

DICOM Conformance Statement

IntelliSpace PACS 4.4.551.0



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1. DICOM Conformance Statement Overview

IntelliSpace PACS 4.4.551.0 product is a medical image and information distribution system designed for integration into a medical institution's existing healthcare network. The product utilizes the medical industry standard DICOM 3.0 protocol to exchange information with other DICOM compliant devices on the network and Removable Media. The primary use of the DICOM protocol within the IntelliSpace PACS 4.4.551.0 product is for local and remote storage of images, remote Display/Render and printing of images, remote query of image storage related information and local query of Modality Worklist information and Workflow Management for Modality Performed Procedures, Modality Worklist and Storage Commitment.

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
Print Management				
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Yes	No	N/A
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No	N/A
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	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
Stored Print Storage	1.2.840.10008.5.1.1.27	Yes	No	N/A
Query/Retrieve				
Patient Root QR Information Model - C-FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Yes	Yes	N/A
Patient Root QR Information Model - C-MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Yes	Yes	N/A
Patient/Study Only QR Info. Model - C-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 - C-MOVE SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.2	Yes	Yes	N/A
Study Root QR Information Model - C-FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes	N/A
Study Root QR Information Model - C-MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes	N/A
Transfer				
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	No
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	No
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	No
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Yes	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes	No
Encapsulated CDA Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.2	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	No
Pseudo-Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.3	Yes	Yes	No
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	Yes	Yes	No
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
X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	Yes	Yes
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

SOP Class		User of Service (SCU)	Provider of Service (SCP)	Display
Name	UID			
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Yes	Yes	Yes*
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	Yes	Yes
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	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
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	Yes	Yes	Yes
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	Yes	Yes	Yes
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
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
RT Ion Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.8	Yes	Yes	No
RT Ion Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.9	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
Enhanced US Volume Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.2	Yes	Yes	No
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Yes	Yes	No
Spatial Registration Storage SOP Class	1.2.840.10008.5.1.4.1.1.66.1	Yes	Yes	No
Spatial Fiducials Storage SOP Class	1.2.840.10008.5.1.4.1.1.66.2	Yes	Yes	No
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Yes	Yes	No
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 SOP Class	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
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes	Yes
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes	Yes
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
Ophthalmic Photography 8 Bit Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage SOP Class	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
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Yes	Yes	No
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
Detail SR Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.3	Yes	Yes	No
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Yes	Yes	No
Procedure Log Storage	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	Yes
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
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	Yes	Yes	No

SOP Class		User of Service (SCU)	Provider of Service (SCP)	Display
Name	UID			
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
Transfer of Private SOP classes				
GE Private eNTEGRA Storage (Xeleris Auto Start/eNTEGRA Protocol Data or NM Genie)	1.2.840.113619.4.27	Yes	Yes	No
Philips Private EasyVision 3D Volume Object Storage	1.3.46.670589.5.0.2	Yes	Yes	No
Philips Private EasyVision MR Cardio Analysis Storage	1.3.46.670589.5.0.11	Yes	Yes	No
Philips Private EasyVision MR Cardio Storage	1.3.46.670589.5.0.8	Yes	Yes	No
Philips Private EasyVision Surface Storage	1.3.46.670589.5.0.3	Yes	Yes	No
Philips Private EasyVision Volume Storage	1.3.46.670589.5.0.1	Yes	Yes	No
Philips Private iE33 3D NEO Presentation State Subpage Storage	1.3.46.670589.2.5.1.1	Yes	Yes	No
Philips Private MR Cardio Profile Image Storage	1.3.46.670589.5.0.7	Yes	Yes	No
Philips Private MR Series Data Storage	1.3.46.670589.11.0.0.12.2	Yes	Yes	No
Philips Private MR Spectrum Storage	1.3.46.670589.11.0.0.12.1	Yes	Yes	No
Philips Private Reconstructed X-ray Storage	1.3.46.670589.2.4.1.1	Yes	Yes	No
Philips Private ViewForum 3D Volume New Storage	1.3.46.670589.5.0.1.1	Yes	Yes	No
Philips Private ViewForum 3D Volume Object New Storage	1.3.46.670589.5.0.2.1	Yes	Yes	No
Philips Private ViewForum CT Synthetic Image Storage	1.3.46.670589.5.0.9	Yes	Yes	No
Philips Private ViewForum CX Synthetic Image Storage	1.3.46.670589.5.0.12	Yes	Yes	No
Philips Private ViewForum MR Cardio Analysis New Storage	1.3.46.670589.5.0.11.1	Yes	Yes	No
Philips Private ViewForum MR Cardio New Storage	1.3.46.670589.5.0.8.1	Yes	Yes	No
Philips Private ViewForum MR Synthetic Image Storage	1.3.46.670589.5.0.10	Yes	Yes	No
Philips Private ViewForum Perfusion Analysis Storage	1.3.46.670589.5.0.14	Yes	Yes	No
Philips Private ViewForum Perfusion Storage	1.3.46.670589.5.0.13	Yes	Yes	No
Philips Private ViewForum Surface New Storage	1.3.46.670589.5.0.3.1	Yes	Yes	No
Philips Private X-Ray Image Storage	1.3.46.670589.2.3.1.1	Yes	Yes	Yes
Workflow Management				
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Yes	Yes	N/A
Modality Worklist Information Model - C-FIND SOP Class	1.2.840.10008.5.1.4.31	No	Yes	N/A
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Yes	Yes	N/A

* Viewing of Breast Tomosynthesis Image Storage SOP class will be supported only if Enhanced Mammography Option is purchased.

Table 2: Media Services

Table of Supported Media Services:

Write Files (FSC)	Read Files (FSR)	Update Files (FSU)
Yes	No	No

The media service will export any DICOM SOP Class (see the above table the Section of the SOP Classes of transfer type) that IntelliSpace PACS 4.4.551.0 is supporting.

The Transfer Syntaxes for the exporting on media will be:

1. The following transfers syntaxes received on the network are preserved for the media exchange:

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_2000 Image Compression	1.2.840.10008.1.2.4.91

2. The following transfers syntaxes received over the network are exchanged on the media with the Explicit Little Endian transfer syntax:

JPEG_LOSSLESS_ Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57
JPEG_2000_LOSSLESS_ONLY	1.2.840.10008.1.2.4.90
RLE Lossless	1.2.840.10008.1.2.5

In addition, the SOP Classes created by the IntelliSpace PACS 4.4.551.0 (GSPS and Encapsulated PDF) will be exchanged on the media with the default transfer syntax: Explicit little Endian. The Encapsulated PDF SOP Class will be created by IntelliSpace PACS 4.4.551.0 Client only for the purpose of exporting the Radiology Report (received in HL7 ORU message) on Media. For more details on the Created Encapsulated PDF SOP Class, see Chapter 8.

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3. Introduction

3.1. Revision History

Table 3: Revision History

Document Version	Date of Issue	Status	Description
00	31-Mar-2017	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 Abbreviation

Table 4: Definitions, Terms and Abbreviations

Abbreviations / Terms	Explanation
AE	Application Entity
ANSI	American National Standard Institute
AP	Application Profile
BOT	Basic Offset Table
CD	Compact Disc
CR	Computed Radiography
CT	Computed Tomography
DICOM	Digital Imaging and Communication in Medicine
DIMSE	DICOM Message Service Element
DIMSE-C	DIMSE-Composite
DIMSE-N	DIMSE-Normalized
DX	Digital X-Ray
DVD	Digital Video Disc
EBE	Explicit VR Big Endian
ELE	Explicit VR Little Endian
FSC	File-set Creator
FSR	File-set Reader
FSU	File-set Updater
GUI	Graphic User Interface
GSPS	Grayscale Softcopy Presentation State
HIS	Hospital Information System
HL7	Health Level Seven
IHE	Integrating the Healthcare Enterprise
ILE	Implicit VR Little Endian
IOD	Information Object Definition
MPPS	Modality Performed Procedure Step
MR	Magnetic Resonance
NEMA	National Electrical Manufacturers Association
NM	Nuclear Medicine
OID	Object Identifier
PDU	Protocol Data Unit
RF	X-Ray Radiofluoroscopic
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
TCP/IP	Transmission Control Protocol/ Internet Protocol
UID	Unique Identifier
US	Ultrasound
USMF	Ultrasound Multi-frame
WLM	Worklist Management
XA	X-Ray Angiographic
VL	Visible Light

3.5. References

[DICOM] Digital Imaging and Communications in Medicine, Parts 1 - 20 (NEMA PS 3.1- PS 3.20), 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/>

4. Networking

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 4.4.551.0 DICOM Server, IntelliSpace PACS 4.4.551.0 Worklist Server, and IntelliSpace PACS 4.4.551.0 Radiology Client Application Entities are all integrated parts of the IntelliSpace PACS 4.4.551.0 product.

