Media Storage Application Profile

The Media AE supports the RWA - Create File Set for the available application profiles.

5.2.1.2.1.1.1. Options

All existing in received instance Optional, Retired and Private attributes are kept, stored and exported.

The DICOMDIR file will be created for the whole set of instances during creating of media image. In case some attributes are not present in an instance but are specified as mandatory in the DICOMDIR definition for DICOM Media, a generated value will be filled in.

Implementation remarks and restrictions:

When writing the DICOMDIR records, key values are generated when no value of the corresponding attributes is supplied, according to the following table.

Table 104: Generated Keys

Key	Tag	Generated Value
Patient Key		
Patient ID	0010,0020	At import the system creates a value based on GUID obtained from operating system.
Study Keys		
Study Date	0008,0020	Current date
Study Time	0008,0030	Current time
Study ID	0020,0010	"UNKNOWN"
Series Keys		
Series Number	0020,0011	1

The value for File-set Consistency Flag (0004,1212) is set to 0000H (no known inconsistencies).

The IntelliSpace PACS DCX R3.1.0 client writes data on volumes of the media. Burn over is not possible.

The unique high quality self-playing image viewing and manipulation program (DiagNET) will be written on each medium

5.3. Augmented and Private Application Profiles

Not applicable

5.4. Media Configuration

Not applicable

6. Support of Character Sets

Any support for character sets in Network and Media services is described here.

Table 105: Supported DICOM Character Sets

Character Set Description	Defined Term	ESC Sequence	ISO Registration Number	Code Element	Character Set
GB18030	GB18030	-	-	-	-
		-	-	-	-
Latin alphabet No. 1	ISO 2022 IR 100	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/01	ISO-IR 100	G1	Supplementary set of ISO 8859
Latin alphabet No. 2	ISO 2022 IR 101	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/02	ISO-IR 101	G1	Supplementary set of ISO 8859
Latin alphabet No. 3	ISO 2022 IR 109	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/03	ISO-IR 109	G1	Supplementary set of ISO 8859
Latin alphabet No. 4	ISO 2022 IR 110	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/04	ISO-IR 110	G1	Supplementary set of ISO 8859
Greek	ISO 2022 IR 126	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/06	ISO-IR 126	G1	Supplementary set of ISO 8859
Arabic	ISO 2022 IR 127	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/07	ISO-IR 127	G1	Supplementary set of ISO 8859
Hebrew	ISO 2022 IR 138	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/08	ISO-IR 138	G1	Supplementary set of ISO 8859
Cyrillic	ISO 2022 IR 144	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/12	ISO-IR 144	G1	Supplementary set of ISO 8859
Latin alphabet No. 5	ISO 2022 IR 148	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/13	ISO-IR 148	G1	Supplementary set of ISO 8859
Default repertoire	ISO 2022 IR 6	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
Latin alphabet No. 1	ISO_IR 100	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 100	G1	Supplementary set of ISO 8859
Latin alphabet No. 2	ISO_IR 101	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 101	G1	Supplementary set of ISO 8859
Latin alphabet No. 3	ISO_IR 109	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 109	G1	Supplementary set of ISO 8859

Character Set Description	Defined Term	ESC Sequence	ISO Registration Number	Code Element	Character Set
Latin alphabet No. 4	ISO_IR 110	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 110	G1	Supplementary set of ISO 8859
Greek	ISO_IR 126	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 126	G1	Supplementary set of ISO 8859
Arabic	ISO_IR 127	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 127	G1	Supplementary set of ISO 8859
Hebrew	ISO_IR 138	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 138	G1	Supplementary set of ISO 8859
Cyrillic	ISO_IR 144	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 144	G1	Supplementary set of ISO 8859
Latin alphabet No. 5	ISO_IR 148	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 148	G1	Supplementary set of ISO 8859
Unicode in UTF-8	ISO_IR 192	-	-	-	-
		-	-	-	-
Default repertoire	-	-	ISO-IR 6	G0	ISO 646

Internally the IntelliSpace PACS DCX R3.1.0 only uses Unicode characters and datasets are stored internally using ISO_IR 192 character set. Conversion of text/string values are performed according to default character set (tag 0008,0005) received with dataset or to character set and rules for its usage defined for Store SCU service of remote DICOM device.