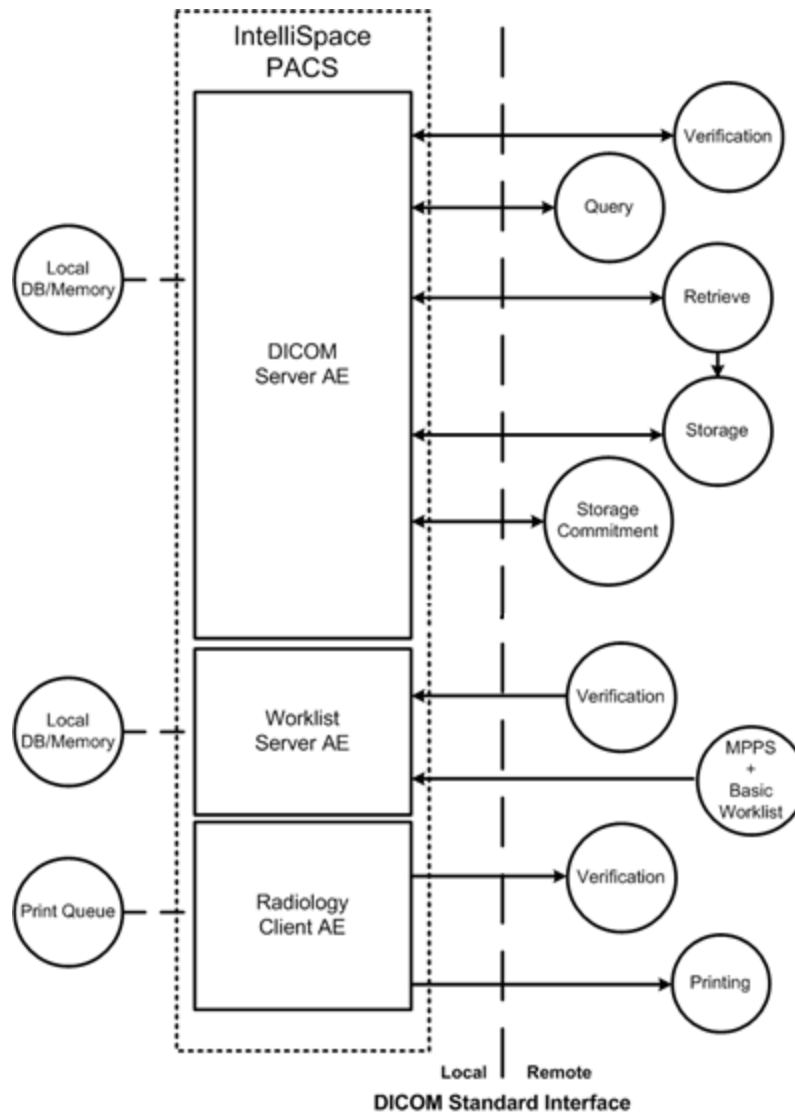


Figure 1: Application Data Flow Diagram

4.1.2. Functional Definition of AE's

4.1.2.1. Functional Definition of IntelliSpace PACS 4.4.551.0 DICOM Radiology Client AE

The IntelliSpace PACS 4.4.551.0 Radiology Client is the Image Display Viewer and supports the DICOM Query & Retrieve SCU (iQuery) to Query and Retrieve images from other Archives. In addition the IntelliSpace PACS 4.4.551.0 Radiology Client supports the export of DICOM Study on Removable media CD/DVD in DICOM Part 10 format with DICOMDIR. Furthermore the Client also supports the DICOM Print SCU. The IntelliSpace PACS 4.4.551.0 Client will initiate DICOM associations for DICOM Printing services on an as needed basis dependent upon interactive requests from users of the system.

When user invokes a print job and the SCU uses the SOP classes of a film session, a film box and image boxes for acquiring all the information which is required for a film session, the N-ACTION is used to print the film session. The DIMSE services of the Printer SOP Class and the Print Job SOP Class allow the SCU to control the print jobs and printer status information of the SCP.

4.1.2.2. Functional Definition of IntelliSpace PACS 4.4.551.0 DICOM Server AE

The IntelliSpace PACS 4.4.551.0 DICOM Server can both initiate and receive DICOM association requests. It will be started automatically as part of the operating system. Once started, the IntelliSpace PACS 4.4.551.0 DICOM Server will wait for other applications to connect to its DICOM Storage service at the presentation address configured for its Application Entity Titles. IntelliSpace PACS 4.4.551.0 supports multiple healthcare organizations in a single IntelliSpace PACS 4.4.551.0 database. The name of the organization is also the AE Title of that organization. IntelliSpace PACS 4.4.551.0 client applications also have the ability to initiate DICOM associations by the IntelliSpace PACS 4.4.551.0 DICOM Server to remote DICOM devices for Storage and Query/Retrieve services.

4.1.2.3. Functional Definition of IntelliSpace PACS 4.4.551.0 DICOM Worklist Server AE

The IntelliSpace PACS 4.4.551.0 Worklist Server runs as a service and will be automatically started as part of the operating system. Once started, the IntelliSpace PACS 4.4.551.0 Worklist Server will wait for other applications to connect to its DICOM Modality Worklist service at the presentation address configured.

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. IntelliSpace PACS 4.4.551.0 DICOM Radiology Client 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.

Table 5: SOP Classes for IntelliSpace PACS 4.4.551.0 DICOM Radiology Client AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	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.

4.2.1.2. Association Policies

4.2.1.2.1. General

The Radiology Client will initiate DICOM associations for the DICOM Basic Printing Service and the DICOM Verification Service. The IntelliSpace PACS 4.4.551.0 Radiology Client application supports a maximum PDU size of 28K.

The DICOM standard application context is specified as follows:

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 IntelliSpace PACS 4.4.551.0 Radiology Client application only initiates a single association at a time for the DICOM Basic Printing Service.

4.2.1.2.3. Asynchronous Nature

The IntelliSpace PACS 4.4.551.0 Radiology Client application does not request multiple outstanding transactions over the same association.

4.2.1.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are as follows:

Table 7: DICOM Implementation Class and Version for IntelliSpace PACS 4.4.551.0 DICOM Radiology Client AE

Description	Value
Implementation Class UID	1.3.46.670589.42.1.4.4.5
Implementation Version Name	PHISPACS44550

4.2.1.2.5. Communication Failure Handling

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

Table 8: Communication Failure Behavior

Exception	Behavior
ARTIM Time-out	The Association is aborted using AP-ABORT and command marked as failed. The reason is logged and reported to the user.

4.2.1.3. Association Initiation Policy

The Application Entity will respond on a received reject Association attempt as shown in the following table:

Table 9: Association Rejection response

Result	Source	Reason/Diagnosis	Explanation
1 - rejected-permanent	1 - DICOM UL service-user	1 - no-reason-given	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message
		2 - application-context-name-not-supported	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message
		3 - calling-AE-title-not-recognized	no association accomplished - error in log
		7 - called-AE-title-not-recognized	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message
	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	

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

The behavior of the AE on receiving an association abort is summarized in next table:

Table 10: Association Abort Handling

Source	Reason/Diagnosis	Behavior
0 - DICOM UL service-user (initiated abort)	0 - reason-not-specified	Association is closed and error message is displayed
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	

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

4.2.1.3.1.1. Description and Sequencing of Activities

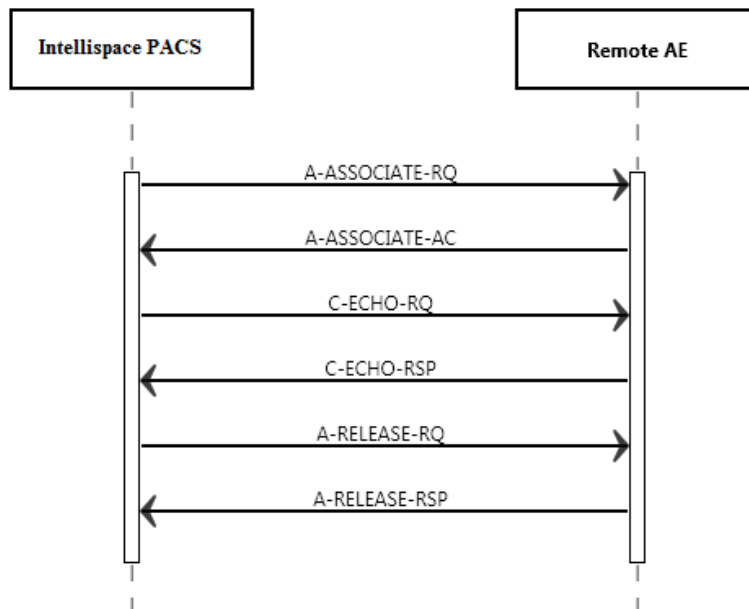


Figure 2: Sequence of C-Echo as SCU

4.2.1.3.1.2. Proposed Presentation Contexts

The presentation contexts are defined in next table.

Table 11: Proposed Presentation Contexts for (Real-World) Activity – Verification as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
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

4.2.1.3.1.3. SOP Specific Conformance for Verification SOP Class

4.2.1.3.1.3.1. Dataset Specific Conformance for Verification C-ECHO SCU

The details regarding the response behavior to status codes are provided in next table.

Table 12: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Confirmation	The SCP has successfully responded to the verification request

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

4.2.1.3.2.1. Description and Sequencing of Activities

The IntelliSpace PACS 4.4.551.0 Radiology Client application entity will establish and manage associations with remote DICOM entities to service user requests for DICOM Image Printing. User requests for DICOM Image Printing are initiated by user interaction with the application interface.

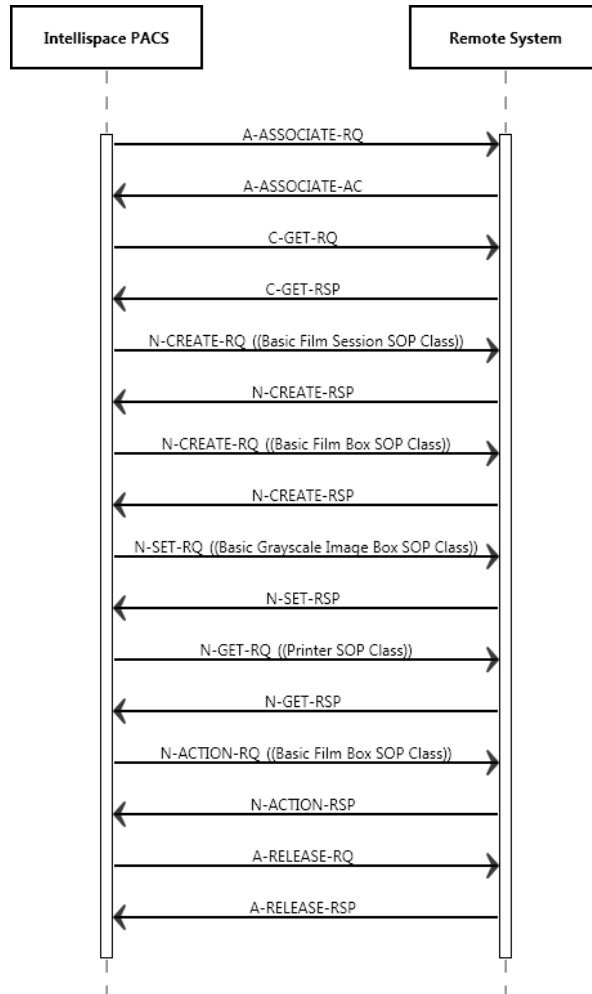


Figure 3: Sequence of Print Management as SCU

Note: The Printer Status N-GET and the N-EVENT-REPORT are Asynchronous messages that may occur at any time it is needed during the Print association open.

4.2.1.3.2.2. Proposed Presentation Contexts

The presentation contexts are defined in next table.

Table 13: Proposed Presentation Contexts for (Real-World) Activity – Print Management As SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	N/A	N/A	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

4.2.1.3.2.3. SOP Specific Conformance for Basic Film Box SOP Class of the Basic Grayscale Print Management Meta SOP Class

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

4.2.1.3.2.3.1. Dataset Specific Conformance for Basic Film Box N-ACTION SCU

An N-ACTION Request is issued to instruct the Print SCP to print the contents of the Film Box. The Action Reply argument in an N-ACTION response is not evaluated. The behavior of Hardcopy AE when encountering status codes in an N-ACTION response is summarized in the Table below:

Table 14: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	The SCP has completed the operation successfully.	The film has been accepted for printing
Failed	C602	Unable to create Print Job SOP Instance; print queue is full.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is displayed.
	C603	Film Box is empty, does not contain any image instance OR Image size is larger than Image Box size.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is displayed.
	C613	Combined Print Image Size is larger than Image Box size.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is displayed.
Warning	B604	Image size is larger than Image Box size. The image has been unmagnified.	The N-ACTION operation is considered successful but the status meaning is displayed.
	B609	Image size is larger than Image Box size. The image has been cropped to fit.	The N-ACTION operation is considered successful but the status meaning is displayed.
	B60A	Image size or Combined Print Image Size is larger than Image Box size. The image or combined Print Image has been decimated to fit.	The N-ACTION operation is considered successful but the status meaning is displayed.
Other	xxxx	For any other Failed	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is displayed.

4.2.1.3.2.3.2. Dataset Specific Conformance for Basic Film Box N-CREATE SCU

Detail regarding the Dataset Specific response behavior will be reported in this section.

Table 15: Basic Film Box Presentation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Film Orientation	2010,0040	CS	LANDSCAPE, PORTRAIT	VNAPCV	USER	
Film Size ID	2010,0050	CS	8INX10IN, 8_5INX11IN, 10INX12IN, 10INX14IN, 11INX14IN, 11INX17IN, 14INX14IN, 14INX17IN, 24CMX24CM, 24CMX30CM, A4, A3	VNAPCV	USER	
Min Density	2010,0120	US		VNAPCV	COPY	User input
Max Density	2010,0130	US		VNAPCV	COPY	User input
Trim	2010,0140	CS	NO, YES	VNAPCV	USER	
Configuration Information	2010,0150	ST	Short Text	VNAPCV	CONFIG	

The following are the status response values for the Basic Film Box N-CREATE:

Table 16: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Film Box successfully created	Send an N-Action for the created Film box to be printed
Warning	B605	Requested Min Density or Max Density outside of printer's operating range. The printer will use its respective minimum or maximum density value instead.	Display the warning on the IntelliSpace PACS 4.4.551.0 Radiology User Interface
Failure	C616	There is an existing Film Box that has not been printed and N-ACTION at the Film Session level is not supported. A new Film Box will not be created when a previous Film Box has not been printed.	Display the error on the IntelliSpace PACS 4.4.551.0 Radiology User Interface, Printer need to clear the Error before it can get new film box/sessions to print
	0112	Invalid SOP Instance UID	Display the error on the IntelliSpace PACS 4.4.551.0 Radiology User Interface, Film Box can't be printed
	0110	Processing Failure	Display error on the IntelliSpace PACS 4.4.551.0 Radiology User Interface, Film Box can't be printed

4.2.1.3.2.4. SOP Specific Conformance for Basic Film Session SOP Class of the Basic Grayscale Print Management Meta SOP Class

The Basic Film Session IOD describes the presentation parameters which are common for all the films of a film session (e.g. number of films, film destination). The Basic Film Session SOP Instance refers to one or more Basic Film Box SOP Instances.

4.2.1.3.2.4.1. Dataset Specific Conformance for Basic Film Session N-CREATE SCU

The IntelliSpace PACS 4.4.551.0 Radiology Film Session N-CREATE is used to create an instance of the Basic Film Session SOP Class.

The following table describes the attributes being set by the N-CREATE:

Table 17: Basic Film Session SOP Class N-CREATE SCU Request Attributes

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Number of Copies	2000,0010	IS	Integer String	VNAPCV	USER	Maximum value is 10 copies
Print Priority	2000,0020	CS	LOW	VNAPCV	FIXED	

Medium Type	2000,0030	CS	BLUE FILM, CLEAR FILM, PAPER	ALWAYS	USER	
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The behavior of IntelliSpace PACS 4.4.551.0 Radiology AE when encountering status codes in an N-CREATE response is summarized in the Table below:

Table 18: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	The SCP has completed the operation successfully.	The film has been accepted for printing.
Warning	0116	Attribute Value Out of Range	The N-CREATE operation is considered successful but the status meaning is logged. Additional information in the Response identifying the attributes out of range will be logged (i.e. Elements in the Modification List/Attribute List)
	0107	Attribute List Error	The N-CREATE operation is considered successful but the status meaning is logged. Additional information in the Response identifying the attributes will be logged (i.e. Elements in the Attribute Identifier List)
Failed	0106	No Memory Allocation Available	The SCP has no more memory allocation available for the new Film session.
	0213	Temporary No Memory Allocation Available	Temporarily, the Printer has no memory allocation available. Memory will free up as printer completes printing the current print jobs. The SCU will retry creating the Film session
	0112	Invalid SOP Instance UID	Display the error on the IntelliSpace PACS 4.4.551.0 Radiology User Interface, Film Box can't be printed
	0110	Processing Failure	Display the error on the IntelliSpace PACS 4.4.551.0 Radiology User Interface, Film Box can't be printed
Other	xxxx	For any other Failed	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.

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

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

4.2.1.3.2.5.1. Dataset Specific Conformance for Basic Grayscale Image Box N-SET SCU

Details regarding the Dataset Specific response behavior will be reported in this section.

Table 19: Basic Grayscale Image Box SOP Class N-SET Response Attributes

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Position	2020,0010	US	Unsigned Short	ALWAYS	COPY	
Basic Grayscale Image Sequence	2020,0110	SQ	N/A	N/A	N/A	
>Samples Per Pixel	0028,0002	US	1	ALWAYS	FIXED	
>Photometric Interpretation	0028,0004	CS	MONOCHROME2	ALWAYS	FIXED	
>Rows	0028,0010	US	Unsigned Short	ALWAYS	COPY	
>Columns	0028,0011	US	Unsigned Short	ALWAYS	COPY	
>Pixel Aspect Ratio	0028,0034	IS	Integer String	ALWAYS	COPY	
>Bits Allocated	0028,0100	US	8	ALWAYS	FIXED	
>Bits Stored	0028,0101	US	8	ALWAYS	FIXED	
>High Bit	0028,0102	US	7	ALWAYS	FIXED	
>Pixel Representation	0028,0103	US	0000H	ALWAYS	FIXED	

>Pixel Data	7FE0,0010	OS	Pixel Data	ALWAYS	COPY
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The behavior of the IntelliSpace PACS 4.4.551.0 Radiology AE when encountering status codes in an Image Box, N-SET response is summarized in the table below:

Table 20: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	The SCP has completed the operation successfully.	The film has been accepted for printing.
Failed	C603	Image size is larger than Image Box size.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
	C605	Insufficient memory in printer to store the image.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
	C613	Combined Print Image Size is larger than Image Box size.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
Warning	B605	Requested Min Density or Max Density outside of printer's operating range.	The N-SET operation is considered successful but the status meaning is logged.
	B609	Image size is larger than Image Box size. The image has been cropped to fit.	The N-SET operation is considered successful but the status meaning is logged.
	B60A	Image size or Combined Print Image Size is larger than Image Box size. The image or combined Print Image has been decimated to fit.	The N-SET operation is considered successful but the status meaning is logged.
Other	xxxx	For any other Failed	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is displayed.

4.2.1.3.2.6. SOP Specific Conformance for Printer SOP Class of the Basic Grayscale Print Management Meta SOP Class

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

4.2.1.3.2.6.1. Dataset Specific Conformance for Printer N-GET SCU

Details regarding the Dataset Specific response behavior will be reported in this section.

Table 21: Printer SOP Class N-GET Request Attributes

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Printer Status	2110,0010	CS	String	VNAPCV	Printer	See below the Notes for Printer Status
Printer Status Info	2110,0020	CS	String	VNAPCV	Printer	See below the Note for Printer Status Info

The Printer Status information is evaluated as follows:

1. If Printer status (2110, 0010) is NORMAL, the print-job continues to be printed.
2. If Printer status (2110, 0010) is WARNING, the print-job continues to be printed. The contents of Printer Status Info (2110, 0020) is logged and reported to the IntelliSpace PACS 4.4.551.0 Display.
3. If Printer status (2110, 0010) is FAILURE, the print-job is marked as failed. The contents of Printer Status Info (2110, 0020) is logged and reported to the user on the IntelliSpace PACS 4.4.551.0 Display.

The reasons for returning specific status codes in an N-EVENT-REPORT response are summarized in the Table below:

Table 22: Status Response

Service Status	Error Code	Further Meaning	Explanation
Success	0000	The request to get printer status information was successful.	Printer accept the request to send Printer Status
Warning	0101	Received Optional Unsupported Attributes.	The contents of attribute Printer Status Info (2110, 0020) is logged and reported to the IntelliSpace PACS 4.4.551.0 Display.
	0107	Attribute List Error.	The contents of attribute Printer Status Info (2110, 0020) is logged and reported to the IntelliSpace PACS 4.4.551.0 Display.
Failure	0110	Print job failed.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported on the IntelliSpace PACS 4.4.551.0 Display.
	0112		
	0118		
	0119		
	0210		
	0211		
	0212		
	0213		

4.2.1.3.2.6.2. Dataset Specific Conformance for Printer N-EVENT-REPORT SCP

The IntelliSpace PACS 4.4.551.0 Radiology is capable of receiving an N-EVENT-REPORT request at any time during the Print Management association.

The following table describes the IntelliSpace PACS 4.4.551.0 Radiology behavior when receiving an N-EVENT-REPORT-RQ:

Table 23: N-EVENT Report Behavior

Event Type Name	Event Type ID	Behavior
Normal	1	The print-job continues to be printed.
Warning	2	The print-job continues to be printed. The contents of Printer Name (2110,0030) and Printer Status Info (2110,0020) is logged and reported on the IntelliSpace PACS 4.4.551.0 Display Screen
Failure	3	The print-job is marked as failed. The contents of Printer Name (2110,0030) and Printer Status Info (2110,0020) is logged and reported on the IntelliSpace PACS 4.4.551.0 Display Screen

The reasons for returning specific status codes in an N-EVENT-REPORT response are summarized in the Table below:

Table 24: Status Response

Service Status	Error Code	Further Meaning	Explanation
Success	0000	The request to get printer status information was successful.	Printer accepts the request to send Printer Status.
Failure	0110	No Such Event Type	An invalid Event Type ID was supplied in the N-EVENT-REPORT request.
	0113	Processing Failure	An internal error occurred during processing of the N-EVENT-REPORT.