Text/string values in dataset will be converted to defined character set on sending instances to Store SCP service or remote DICOM device and on responding to Query/Retrieve SCU service of remote DICOM device.

Only one character set can be defined for each service of remote DICOM device. So IntelliSpace PACS DCX R3.1.0 gives full support for only one extended character set per remote service. It can receive dataset in several extended character sets if the character sets are specified in the dataset and defined character set conversion rule allows usage of character sets specified dataset.

7. Security

7.1. Security Profiles

IntelliSpace PACS DCX R3.1.0 does not implement any DICOM security profiles from PS. 3.15

7.1.1. Security use Profiles

Not applicable

7.1.2. Security Transport Connection Profiles

Not applicable

7.1.3. Digital Signature Profiles

Not applicable

7.1.4. Media Storage Security Profiles

Not applicable

7.1.5. Attribute Confidentiality Profiles

Not applicable

7.1.6. Network Address Management Profiles

Not applicable

7.1.7. Time Synchronization Profiles

Not applicable

7.1.8. Application Configuration Management Profiles

Not applicable

7.1.9. Audit Trail Profiles

Not applicable

7.2. Association Level Security

IntelliSpace PACS DCX R3.1.0 provides association level security by restricting acceptance to association requests only from DICOM AEs configured in this system. Association requests from unknown DICOM AEs will be rejected.

7.3. Application Level Security

Administration tool require a valid user name and password pair to login.

8. Annexes of application "Viewer"

8.1. IOD Contents

8.1.1. Created SOP Instance

The IntelliSpace PACS DCX R3.1.0 reflects the fact that the IOD created by this system are always based on some source images after the viewing/processing applied and the modified images are saved as "Key Image" or as MPR saved reconstructions. Most of the attributes or even the whole modules (Patient, General Study and other) are just copied from the source images.

In the next sub-sections will only give the DICOM attributes which are new created or modified by the IntelliSpace PACS DCX R3.1.0.

This section specifies each IOD created (including private IOD's). It should specify the attribute name, tag, VR, and value. The value should specify the range and source (e.g. user input, Modality Worklist, automatically generated, etc.). For content items in templates, the range and source of the concept name and concept values should be specified. Whether the value is always present or not shall be specified.

Abbreviations used in the IOD tables for the column "Presence of Module" are:

ALWAYS The module is always present
 CONDITIONAL The module is used under specified condition

Abbreviations used in the Module table for the column "Presence of Value" are:

ALWAYS The attribute is always present with a value
 EMPTY The attribute is always present without any value (attribute sent zero length)
 VNAP The attribute is always present and its Value is Not Always Present
 (attribute sent zero length if no value is present)
 ANAP The attribute is present under specified condition – if present then it will always have a value
 ANAPCV The attribute is present under specified condition – if present then its Value is Not Always Present
 (attribute sent zero length if condition applies and no value is present)
 ANAPEV The attribute is present under specified condition – if present then it will not have any value

The abbreviations used in the Module table for the column "Source" are:

AUTO The attribute value is generated automatically
 CONFIG The attribute value source is a configurable parameter
 COPY The attribute value source is another SOP instance
 FIXED The attribute value is hard-coded in the application
 IMPLICIT The attribute value source is a user-implicit setting
 MPPS The attribute value is the same as that use for Modality Performed Procedure Step
 MWL The attribute value source is a Modality Worklist
 USER The attribute value source is explicit user input

8.1.1.1. List of created SOP Classes

Table 106: List of created SOP Classes

SOP Class Name	SOP Class UID
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2

8.1.1.2. Secondary Capture Image Storage SOP Class

Table 107: IOD of Created Secondary Capture Image Storage SOP Class Instances

Information Entity	Module	Presence Of Module
Series	General Series Module	ALWAYS
Equipment	SC Equipment Module	ALWAYS
Image	General Image Module	ALWAYS
	Image Pixel Module	ALWAYS
	SOP Common Module	ALWAYS

Table 108: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ALWAYS	AUTO	creation date
Series Time	0008,0031	TM		ALWAYS	AUTO	creation time
Series Description	0008,103E	LO	Key Image Series	ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		ALWAYS	AUTO	

Table 109: SC Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS	OT	ALWAYS	AUTO	
Conversion Type	0008,0064	CS	SYN	ALWAYS	AUTO	

Table 110: General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Source Image Sequence	0008,2112	SQ		ANAPCV	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	

Table 111: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Samples per Pixel	0028,0002	US	3	ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS	RGB	ALWAYS	AUTO	
Planar Configuration	0028,0006	US	0	ALWAYS	AUTO	
Rows	0028,0010	US	512	ALWAYS	AUTO	
Columns	0028,0011	US	512	ALWAYS	AUTO	
Bits Allocated	0028,0100	US	8	ALWAYS	AUTO	
Bits Stored	0028,0101	US	8	ALWAYS	AUTO	
High Bit	0028,0102	US	7	ALWAYS	AUTO	
Pixel Representation	0028,0103	US	0	ALWAYS	AUTO	
Pixel Data	7FE0,0010	OW/ OB		ALWAYS	AUTO	

Table 112: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	CONFIG	
Instance Creation Date	0008,0012	DA		ALWAYS	AUTO	creation date

Instance Creation Time	0008,0013	TM		ALWAYS	AUTO	creation time
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.7	ALWAYS	AUTO	
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	

8.1.1.3. CT Image Storage SOP Class

Table 113: IOD of Created CT Image Storage SOP Class Instances

Information Entity	Module	Presence Of Module
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Image Plane Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	CT Image Module	ALWAYS
Image	VOI LUT Module	ALWAYS
Image	SOP Common Module	ALWAYS

Table 114: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ALWAYS	AUTO	creation date
Series Time	0008,0031	TM		ALWAYS	AUTO	creation time
Modality	0008,0060	CS	CT	ALWAYS	AUTO	Reconstructions from PET, MR, etc. source images are saved as CT images
Series Description	0008,103E	LO		ALWAYS	USER	Entered by user
Performing Physicians' Name	0008,1050	PN		ALWAYS	AUTO	User who performed reconstruction
Performing Physician Identification Sequence	0008,1052	SQ		ANAP	AUTO	Presence if the user is linked to Service Provider
> Person Identification Code Sequence	0040,1101	SQ		ALWAYS	AUTO	
>>Code Value	0008,0100	SH		ALWAYS	AUTO	ID of the Service Provider
>>Coding Scheme Designator	0008,0102	SH	L	ALWAYS	AUTO	
>>Code Meaning	0008,0104	LO		ALWAYS	AUTO	Name combined from name components of the Service Provider
>Person's Address	0040,1102	ST		ANAP	AUTO	Mail Address of the Service Provider
>Person's Telephone Numbers	0040,1103	LO		ANAP	AUTO	Phones and Faxes of the Service provider separated by backslash (\)
>Institution Name	0008,0080	LO		VNAP	AUTO	Site Name from System Configuration
>Institution Address	0008,0081	ST		VNAP	AUTO	Site Address from System Configuration
Protocol Name	0018,1030	LO		VNAP	USER	Entered by user. Default value is copied from source images
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		ALWAYS	AUTO	

Table 115: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips	ALWAYS	AUTO	
Institution Name	0008,0080	LO		VNAP	AUTO	Site Name from System Configuration
Institution Address	0008,0081	ST		VNAP	AUTO	Site Address from System Configuration

Manufacturer's Model Name	0008,1090	LO		ALWAYS	AUTO	
Software Version	0018,1020	LOI		ALWAYS	AUTO	

Table 116: General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		ALWAYS	AUTO	Sequential number within the series
Content Date	0008,0023	DA		ALWAYS	AUTO	Date of image creation
Content Time	0008,0033	TM		ALWAYS	AUTO	Time of image creation
Acquisition Date	0008,0022	DA		ALWAYS	AUTO	The same as Content Date
Acquisition Time	0008,0032	TM		ALWAYS	AUTO	The same as Content Time
Referenced Image Sequence	0008,1140	SQ		ANAPCV	AUTO	Presence in created projections when referenced LOCALIZER is saved
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	SOP Class of the LOCALIZER
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	SOP Instance UID of the LOCALIZER
Derivation Description	0008,2111	ST		ALWAYS	AUTO	'Multiplanar reformatting' or 'Maximum intensity projection'
Source Image Sequence	0008,2112	SQ		ANAPCV	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	