4.2.1.4. Association Acceptance Policy

The Application Entity may reject Association attempts as shown in the table below.

Table 25: Association Reject Reasons

Result	Source	Reason/Diagnosis	Explanation
1 - rejected permanent	1 - DICOM UL service-user	1 - no-Reason-given	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message
		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	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message
		2 - protocol-version-not-supported	
3 - DICOM UL service provider (Presentation related function)	1 - temporary-congestion	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message	
	2 - local-limit-exceeded		
2 - Rejected-transient	1 - DICOM UL service-user	1 - no-Reason-given	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message
		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	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message
		2 - protocol-version-not-supported	
3 - DICOM UL service provider (Presentation related function)	1 - temporary-congestion	IntelliSpace PACS 4.4.551.0 Radiology Client displays the error message	
	2 - local-limit-exceeded		

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

Table 26: Association Abort Policies

Source	Reason/Diagnosis	Behavior
0 - DICOM UL service-user (initiated abort)	0 - reason-not-specified	Association is closed and error message is logged
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	

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

4.2.1.4.1.1. Description and Sequencing of Activities

IntelliSpace PACS 4.4.551.0 client applications use the iQuery tool of the IntelliSpace PACS 4.4.551.0 DICOM Server to initiate and manage DICOM associations with remote Application Entities that support the DICOM Query/Retrieve Service as a Service Class Provider. The iQuery tool allows IntelliSpace PACS 4.4.551.0 client applications to interact with the IntelliSpace PACS 4.4.551.0 DICOM Server via a proprietary interface. The IntelliSpace PACS 4.4.551.0 DICOM Server's iQuery tool is an interactive end-user application and will generate DICOM transactions based upon end-user initiated activities.

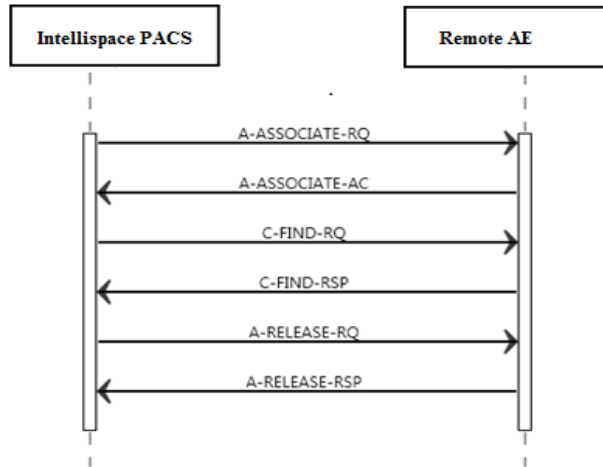


Figure 4: (Real-World) Activity – C-FIND as SCU

4.2.1.4.1.2. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 27: Proposed Presentation Contexts for (Real-World) Activity – FIND As SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Patient Root QR Information Model - C-FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	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		
Patient/Study Only QR Info. Model - C-FIND SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.1	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		
Study Root QR Information Model - C-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		

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

The iQuery tool provides standard conformance to the DICOM Patient Root Query/Retrieve Information Model C-FIND SOP class as an SCU with the following exceptions:

- The iQuery tool is integrated into the IntelliSpace PACS 4.4.551.0 Client applications. IntelliSpace PACS 4.4.551.0 Client is conforming to the IHE Radiology SWF profile Image Display actor and is supporting the DICOM C-FIND Query with all the required matching keys at the levels: Patient, Study and Series. For more details see the IHE Radiology Technical Framework, Vol. 2, and Table 4.14-1.
- Patient’s Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card “*” character at the end of its value.
- Specific Character Set attribute (0008,0005) is set to "ISO_IR 100"

IntelliSpace PACS 4.4.551.0 supports all the DICOM Query Information models. The User can select the support of one of the following DICOM Query Information models:

1. Patient Root Information Model
2. Study Root Information Model
3. Patient/Study Only Information Model

If a specific information model was chosen by the user then IntelliSpace PACS 4.4.551.0 will negotiate the association only for that specific type of information model. However, IntelliSpace PACS 4.4.551.0 user can also choose the "Unknown" information Model, which in this case IntelliSpace PACS 4.4.551.0 will negotiate for an information model in the following order: Patient Root, Study Root, and Patient/Study Only.

If none of these models are supported by the SCP an error will be logged and the association is closed.

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

Details regarding the Dataset Specific response behavior will be reported in this section.

Table 28: Supported Query Keys for Patient Root Information Model

Patient Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Q/R Patient level (Patient Root)				
Patient's Name	0010,0010	PN	Universal, Wildcard	Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
Patient ID	0010,0020	LO	Single Value, Universal, Wildcard	
Issuer of Patient ID	0010,0021	LO		
Patient's Birth Date	0010,0030	DA		
Patient's Sex	0010,0040	CS		
Q/R Study level (Patient Root)				
Study Date	0008,0020	DA	Single Value, Range, Universal	
Study Time	0008,0030	TM	Single Value, Range, Universal	
Accession Number	0008,0050	SH	Single Value, Universal, Wildcard	
Modalities in Study	0008,0061	CS	Multi Value	
Referring Physicians Name	0008,0090	PN	Single Value, Universal, Wildcard	
Study Description	0008,1030	LO	N/A	Optional Attribute. Not used in Matching but returned when available whether or not part of the request
Patient's Name	0010,0010	PN	Universal, Wildcard	Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
Patient ID	0010,0020	LO	Single Value, Universal	
Patient's Birth Date	00100030	DA		
Patient's Sex	00100040	CS		
Study Instance UID	0020,000D	UI	Single Value, Universal, List Of UID	
Study ID	0020,0010	SH	Single Value, Universal, Wildcard	
Number of Study Related Series	00201206	IS		
Number of Study Related Instances	00201208	IS		
Q/R Series level (Patient Root)				
Modality	0008,0060	CS	Single Value, Universal	
Patient ID	0010,0020	LO	Single Value, Universal	

Body Part Examined	0018,0015	CS	Universal	
Study Instance UID	0020,000D	UI	Single Value, Universal	
Series Instance UID	0020,000E	UI	Single Value, Universal, List Of UID	
Series Number	0020,0011	IS	Single Value, Universal	
> Scheduled Procedure Step ID	0040,0009	SH	Single Value, Universal, Wildcard	
Performed Procedure Step Start Date	0040,0244	DA	Single Value, Range, Universal	
Performed Procedure Step Start Time	0040,0245	TM	Single Value, Range, Universal	
Request Attribute Sequence	0040,0275	SQ	N/A	Optional Attribute. Matching is performed up to 1 item level
> Requested Procedure ID	0040,1001	SH	Single Value, Universal, Wildcard	

Table 29: C-FIND-RSP Patient Root - Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	Continue processing response
Pending	FF00	Current match is supplied	Process requests up to the set max number of responses and if the results exceed this number send A-RELEASE-RQ
	FF01	Matches are continuing but one or more Optional Keys were not supported.	
Cancel	FE00	Matching terminated due to Cancel Request	Stop waiting for response from the SCP and send the responses received before the cancel request to the IntelliSpace PACS 4.4.551.0 client.

Table 30: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged
SCP does not support any of the Query/Retrieve Information Models	The error is logged and the IntelliSpace PACS 4.4.551.0 client is notified of the failure and the association is closed

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

The iQuery tool provides standard conformance to the DICOM Patient/Study Only Query/Retrieve Information Model C-FIND SOP class as an SCU with the following exceptions:

- The iQuery tool is integrated into the IntelliSpace PACS 4.4.551.0 Client applications. IntelliSpace PACS 4.4.551.0 Client iQuery tool is conforming to the IHE Radiology SWF profile Image Display actor and is supporting the DICOM C-FIND Query with all the required matching keys at the levels: Patient and Study. For more details see the IHE Radiology Technical Framework, Vol. 2, and Table 4.14-1.
- Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
- Specific Character Set attribute (0008,0005) is set to "ISO_IR 100"

In the event where the preferred query model is not supported, first supported SCP query model will be used in the following order:

1. Patient Root Information Model
2. Study Root Information Model
3. Patient/Study Only Information Model

If none of these models are supported by the SCP an error will be logged and association is closed.

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

Detail regarding the Dataset Specific response behavior will be reported in this section.

Table 31: Supported Query Keys for Study Only Information Model

Study Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Q/R Study level (Study Root)				
Study Date	0008,0020	DA	Single Value, Range, Universal	
Study Time	0008,0030	TM	Single Value, Range, Universal	
Accession Number	0008,0050	SH	Single Value, Universal, Wildcard	
Modalities in Study	0008,0061	CS	Multi Value	
Referring Physicians Name	0008,0090	PN	Single Value, Universal, Wildcard	
Study Description	0008,1030	LO	N/A	Optional Attribute. Not used in Matching but returned existence whether or not part of the request
Patient's Name	0010,0010	PN	Universal, Wildcard	Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
Patient ID	0010,0020	LO	Single Value, Universal	
Study Instance UID	0020,000D	UI	Single Value, Universal	
Study ID	0020,0010	SH	Single Value, Universal, Wildcard	
Q/R Series level (Study Root)				
Modality	0008,0060	CS	Single Value, Universal	
Series Description	0008103E	CS		
Number of Series Related Instances	0020,1209	IS		
Study Instance UID	0020,000D	UI	Single Value, Universal	
Series Instance UID	0020,000E	UI	Single Value, Universal, List Of UID	
Series Number	0020,0011	IS	Single Value, Universal	
Scheduled Procedure Step ID	0040,0009	SH	Single Value, Universal, Wildcard	
Performed Procedure Step Start Date	0040,0244	DA	Single Value, Range, Universal	
Performed Procedure Step Start Time	0040,0245	TM	Single Value, Range, Universal	
Request Attribute Sequence	0040,0275	SQ	N/A	Optional Attribute. Matching is performed up to 1 item level
> Requested Procedure ID	0040,1001	SH	Single Value, Universal, Wildcard	
Q/R Image level (Study Root)				
SOP Class UID	0008,0060	CS	Single Value, Universal	
SOP Instance UID	0008,103E	CS		
Study Instance UID	0020,000D	UI	Single Value, Universal	
Series Instance UID	0020,000E	UI	Single Value, Universal, List Of UID	
Instance Number	0020,0013	IS		

Table 32: C-FIND-RSP Response Status for Patient/Study Only Information Model

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	Continue processing response
Pending	FF00	Current match is supplied	Process requests up to the set max number of responses and if the results exceed this number send A-RELEASE-RQ

Service Status	Error Code	Further Meaning	Behavior
	FF01	Matches are continuing but one or more Optional Keys were not supported.	
Cancel	FE00	Matching terminated due to Cancel Request	Stop waiting for response from the SCP and send the responses received before the cancel request to the IntelliSpace PACS 4.4.551.0 client.