Table 117: Image Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Position (Patient)	0020,0032	DS		ALWAYS	AUTO	Calculated value
Image Orientation (Patient)	0020,0037	DS		ALWAYS	AUTO	Calculated value
Pixel Spacing	0028,0030	DS		ALWAYS	AUTO	Calculated value
Slice Thickness	0018,0050	DS		ALWAYS	AUTO	Applied thickness
Slice Location	0020,1041	DS		ALWAYS	AUTO	Relative position of a slice on orthogonal to the slice axis

Table 118: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	Calculated value
Columns	0028,0011	US		ALWAYS	AUTO	Calculated value
Pixel Representation	0028,0103	US		ALWAYS	AUTO	Calculated value
Pixel Data	7FE0,0010	OW/ OB		ALWAYS	AUTO	Reconstructed image data

Table 119: CT Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	1st value is DERIVED 2nd value is SECONDARY 3rd value is AXIAL or LOCALIZER 4th value is MPR or MIP
Samples per Pixel	0028,0002	US	1	ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS	MONOCHROME2	ALWAYS	AUTO	

Table 120: VOI LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Window Center	0028,1050	DS		ALWAYS	AUTO	Applied to slices value

Window Width	0028,1051	DS	ALWAYS	AUTO	Applied to slices value
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Table 121: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	CONFIG	
Instance Creation Date	0008,0012	DA		ALWAYS	AUTO	creation date
Instance Creation Time	0008,0013	TM		ALWAYS	AUTO	creation time
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.2	ALWAYS	AUTO	
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	

8.1.2. Usage of Attributes from Received IOD

All stored image with pixel data can be opened by the available viewer (DIAGNET) on the IntelliSpace PACS DCX R3.1.0 server or as web-viewer loaded on a client PC.

8.1.3. Attribute Mapping

Not applicable.

8.1.4. Coerced/Modified fields

Coerced Fields:

Coerced fields and conditions for the coercion are listed in following table.

Table 122: Coerced fields and conditions for the coercion

Attribute name	Tag	Coercion Conditions
Specific Character Set	0008,0005	Always internally modified to ISO_IR 192
Patient ID	0010,0020	Value is missing in received instance, patient relationship or details are changed manually by authorized user, automatically on processing of Merge event from RIS or may be changed after patient identification by specific rules for reconciliation.
Study Date	0008,0020	Value is missing in received instance; study relationship is changed manually by authorized user or changed automatically for reconciliation.
Study Time	0008,0030	Value is missing in received instance; study relationship is changed manually by authorized user or changed automatically for reconciliation.
Study ID	0020,0010	Value is missing in received instance; study relationship is changed manually by authorized user of changed automatically for reconciliation.
Time zone Offset From UTC	0008,0201	Value is missing in received instance.
Body Part Examined	0018,0015	Changed automatically for reconciliation.
Protocol Name	0018,1030	Changed automatically for reconciliation.
Series Description	0008,103E	Changed automatically for reconciliation.
Series Number	0020,0011	Value is missing in received instance or series relationship is changed manually by authorized user or changed automatically for reconciliation.
Instance Number	0020,0013	Value is missing in received instance.
SOP Instance UID	0008,0018	Instance acceptance mode of Storage Provider is defined to "keep previous" and instance with such UID already exists in local database.
Referenced Study Sequence	0008,1110	Patient relationship is changed manually by authorized user.
Referenced Patient Sequence	0008,1120	Patient relationship is changed manually by authorized user.
Referenced Visit Sequence	0008,1125	Patient relationship is changed manually by authorized user.
Patient's Insurance Plan Code Sequence	0010,0050	Patient relationship is changed manually by authorized user.

Attribute name	Tag	Coercion Conditions
Patient's Primary Language Code Sequence	0010,0101	Patient relationship is changed manually by authorized user.
Other Patient IDs Sequence	0010,1002	Patient relationship is changed manually by authorized user.
Patient's Birth Name	0010,1005	Patient relationship is changed manually by authorized user.
Insurance Plan Identification	0010,1050	Patient relationship is changed manually by authorized user.
Patient's Mother's Birth Name	0010,1060	Patient relationship is changed manually by authorized user.
Military Rank	0010,1080	Patient relationship is changed manually by authorized user.
Branch of Service	0010,1081	Patient relationship is changed manually by authorized user.
Medical Record Locator	0010,1090	Patient relationship is changed manually by authorized user.
Country of Residence	0010,2150	Patient relationship is changed manually by authorized user.
Region of Residence	0010,2152	Patient relationship is changed manually by authorized user.
Ethnic Group	0010,2160	Patient relationship is changed manually by authorized user.
Occupation	0010,2180	Patient relationship is changed manually by authorized user.
Smoking Status	0010,21A0	Patient relationship is changed manually by authorized user.
Last Menstrual Date	0010,21D0	Patient relationship is changed manually by authorized user.
Patient's Religious Preference	0010,21F0	Patient relationship is changed manually by authorized user.
Clinical Trial Sponsor Name	0012,0010	Patient relationship is changed manually by authorized user.
Clinical Trial Protocol ID	0012,0020	Patient relationship is changed manually by authorized user.
Clinical Trial Protocol Name	0012,0021	Patient relationship is changed manually by authorized user.
Clinical Trial Site ID	0012,0030	Patient relationship is changed manually by authorized user.
Clinical Trial Site Name	0012,0031	Patient relationship is changed manually by authorized user.
Clinical Trial Subject ID	0012,0040	Patient relationship is changed manually by authorized user.
Clinical Trial Subject Reading ID	0012,0042	Patient relationship is changed manually by authorized user.
Referenced Patient Alias Sequence	0038,0004	Patient relationship is changed manually by authorized user.
Pertinent Document Sequence	0038,0100	Patient relationship is changed manually by authorized user.
Patient Clinical Trial Participation Sequence	0038,0502	Patient relationship is changed manually by authorized user.
Specimen Accession Number	0040,050A	Patient relationship is changed manually by authorized user.
Specimen Sequence	0040,0550	Patient relationship is changed manually by authorized user.
Patient's Name	0010,0010	Patient relationship is changed manually by authorized user or change automatically for reconciliation.
Issuer of Patient ID	0010,0021	Patient relationship is changed manually by authorized user.
Patient's Birth Date	0010,0030	Patient relationship is changed manually by authorized user or changed automatically for reconciliation.
Patient's Birth Time	0010,0032	Patient relationship is changed manually by authorized user or changed automatically for reconciliation.
Patient's Sex	0010,0040	Patient relationship is changed manually by authorized user or changed automatically for reconciliation.
Other Patient IDs	0010,1000	Patient relationship is changed manually by authorized user.
Other Patient Names	0010,1001	Patient relationship is changed manually by authorized user.
Patient's Age	0010,1010	Patient relationship is changed manually by authorized user.
Patient's Size	0010,1020	Patient relationship is changed manually by authorized user.
Patient's Weight	0010,1030	Patient relationship is changed manually by authorized user.
Patient's Address	0010,1040	Patient relationship is changed manually by authorized user.
Medical Alerts	0010,2000	Patient relationship is changed manually by authorized user.
Allergies	0010,2110	Patient relationship is changed manually by authorized user.
Patient's Telephone Numbers	0010,2154	Patient relationship is changed manually by authorized user.
Additional Patient's History	0010,21B0	Patient relationship is changed manually by authorized user.
Pregnancy Status	0010,21C0	Patient relationship is changed manually by authorized user.
Patient Comments	0010,4000	Patient relationship is changed manually by authorized user.
Special Needs	0038,0050	Patient relationship is changed manually by authorized user.