Table 33: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged
SCP does not support any of the Query/Retrieve Information Models	The error is logged and the IntelliSpace PACS 4.4.551.0 client is notified of the failure and the association is closed

4.2.1.4.1.5. SOP Specific Conformance for PatientStudy Only QR Info. Model - FIND SOP Class (Retired)

The iQuery tool provides standard conformance to the DICOM Study Root Query/Retrieve Information Model C-FIND SOP class as an SCU with the following exceptions:

- The iQuery tool is integrated into the IntelliSpace PACS 4.4.551.0 Client applications. IntelliSpace PACS 4.4.551.0 Client is conforming to the IHE Radiology SWF profile Image Display actor and is supporting the DICOM C-FIND Query with all the required matching keys at the levels: Study and Series. For more details see the IHE Radiology Technical Framework, Vol. 2, and Table 4.14-1.
- Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
- Specific Character Set attribute (0008,0005) is set to "ISO_IR 100"

In the event where the preferred query model is not supported, first supported SCP query model will be used in the following order:

1. Patient Root Information Model
2. Study Root Information Model
3. Patient/Study Only Information Model

If none of these models are supported by the SCP an error will be logged and association is closed.

4.2.1.4.1.5.1. Dataset Specific Conformance for PatientStudy Only QR Info. Model - FIND SOP Class C-FIND-SCU

Detail regarding the Dataset Specific response behavior will be reported in this section.

Table 34: Supported Query Keys for PatientStudy Root Information Model

Study Only Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Q/R Patient level (Patient Root)				
Patient's Name	0010,0010	PN	Universal, Wildcard	Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
Patient ID	0010,0020	LO	Single Value, Universal, Wildcard	
Issuer of Patient ID	0010,0021	LO		
Patient's Birth Date	0010,0030	DA		
Patient's Sex	0010,0040	CS		

Q/R Study level (Patient/Study Only)				
Study Date	0008,0020	DA	Single Value, Range, Universal	
Study Time	0008,0030	TM	Single Value, Range, Universal	
Accession Number	0008,0050	SH	Single Value, Universal, Wildcard	
Modalities in Study	0008,0061	CS	Multi Value	
Referring Physicians Name	0008,0090	PN	Single Value, Universal, Wildcard	
Study Description	0008,1030	LO	N/A	Optional Attribute. Not used in Matching but returned existence whether or not part of the request
Patient's Name	0010,0010	PN	Universal, Wildcard	Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
Patient ID	0010,0020	LO	Single Value, Universal	
Patient's Birth Date	00100030	DA		
Patient's Sex	00100040	CS		
Issuer of Patient ID	0010,0021	LO		
Study Instance UID	0020,000D	UI	Single Value, Universal, List Of UID	
Study ID	0020,0010	SH	Single Value, Universal, Wildcard	
Number of Study Related Series	00201206	IS		
Number of Study Related Instances	00201208	IS		

Table 35: C-FIND-RSP Response Status for Patient Root Information Model

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	Continue processing response
Pending	FF00	Current match is supplied	Process requests up to the set max number of responses and if the results exceed this number send A-RELEASE-RQ
	FF01	Matches are continuing but one or more Optional Keys were not supported.	
Cancel	FE00	Matching terminated due to Cancel Request	Stop waiting for response from the SCP and send the responses received before the cancel request to the IntelliSpace PACS 4.4.551.0 client.

Table 36: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged
SCP does not support any of the Query/Retrieve Information Models	The error is logged and the IntelliSpace PACS 4.4.551.0 client is notified of the failure and the association is closed

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

4.2.1.4.2.1. Description and Sequencing of Activities

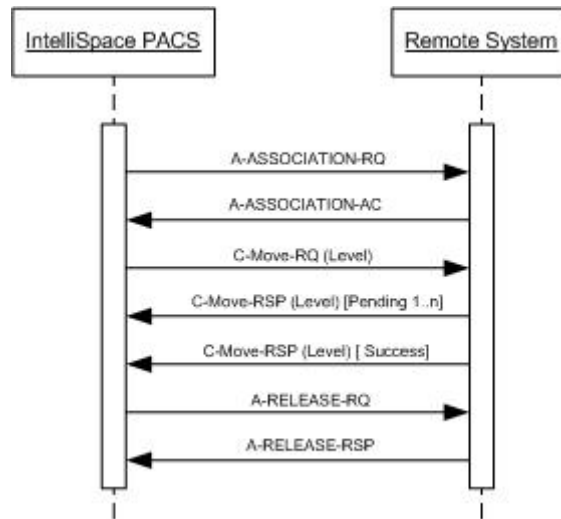


Figure 5: Sequence of C-Move as SCU

4.2.1.4.2.2. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 37: Proposed Presentation Contexts for (Real-World) Activity – C-MOVE as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Patient Root QR Information Model - C-MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	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		
Patient/Study Only QR Info. Model - C-MOVE SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.2	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		
Study Root QR Information Model - C-MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	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		

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

The iQuery tool supports the DICOM Patient Root Query/Retrieve Information Model C-MOVE SOP class as an SCU.

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

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

Enclosed are the unique matching keys being used by IntelliSpace PACS 4.4.551.0 for the requested retrieval level, described in (0008,0052).

Table 38: Identifiers for C-MOVE Patient Root Information Model as SCU

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

Details regarding the Dataset Specific response behavior is described in the table below.

Table 39: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	Log the event in iQuery tool
Failed	A701	C-MOVE failure refused cannot calculate	Log the failure of the iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association
	A702	C-MOVE failure refused cannot perform	
	A801	C-MOVE failure refused destination unknown	
	A900	C-MOVE failure invalid dataset	
	C001	C-MOVE failure unable to process	
Warning	B000	One or more failures	Log the failure in the iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association
Pending	FF00	Current match is supplied	If none of the sub-operations have failed continue reading DICOM C-MOVE-RSP messages. If any of the sub-operations have failed submit C-CANCEL-MOVE-RQ to the remote application entity.
Cancel	FE00	C-MOVE cancel request received	Log failed in iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association

Table 40: Communication Failure Behavior

Exception	Behavior
Timeout	If the Q/R SCP does not respond within a configurable time period for a submitted C-MOVE request the C-CANCEL-MOVE-RQ is submitted and an error is logged in the iQuery tool. Association is closed and the request is retried for a configurable amount of time at a configurable duration
Association Aborted	The request is retried for a configurable amount of time at a configurable duration

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

The iQuery tool supports the DICOM Patient/Study only Query/Retrieve Information Model C-MOVE SOP class as an SCU. This section and sub-section include the manufacturer SOP and Dataset specific information as well as the status codes and their corresponding behavior.

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

Enclosed are the unique matching keys being used by IntelliSpace PACS 4.4.551.0 for the requested retrieval level, described in (0008,0052).

Table 41: Identifiers for MOVE Patient/Study Only Information Model as SCU

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

Details regarding the Dataset Specific response behavior is described in the Table below.

Table 42: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	Log the event in iQuery tool
Failed	A701	C-MOVE failure refused cannot calculate	Log failed in iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association
	A702	C-MOVE failure refused cannot perform	
	A801	C-MOVE failure refused destination unknown	
	A900	C-MOVE failure invalid dataset	
	C001	C-MOVE failure unable to process	
Warning	B000	One or more failures	Log failed in iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association
Pending	FF00	Current match is supplied	If none of the sub-operations have failed continue reading DICOM C-MOVE-RSP messages. If any of the sub-operations have failed submit C-CANCEL-MOVE-RQ to the remote application entity.
Cancel	FE00	C-MOVE cancel request received	Log failed in iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association

Table 43: Communication Failure Behavior

Exception	Behavior
Timeout	If the Q/R SCP does not respond within a configurable time period for a submitted C-MOVE request the C-CANCEL-MOVE-RQ is submitted and an error is logged in the iQuery tool. Association is closed and the request is retried for a configurable amount of time at a configurable duration
Association Aborted	The request is retried for a configurable amount of time at a configurable duration

4.2.1.4.2.5. SOP Specific Conformance for PatientStudy Only QR Info. Model - MOVE SOP Class (Retired)

The iQuery tool supports the DICOM Study Root Query/Retrieve Information Model C-MOVE SOP class as an SCU.

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

4.2.1.4.2.5.1. Dataset Specific Conformance for PatientStudy Only QR Info. Model - MOVE SOP Class C-MOVE-SCU

Enclosed are the unique matching keys being used by IntelliSpace PACS 4.4.551.0 for the requested retrieval level, described in (0008,0052).

Table 44: Identifiers for MOVE Study Root Information Model as SCU

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

Details regarding the Dataset Specific response behavior is described in the table below.