Attribute name	Tag	Coercion Conditions
Patient State	0038,0500	Patient relationship is changed manually by authorized user.
Confidentiality Constraint on Patient Data Description	0040,3001	Patient relationship is changed manually by authorized user.
Referring Physician Identification Sequence	0008,0096	Patient relationship is changed manually by authorized user.
Admitting Diagnoses Code Sequence	0008,1084	Patient relationship is changed manually by authorized user.
Route of Admissions	0038,0016	Patient relationship is changed manually by authorized user.
Schedule Admission Date	0038,001A	Patient relationship is changed manually by authorized user.
Scheduled Admission Time	0038,001B	Patient relationship is changed manually by authorized user.
Scheduled Discharge Date	0038,001C	Patient relationship is changed manually by authorized user.
Scheduled Discharge Time	0038,001D	Patient relationship is changed manually by authorized user.
Scheduled Patient Institution Residence	0038,001E	Patient relationship is changed manually by authorized user.
Discharge Date	0038,0030	Patient relationship is changed manually by authorized user.
Discharge Time	0038,0032	Patient relationship is changed manually by authorized user.
Discharge Diagnosis Description	0038,0040	Patient relationship is changed manually by authorized user.
Discharge Diagnosis Code Sequence	0038,0044	Patient relationship is changed manually by authorized user.
Service Episode ID	0038,0060	Patient relationship is changed manually by authorized user.
Issuer of Service Episode ID	0038,0061	Patient relationship is changed manually by authorized user.
Service Episode Description	0038,0062	Patient relationship is changed manually by authorized user.
Visit Comments	0038,4000	Patient relationship is changed manually by authorized user.
Referring Physician's Name	0082,0090	Patient relationship is changed manually by authorized user or changed automatically for reconciliation.
Referring Physician's Address	0008,0092	Patient relationship is changed manually by authorized user.
Referring Physician's Telephone Numbers	0008,0094	Patient relationship is changed manually by authorized user.
Study Description	0008,1030	Changed automatically for reconciliation of the series.
Admitting Diagnoses Description	0008,1080	Patient relationship is changed manually by authorized user.
Visit Status ID	0038,0008	Patient relationship is changed manually by authorized user.
Admission ID	0038,0010	Patient relationship is changed manually by authorized user.
Issuer of Admission ID	0038,0011	Patient relationship is changed manually by authorized user.
Admitting Date	0038,0020	Patient relationship is changed manually by authorized user.
Admitting Time	0038,0021	Patient relationship is changed manually by authorized user.
Current Patient Location	0038,0300	Patient relationship is changed manually by authorized user or changed automatically for reconciliation.
Patient's Institution Residence	0038,0400	Patient relationship is changed manually by authorized user.
Modality	0008,0060	Changed automatically for reconciliation of the series.
Modalities in Study	0008,0061	Study relationship is changed manually by authorized user or changed automatically for reconciliation.
Referring Physician Identification Sequence	0008,0096	Study relationship is changed manually by authorized user.
Physician(s) Reading Study Identification Sequence	0008,1062	Study relationship is changed manually by authorized user.
Referenced Performed Procedure Step Sequence	0008,1111	Study relationship is changed manually by authorized user.
Clinical Trial Time Point ID	0012,0050	Study relationship is changed manually by authorized user.
Clinical Trial Time Point Description	0012,0051	Study relationship is changed manually by authorized user.
Series in Study	0020,1000	Study relationship is changed manually by authorized user.
Acquisitions in Study	0020,1004	Study relationship is changed manually by authorized user.
Other Study Numbers	0020,1070	Study relationship is changed manually by authorized user.
Study Status ID	0032,000A	Study relationship is changed manually by authorized user.
Study Priority ID	0032,000C	Study relationship is changed manually by authorized user.
Study Verified Date	0032,0032	Study relationship is changed manually by authorized user.
Study Verified Time	0032,0033	Study relationship is changed manually by authorized user.