Table 45: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	Log the event in iQuery tool
Failed	A701	C-MOVE failure refused cannot calculate	Log failed in iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association
	A702	C-MOVE failure refused cannot perform	
	A801	C-MOVE failure refused destination unknown	
	A900	C-MOVE failure invalid dataset	
	C001	C-MOVE failure unable to process	
Warning	B000	One or more failures	Log failed in iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association
Pending	FF00	Current match is supplied	If none of the sub-operations have failed continue reading DICOM C-MOVE-RSP messages. If any of the sub-operations have failed submit C-CANCEL-MOVE-RQ to the remote application entity.
Cancel	FE00	C-MOVE cancel request received	Log failed in iQuery tool in IntelliSpace PACS 4.4.551.0 Server and Close the association

Table 46: Communication Failure Behavior

Exception	Behavior
Timeout	If the Q/R SCP does not respond within a configurable time period for a submitted C-MOVE request the C-CANCEL-MOVE-RQ is submitted and an error is logged in the iQuery tool. Association is closed and the request is retried for a configurable amount of time at a configurable duration
Association Aborted	The request is retried for a configurable amount of time at a configurable duration

4.2.2. IntelliSpace PACS 4.4.551.0 DICOM Server 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.

Table 47: SOP Classes for IntelliSpace PACS 4.4.551.0 DICOM Server AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	Yes	Yes
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Yes	Yes
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Yes	Yes
Stored Print Storage	1.2.840.10008.5.1.1.27	Yes	No
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	Yes	Yes
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	Yes
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	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
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Yes	Yes
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes
Encapsulated CDA Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.2	Yes	Yes
Standalone VOI LUT Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.11	Yes	Yes
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Yes	Yes
Pseudo-Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.3	Yes	Yes
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Yes	Yes
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	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
Positron Emission Tomography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.128	Yes	Yes
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Yes	Yes
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Yes	Yes
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	Yes
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Yes	Yes
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	Yes
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	Yes	Yes
MR Spectroscopy Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Yes	Yes
RT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.1	Yes	Yes
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	Yes	Yes
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Yes	Yes
RT Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.4	Yes	Yes
RT Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.5	Yes	Yes
RT Brachy Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.6	Yes	Yes
RT Treatment Summary Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.7	Yes	Yes
RT Ion Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.8	Yes	Yes
RT Ion Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.9	Yes	Yes
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	Yes
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Yes	Yes
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes
Enhanced US Volume Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.2	Yes	Yes
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Yes	Yes
Spatial Registration Storage SOP Class	1.2.840.10008.5.1.4.1.1.66.1	Yes	Yes
Spatial Fiducials Storage SOP Class	1.2.840.10008.5.1.4.1.1.66.2	Yes	Yes
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.1	Yes	Yes
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	Yes	Yes
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	Yes
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	Yes
Stereometric Relationship Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	Yes
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Yes	Yes
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Yes	Yes
Enhanced SR SOP Class	1.2.840.10008.5.1.4.1.1.88.22	Yes	Yes
Detail SR Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.3	Yes	Yes
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Yes	Yes
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	Yes	Yes
Mammography CAD SR SOP Class	1.2.840.10008.5.1.4.1.1.88.50	Yes	Yes
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Yes	Yes
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Yes	Yes
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Yes	Yes
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	Yes	Yes
12-Lead ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	Yes
General ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	Yes
Ambulatory ECG Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	Yes
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	Yes
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	Yes
Basic Voice Audio Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	Yes
GE Private eNTEGRA Storage (Xeleris Auto Start/eNTEGRA Protocol Data or NM Genie)	1.2.840.113619.4.27	Yes	Yes
Philips Private MR Spectrum Storage	1.3.46.670589.11.0.0.12.1	Yes	Yes
Philips Private MR Series Data Storage	1.3.46.670589.11.0.0.12.2	Yes	Yes
Philips Private X-Ray Image Storage	1.3.46.670589.2.3.1.1	Yes	Yes
Philips Private Reconstructed X-ray Storage	1.3.46.670589.2.4.1.1	Yes	Yes
Philips Private iE33 3D NEO Presentation State Subpage Storage	1.3.46.670589.2.5.1.1	Yes	Yes
Philips Private EasyVision Volume Storage	1.3.46.670589.5.0.1	Yes	Yes
Philips Private ViewForum 3D Volume New Storage	1.3.46.670589.5.0.1.1	Yes	Yes
Philips Private ViewForum MR Synthetic Image Storage	1.3.46.670589.5.0.10	Yes	Yes
Philips Private EasyVision MR Cardio Analysis Storage	1.3.46.670589.5.0.11	Yes	Yes
Philips Private ViewForum MR Cardio Analysis New Storage	1.3.46.670589.5.0.11.1	Yes	Yes
Philips Private ViewForum CX Synthetic Image Storage	1.3.46.670589.5.0.12	Yes	Yes
Philips Private ViewForum Perfusion Storage	1.3.46.670589.5.0.13	Yes	Yes
Philips Private ViewForum Perfusion Analysis Storage	1.3.46.670589.5.0.14	Yes	Yes
Philips Private EasyVision 3D Volume Object Storage	1.3.46.670589.5.0.2	Yes	Yes
Philips Private ViewForum 3D Volume Object New Storage	1.3.46.670589.5.0.2.1	Yes	Yes
Philips Private EasyVision Surface Storage	1.3.46.670589.5.0.3	Yes	Yes
Philips Private ViewForum Surface New Storage	1.3.46.670589.5.0.3.1	Yes	Yes
Philips Private MR Cardio Profile Image Storage	1.3.46.670589.5.0.7	Yes	Yes
Philips Private EasyVision MR Cardio Storage	1.3.46.670589.5.0.8	Yes	Yes
Philips Private ViewForum MR Cardio New Storage	1.3.46.670589.5.0.8.1	Yes	Yes
Philips Private ViewForum CT Synthetic Image Storage	1.3.46.670589.5.0.9	Yes	Yes

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

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 IntelliSpace PACS 4.4.551.0 DICOM Server application will request associations and accept associations for DICOM Storage and Query/Retrieve. The IntelliSpace PACS 4.4.551.0 DICOM Server application supports a maximum PDU size of 63KB. The DICOM standard application context has specified.

Table 48: 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 number of simultaneous associations that an Application Entity may support as an Initiator or Acceptor is specified.

Table 49: Number of associations as an Association Initiator for this AE

Description	Value
Maximum number of simultaneous associations	3 (Default) / 1 (Q/R)

Table 50: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations	This is limited by the hardware platform and overall system performance requirements (Not Configurable)

4.2.2.2.3. Asynchronous Nature

The IntelliSpace PACS 4.4.551.0 DICOM Server application does not support negotiation of multiple outstanding transactions.

4.2.2.2.4. Implementation Identifying Information

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

Table 51: DICOM Implementation Class and Version for IntelliSpace PACS 4.4.551.0 DICOM Server AE

Description	Value
Implementation Class UID	1.3.46.670589.42.1.4.4.5
Implementation Version Name	PHISPACS44550

4.2.2.2.5. Communication Failure Handling

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

Table 52: Communication Failure Behavior

Exception	Behavior
ARTIM Time-out	The Association is aborted using AP-ABORT and command marked as failed. The reason is logged and reported to the user.

4.2.2.3. Association Initiation Policy

The Application Entity will respond to a received reject Association attempt as shown in next table.

Table 53: Association Rejection response

Result	Source	Reason/Diagnosis	Explanation
1 - rejected-permanent	1 - DICOM UL service-user	1 - no-reason-given	The user is informed and details are logged.
		2 - application-context-name-not supported	The user is informed and details are logged.

Result	Source	Reason/Diagnosis	Explanation	
	2 - DICOM UL service-provider (ACSE related function)	3 - calling-AE-title-not-recognized	The user is informed and details are logged.	
		7 - called-AE-title-not-recognized	The user is informed and details are logged.	
		1 - no-reason-given	The user is informed and details are logged.	
		2 - protocol-version-not-supported	The user is informed and details are logged.	
		3 - DICOM UL service-provider(Presentation related function)	1 - temporary-congestion	The user is informed and details are logged.
			2 - Local-limit-exceeded	The user is informed and details are logged.
2 - rejected-transient	1 - DICOM UL service-user	1 - no-reason-given	The user is informed and details are logged.	
		2 - application-context-name-not-supported	The user is informed and details are logged.	
		3 - calling-AE-title-not-recognized	The user is informed and details are logged.	
		7 - called-AE-title-not-recognized	The user is informed and details are logged.	
	2 - DICOM UL service-provider (ACSE related function)	1 - no-reason-given	The user is informed and details are logged.	
		2 - protocol-version-not-supported	The user is informed and details are logged.	
	3 - DICOM UL service-provider (Presentation related function)	1 - temporary congestion	The user is informed and details are logged.	
		2 - local-limit-exceeded	The user is informed and details are logged.	

The behavior of the AE on receiving an association abort is summarized in next table.

Table 54: Association Abort Handling

Source	Reason/Diagnosis	Behavior
0 - DICOM UL service-user (initiated abort)	0 - reason-not-specified	Notifies remote AE, terminates the connection and logs the event.
2 - DICOM UL service-provider (initiated abort)	0 - reason-not-specified	Notifies remote AE, terminates the connection and logs the event.
	1 - unrecognized-PDU	Notifies remote AE, terminates the connection and logs the event.
	2 - unexpected-PDU	Notifies remote AE, terminates the connection and logs the event.
	4 - unrecognized-PDU parameter	Notifies remote AE, terminates the connection and logs the event.
	5 - unexpected-PDU parameter	Notifies remote AE, terminates the connection and logs the event.
	6 - invalid-PDU-parameter value	Notifies remote AE, terminates the connection and logs the event.

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

4.2.2.3.1.1. Description and Sequencing of Activities

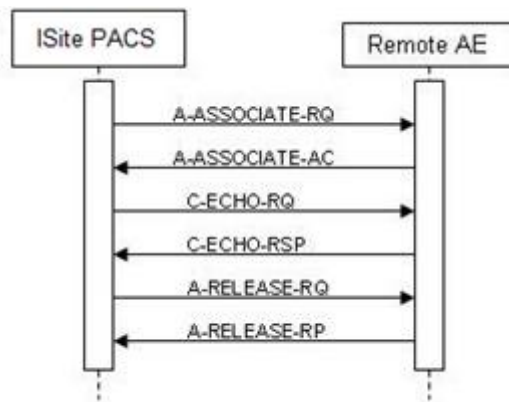


Figure 6: (Real-World) Activity – C-ECHO as SCU

4.2.2.3.1.2. Proposed Presentation Contexts

Table 55: Proposed Presentation Contexts for (Real-World) Activity – Verification as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	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		

4.2.2.3.1.3. 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.

4.2.2.3.1.3.1. Dataset Specific Conformance for Verification C-ECHO SCU

Detail regarding the Dataset Specific response behavior will be reported in this section.

Table 56: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Confirmation	The SCP has successfully responded to the verification request

4.2.2.3.2. Modality Performed Procedure Step as SCU

4.2.2.3.2.1. Description and Sequencing of Activities

IntelliSpace PACS 4.4.551.0 can be configured to forward MPPS to a configured Forward MPPS node. The forward node can be configured to receive images also. When MPPS messages are received from a modality, the messages are forwarded as such to the forward MPPS node. The MPPS Information model is same as that received from the SCU node.