Attribute name	Tag	Coercion Conditions
Study Read Date	0032,0034	Study relationship is changed manually by authorized user.
Study Read Time	0032,0035	Study relationship is changed manually by authorized user.
Scheduled Start Date	0032,1000	Study relationship is changed manually by authorized user.
Scheduled Start Time	0032,1001	Study relationship is changed manually by authorized user.
Scheduled Stop Date	0032,1010	Study relationship is changed manually by authorized user.
Scheduled Stop Time	0032,1011	Study relationship is changed manually by authorized user.
Scheduled Study Location	0032,1020	Study relationship is changed manually by authorized user.
Scheduled Study Location AE Title	0032,1021	Study relationship is changed manually by authorized user.
Reason for Study	0032,1030	Study relationship is changed manually by authorized user.
Requesting Physician Identification Sequence	0032,1031	Study relationship is changed manually by authorized user.
Study Arrival Date	0032,1040	Study relationship is changed manually by authorized user.
Study Arrival Time	0032,1041	Study relationship is changed manually by authorized user.
Study Completion Date	0032,1050	Study relationship is changed manually by authorized user.
Study Completion Time	0032,1051	Study relationship is changed manually by authorized user.
Study Component Status ID	0032,1055	Study relationship is changed manually by authorized user.
Requested Contrast Agent	0032,1070	Study relationship is changed manually by authorized user.
Study Comments	0032,4000	Study relationship is changed manually by authorized user.
Scheduled Procedure Step Sequence	0040,0100	Study relationship is changed manually by authorized user.
Scheduled Step Attributes Sequence	0040,0270	Study relationship is changed manually by authorized user.
Request Attributes Sequence	0040,0275	Study relationship is changed manually by authorized user.
Comments on the Scheduled Procedure Step	0040,0400	Study relationship is changed manually by authorized user.
Requested Procedure ID	0040,1001	Study relationship is changed manually by authorized user.
Reason for the Requested Procedure	0040,1002	Study relationship is changed manually by authorized user.
Requested Procedure Priority	0040,1003	Study relationship is changed manually by authorized user.
Requested Procedure Location	0040,1005	Study relationship is changed manually by authorized user.
Confidentiality Code	0040,1008	Study relationship is changed manually by authorized user.
Reporting Priority	0040,1009	Study relationship is changed manually by authorized user.
Reason for Requested Procedure Code Sequence	0040,100A	Study relationship is changed manually by authorized user.
Names of Intended Recipients of Results	0040,1010	Study relationship is changed manually by authorized user.
Intended Recipients of Results identification Sequence	0040,1011	Study relationship is changed manually by authorized user.
Requested Procedure Comments	0040,1400	Study relationship is changed manually by authorized user.
Issue Date of Imaging Service Request	0040,2004	Study relationship is changed manually by authorized user.
Issue Time of Imaging Service Request	0040,2005	Study relationship is changed manually by authorized user.
Order Entered By	0040,2008	Study relationship is changed manually by authorized user.
Order Enterer's Location	0040,2009	Study relationship is changed manually by authorized user.
Order Callback Phone Number	0040,2010	Study relationship is changed manually by authorized user.
Imaging Service Request Comments	0040,2400	Study relationship is changed manually by authorized user.
Scheduled Processing Applications Code Sequence	0040,4004	Study relationship is changed manually by authorized user.
Scheduled Procedure Step Start Date and Time	0040,4005	Study relationship is changed manually by authorized user.
Scheduled Procedure Step Modification Date and Time	0040,4010	Study relationship is changed manually by authorized user.
Expected Completion Date and Time	0040,4011	Study relationship is changed manually by authorized user.
Resulting General Purpose Performed Procedure Steps Sequence	0040,4015	Study relationship is changed manually by authorized user.