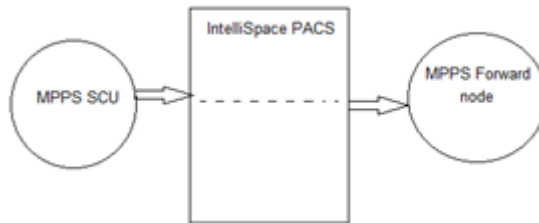


Figure 7 (Real-World) Activity – MPPS as SCU

4.2.2.3.2.2. Proposed Presentation Contexts

Table 57: Proposed Presentation Contexts for (Real-World) Activity – Modality Performed Procedure Step as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian (Default)	1.2.840.10008.1.2	SCU	None

4.2.2.3.2.3. SOP Specific Conformance for SOP Classes

4.2.2.3.2.3.1. SOP Specific Conformance for Modality Performed Procedure Step SOP Class

The MPPS Information model is same as that received from the SCU node.

IntelliSpace PACS 4.4.551.0 adds the following details to the MPPS information model while forwarding the MPPS messages.

Table 58: Attributes added to the MPPS forward

Attribute Name	Tag	VR	Comment
>Referenced SOP Class UID	0008,1150	UI	
>Referenced SOP Instance UID	0008,1155	UI	

4.2.2.3.3. (Real-World) Activity – Image Export

4.2.2.3.3.1. Description and Sequencing of Activities

IntelliSpace PACS 4.4.551.0 client applications use the iExport tool of the IntelliSpace PACS 4.4.551.0 DICOM Server to initiate and manage DICOM associations with remote Application Entities that support the DICOM Storage Service as a Service Class Provider. The iExport tool allows IntelliSpace PACS 4.4.551.0 client applications to export DICOM Objects through (C-STORE SCU).

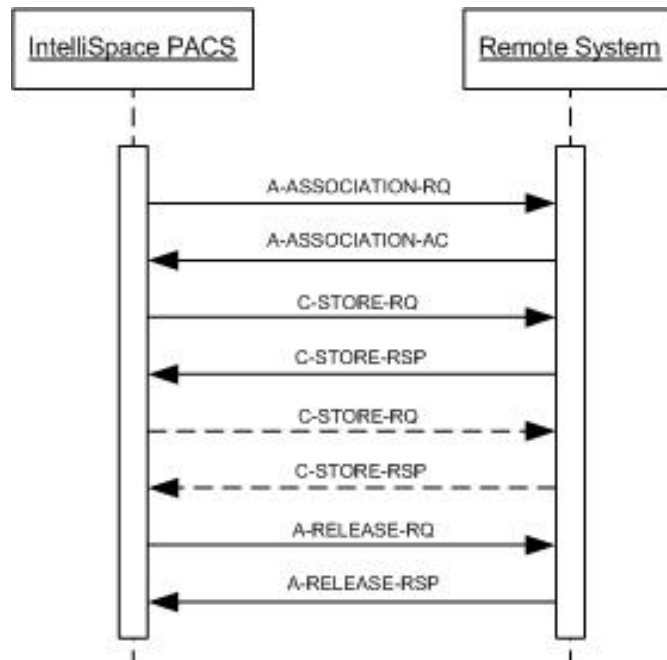


Figure 8: Sequence of C-Store as SCU

4.2.2.3.3.2. Proposed Presentation Contexts

The presentation contexts are defined in table 59.

Table 59: Proposed Presentation Contexts for (Real-World) Activity – Image Export

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Digital Mammography X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Digital Mammography X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.2.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Digital Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.1.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Digital Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.1.3.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

		Explicit VR Big Endian	1.2.840.10008.1.2.2		
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Multi-frame Single Bit Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
Multi-frame Grayscale Byte SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Multi-frame Grayscale Word SC Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone Overlay Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.8	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
VL Endoscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
VL Microscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
		MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103		
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		

		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
		MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103		
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		MPEG-4 AVC/H.264 BD-compatible HighProfile / Level 4.1	1.2.840.10008.1.2.4.103		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Basic Text SR SOP Class	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Comprehensive SR SOP Class	1.2.840.10008.5.1.4.1.1.88.33	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Key Object Selection	1.2.840.10008.5.1.4.1.1.88.59	Implicit VR Little Endian: Default	1.2.840.10008.1.2	SCU	None

Document		Transfer Syntax for DICOM			
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Standalone PET Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.129	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Dose Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.2	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Structure Set Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.3	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		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	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Implicit VR Little Endian: Default Transfer Syntax for DICOM	1.2.840.10008.1.2	SCU	None

Explicit VR Little Endian	1.2.840.10008.1.2.1		
Explicit VR Big Endian	1.2.840.10008.1.2.2		

NOTE:

Normally images are sent out by the PACS in the transfer syntax the object is received in. The following exceptions hold:

1. When the PACS accepts images that with the RLE transfer syntax, they will be sent out with a proposed transfer syntax of RLE and ELE, upon which the SCP can select the appropriate one.
2. Images received in a lossless JPEG/JPEG2000 transfer syntax and have a compression ratio of less than 7.0 are internally converted into iSyntax and hence send out as ELE.

Table 60: Proposed Presentation Contexts for (Real-World) Activity – Private SOP class Export

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
GE Private eNTEGRA Storage (Xeleris Auto Start/eNTEGRA Protocol Data or NM Genie)	1.2.840.113619.4.27	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		
Philips Private ViewForum 3D Volume New Storage	1.3.46.670589.5.0.1.1	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		
Philips Private ViewForum MR Synthetic Image Storage	1.3.46.670589.5.0.10	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		
Philips Private ViewForum MR Cardio Analysis New Storage	1.3.46.670589.5.0.11.1	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		
Philips Private ViewForum CX Synthetic Image Storage	1.3.46.670589.5.0.12	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		
Philips Private ViewForum Perfusion Storage	1.3.46.670589.5.0.13	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		
Philips Private ViewForum Perfusion Analysis Storage	1.3.46.670589.5.0.14	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		
Philips Private ViewForum 3D Volume Object New Storage	1.3.46.670589.5.0.2.1	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		
Philips Private ViewForum Surface New Storage	1.3.46.670589.5.0.3.1	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		
Philips Private ViewForum MR Cardio New Storage	1.3.46.670589.5.0.8.1	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		
Philips Private ViewForum CT Synthetic Image Storage	1.3.46.670589.5.0.9	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		
Philips Private X-Ray Image Storage	1.3.46.670589.2.3.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Philips Private Reconstructed X-ray Storage	1.3.46.670589.2.4.1.1	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		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Philips Private iE33 3D NEO Presentation State Subpage Storage	1.3.46.670589.2.5.1.1	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		
Philips Private EasyVision 3D Volume Object Storage	1.3.46.670589.5.0.2	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		
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	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		
Philips Private MR Spectrum Storage	1.3.46.670589.11.0.0.12.1	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		
Philips Private EasyVision MR Cardio Storage	1.3.46.670589.5.0.8	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		
Philips Private EasyVision MR Cardio Analysis Storage	1.3.46.670589.5.0.11	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		
Philips Private MR Cardio Profile Image Storage	1.3.46.670589.5.0.7	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		
Philips Private EasyVision Surface Storage	1.3.46.670589.5.0.3	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		
Philips Private EasyVision Volume Storage	1.3.46.670589.5.0.1	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		

Notes:

[1] The supported transfer syntaxes for the media export SCU is limited. The details are described at the end of Table 2: Media Services in chapter 1.

4.2.2.3.3.3. SOP Specific Conformance for Storage SOP Classes

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

4.2.2.3.3.3.1. Dataset Specific Conformance for C-STORE-RQ

Details regarding the Dataset Specific response behavior are reported in this section.

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

Additional information regarding the SOP Classes created in IntelliSpace PACS 4.4.551.0 such as the GSPS, Encapsulated PDF and Extended RAWDATA is described in Section 8.

Table 61: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful stored	C-STORE-RQ accepted
Failure	xxxx	Failed to store	Log the error in the IntelliSpace PACS 4.4.551.0 iExport tool log file and retry the C-STORE-RQ a configurable amount of times after a configurable period of time.

Table 62: Communication Failure Behavior

Exception	Behavior
Association aborted	Log the error in the IntelliSpace PACS 4.4.551.0 iExport tool log file and C-STORE-RQ is retried a configurable number of times at a configurable period of time.
Rejected, Image type is not supported by the remote Application Entity (Unacceptable service)	Log the error in the IntelliSpace PACS 4.4.551.0 iExport tool log file and continue on sending the next image in the series.

4.2.2.3.4. (Real-World) Activity – Storage Commitment Push Model as SCU

4.2.2.3.4.1. Description and Sequencing of Activities

The IntelliSpace PACS 4.4.551.0 supports synchronous mode and asynchronous mode for storage commitment SCU.

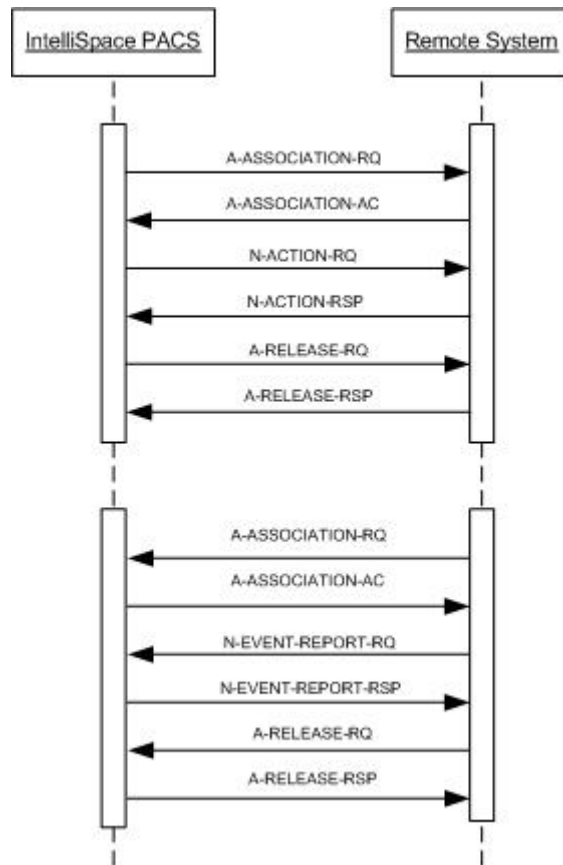


Figure 9: (Real-World) Activity – Asynchronous Storage Commitment as SCU

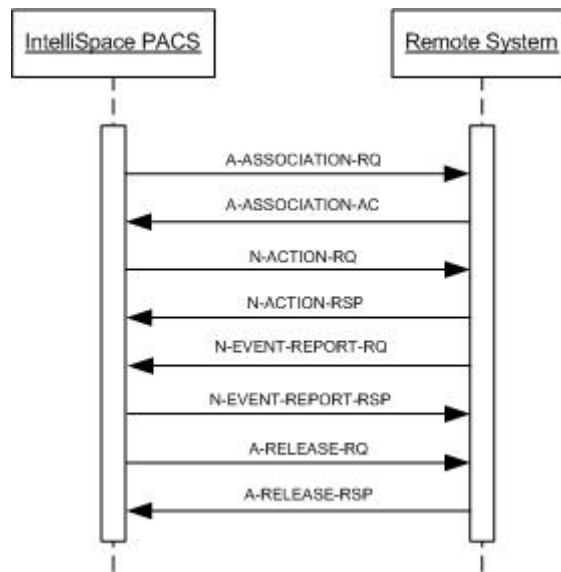


Figure 10: (Real-World) Activity – Synchronous Storage Commitment as SCU

4.2.2.3.4.2. Proposed Presentation Contexts

The presentation contexts are defined in the next table.