Attribute name	Tag	Coercion Conditions
Referenced General Purpose Scheduled Procedure Step Sequence	0040,4016	Study relationship is changed manually by authorized user.
Scheduled Work item Code Sequence	0040,4018	Study relationship is changed manually by authorized user.
Referenced Request Sequence	0040,A370	Study relationship is changed manually by authorized user.
Accession Number	0008,0050	Study relationship is changed manually by authorized user or changed automatically for reconciliation.
Referring Physician's Name	0008,0090	Study relationship is changed manually by authorized user.
Name of Physician(s) Reading Study	0008,1060	Study relationship is changed manually by authorized user or changed automatically for reconciliation.
Performing Physician(s) Name	0008,1050	Change automatically for reconciliation.
Referenced Series Sequence	0008,1115	Study relationship is changed manually by authorized user.
Related Series Sequence	0008,1250	Study relationship is changed manually by authorized user.
Study Instance UID	0020,000D	Study relationship is changed manually by authorized user.
Requesting Physician	0032,1032	Study relationship is changed manually by authorized user.
Requesting Service	0032,1033	Study relationship is changed manually by authorized user or changed automatically for reconciliation.
Requested Procedure Description	0032,1060	Study relationship is changed manually by authorized user.
Request Procedure Code Sequence	0032,1064	Study relationship is changed manually by authorized user.
Scheduled Procedure Step ID	0040,0009	Study relationship is changed manually by authorized user.
Performed Series Sequence	0040,0340	Study relationship is changed manually by authorized user.
Requested Procedure ID	0040,1001	Study relationship is changed manually by authorized user.
Patient Transport Arrangements	0040,1004	Study relationship is changed manually by authorized user.
Placer Order Number / Imaging Service Request	0040,2016	Study relationship is changed manually by authorized user.
Filler Order Number / Imaging Service Request	0040,2017	Study relationship is changed manually by authorized user.
General Purpose Scheduled Procedure Step Priority	0040,4003	Study relationship is changed manually by authorized user.
Input Information Sequence	0040,4021	Study relationship is changed manually by authorized user.
Relevant Information Sequence	0040,4022	Study relationship is changed manually by authorized user.
Clinical Trial Coordinating Center Name	0012,0060	Patient relationship is changed manually by authorized user.
Clinical Trial Series ID	0012,0071	Patient relationship is changed manually by authorized user.
Clinical Trial Series Description	0012,0072	Patient relationship is changed manually by authorized user.
Series Instance UID	0020,000E	Series relationship is changed manually by authorized user.
Modified Attribute Sequence	0400,0550	Instance attributes are modified by authorized user.
Attribute Modification Sequence	0400,0562	Instance attributes are modified by authorized user.
Modifying System	0400,0563	Instance attributes are modified by authorized user.
Source of Previous Values	0400,0564	Instance attributes are modified by authorized user.
Reason for the Attribute Modification	0040,0565	Instance attributes are modified by authorized user.
Patient Identity Removed	0012,0062	Instance is anonymized by authorized user.
De-identification Method	0012,0063	Instance is anonymized by authorized user.

Modified fields:

IntelliSpace PACS DCX R3.1.0 allows the authorized user to modify attributes of the stored images. Modified images retain the original Study, Series and Image UID.

Modified fields are listed in following table.

Table 123: Modified Attributes

Attribute Name	Tag
Study Date	0008,0020

Attribute Name	Tag
Series Date	0008,0021
Study Time	0008,0030
Series Time	0008,0031
Accession Number	0008,0050
Modality	0008,0060
Referring Physician's Name	0008,0090
Study Description	0008,1030
Series Description	0008,103E
Name of Physician(s) Reading Study	0008,1060
Patient's Name	0010,0010
Patient ID	0010,0020
Patient's Birth Date	0010,0030
Patient's Birth Time	0010,0032
Patient's Sex	0010,0040
Other Patient IDs	0010,1000
Other Patient Names	0010,1001
Patient's Weight	0010,1030
Patient's Address	0010,1040
Medical Alerts	0010,2000
Allergies	0010,2110
Patient Telephone Numbers	0010,2154
Additional Patient History	0010,21B0
Pregnancy Status	0010,21C0
Patient Comments	0010,4000
Body Part Examined	0018,0015
Protocol Name	0018,1030
Study Instance UID	0020,000D
Series Instance UID	0020,000E
Study ID	0020,0010
Series Number	0020,0011
Requesting Service	0032,1033
Study Comments	0032,4000
Special Needs	0038,0050
Patient State	0038,0500
Scheduled Performing Physician's Name	0040,0006
Confidentiality Constraint on Patient Data Description	0040,3001

8.2. Data Dictionary of Private Attributes

Not applicable

8.3. Coded Terminology and Templates

Not applicable

8.3.1. Context Groups

Not applicable.

8.3.2. Template Specifications

Not applicable.

8.3.3. Private code definitions

Not applicable.

8.4. Grayscale Image consistency

The high-resolution display monitor attached to the product must be calibrated beforehand by using the device specific tools.

8.5. Standard Extended/Specialized/Private SOPs

Not applicable.

8.6. Private Transfer Syntaxes

Not applicable.