Table 63: Proposed Presentation Contexts for (Real-World) Activity – Storage Commitment Push Model as SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	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		

4.2.2.3.4.3. SOP Specific Conformance for SCU Storage Commitment Push Model SOP Class

The associated Activity with the Storage Commitment Push Model service is the communication by the STORAGE-SCU AE to peer AEs that it requested the SCP to commit to permanently store Composite SOP Instances that have been sent to it. It thus allows IntelliSpace PACS 4.4.551.0 to perform as a VNA Client and determine whether the VNA Server (Storage SCP) has taken responsibility for the archiving of specific SOP Instances so that IntelliSpace PACS 4.4.551.0 VNA Client (Storage SCU) can remove these SOP Instances from his system.

The SCU uses the N-ACTION primitive to request the SCP the safekeeping of a set of SOP Instances.

Upon receipt of a successful N-ACTION Response Status Code from the SCP, the SCU now knows that the SCP has received the N-ACTION request. Then the next step is to receive the N-EVENT-REPORT from the SCP, where it is reporting which SOP Instances have been successfully received and which have not successfully received.

IntelliSpace PACS 4.4.551.0 Storage SCU, can receive the N-EVENT-REPORT either on the same association it sent the N-ACTION, or it can receive it on a new association established by the peer SCP.

The Storage SCU will wait for a certain time (wait time is configurable and it is defaulted to 60 seconds) to receive the Storage reply on the same association. When timed out the SCU storage will close the association and will accept later a new association from the Storage SCP to receive the N-Event-Report with the Status of the Storage Commitment.

The STORAGE-SCU will release the storage of the objects that have been committed by the Storage SCP, while for the other objects that the SCP did not accepted the SCU Storage will resend those objects and then after it will re send the Storage commitment for the left objects that have not yet been committed.

The STORAGE-SCU AE does not support the optional Storage Media File-Set ID & UID attributes in the N-ACTION.

4.2.2.3.4.3.1. Dataset Specific Conformance for Storage Commitment Push Model SOP Class N-EVENT-REPORT-SCP

IntelliSpace PACS 4.4.551.0 server SCU will wait for the N-EVENT-REPORT on the same N-ACTION association for a certain time that is user configurable and is defaulted to 60 seconds, upon the receiving the N-ACTION-RQ reply. Then after the SCU will drop the N-ACTION Association and the SCP can send the N-EVENT-REPORT, later on a separate association. When the N-EVENT-REPORT is received with the status of the instances that were committed or refused, then the SCU will remove/mark deleted all the instances committed. While for the instances that were not committed, if any, the SCU will make another try to resend those instances and then request the commitment. If second attempt fails completely or partially then a warning will be displayed on the User Interface screen.

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

Table 64: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful store	Message was received successfully
Failed	0110	Operation failed	If failed to parse the message. Association is aborted.
	0119	Class instance Conflict	Class instance conflict. Association is aborted.
	0210	Duplicate	Duplicate invocation. Association is aborted.
	0115	Bad argument	Invalid argument value. Association is aborted.
	0212	Wrong argument	Mistyped argument. Association is aborted.
	0114	No argument	No such argument. Association is aborted.
	0113	Wrong event type	No such event type. Association is aborted.
	0118	Wrong SOP class	No such SOP class. Association is aborted.
	0112	Wrong SOP instance	No such SOP instance. Association is aborted.
	0213	Resource limitation	No resources available. Association is aborted.
	0211	Unrecognized operation	Such operation is not recognized. Association is aborted.

4.2.2.3.4.3.2. Dataset Specific Conformance for Storage Commitment Push Model SOP Class N-ACTION-SCU

The IntelliSpace PACS 4.4.551.0 server Storage SCU initiates the storage commitment request through an N-ACTION-RQ Commitment Push specifying the transaction UID for synchronization with the SCP responses and the referenced SOP instances that need to be committed. The Storage Media File-Set is not supported. Upon sending the N-ACTION-RQ, the SCU will wait for the SCP reply. If the reply is successful then the SCU knows that the SCP received the Storage Commit request and it should expect to receive from the SCP the N-Event-Report with the status of the requested instances. If the reply contains an error then the Storage Commit has failed. The next table shows the Status codes for the N-Action-RQ reply.

The Storage AE will consider Storage Commitment failed if no N-EVENT-REPORT is received for a Transaction UID within a configurable time period after receiving a successful N-ACTION response (duration of applicability for a Transaction UID). The Storage Commitment SCU Retry is driven by the Configuration parameter for Storage Commitment Retry. The value of the configuration parameter is in minutes and defaults to 5.

Table 65: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	The request for storage comment is considered successfully sent. A timer is started which will expire if no N-EVENT-REPORT for the Transaction UID is received within a configurable timeout period.

Service Status	Error Code	Further Meaning	Behavior
*	*	Any other status code.	The Association is aborted using A-ABORT and the request for storage comment is marked as failed. The status meaning is logged and reported to the user.

4.2.2.4. Association Acceptance Policy

The Application Entity may reject Association attempts as shown in the table below.

Table 66: Association Reject Reasons

Result	Source	Reason/Diagnosis	Explanation
1 - rejected-permanent	1 - DICOM UL service-user	1 - no-reason-given	Association is not established and details are logged.
		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 67: Association Abort Policies

Source	Reason/Diagnosis	Behavior
0 - DICOM UL service-user (initiated abort)	0 - reason-not-specified	When received, terminates the connection and logs the event.
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	

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

4.2.2.4.1.1. Description and Sequencing of Activities

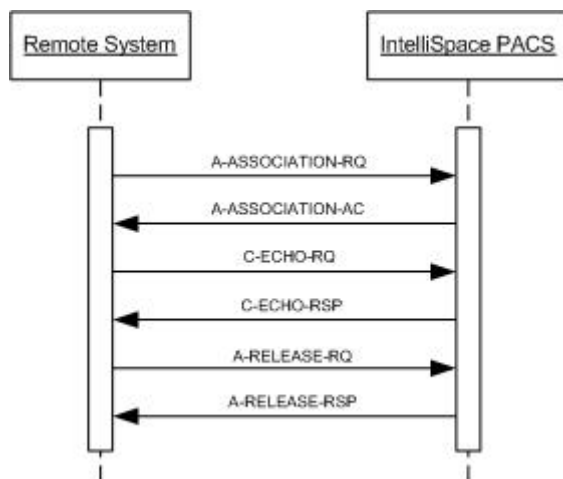


Figure 11: (Real-World) Activity – C-ECHO as SCP

4.2.2.4.1.2. Accepted Presentation Contexts

The presentation contexts are defined in next table.

Table 68: Acceptable Presentation Contexts for (Real-World) Activity – Verification as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	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		

4.2.2.4.1.3. SOP Specific Conformance for Verification SOP Class

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

4.2.2.4.1.3.1. 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 69: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	C-Echo request accepted

4.2.2.4.2. (Real-World) Activity – Modality Performed Procedure Step as SCP

4.2.2.4.2.1. Description and Sequencing of Activities

The IntelliSpace PACS 4.4.551.0 DICOM Server will accept DICOM Modality Performed Procedure Step association request that are initiated by remote DICOM entities. The IntelliSpace PACS 4.4.551.0 DICOM Server will process the incoming MPPS messages and forward them to configured DICOM clients.

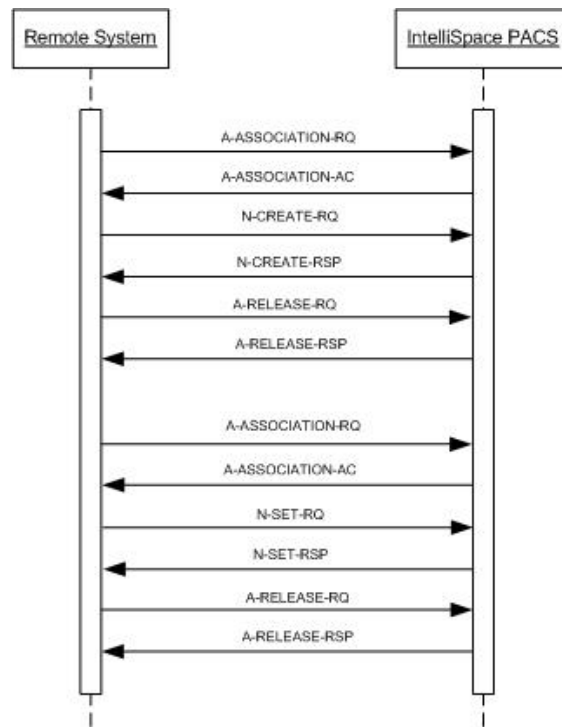


Figure 12: (Real-World) Activity – MPPS as SCP

4.2.2.4.2.2. Accepted Presentation Contexts

The presentation contexts are defined in next table.

Table 70: Acceptable Presentation Contexts for (Real-World) Activity – Modality Performed Procedure Step as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	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		

4.2.2.4.2.3. SOP Specific Conformance for Modality Performed Procedure Step SOP Class

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

4.2.2.4.2.3.1. Dataset Specific Conformance for Modality Performed Procedure Step N-CREATE SCP

The IntelliSpace PACS 4.4.551.0 Server MPPS SCP expects the following attributes to be available in the N-CREATE message for it to be considered valid. If an attribute is missing fail status is returned.

Table 71: Attributes for for Modality Performed Procedure Step N-CREATE SCP

Tag	Name
[0000,0002]	Affected SOP Class UID
[0000,1000]	Affected SOP Instance UID
[0008,0050]	Accession Number
[0008,0060]	Modality

Tag	Name
[0010,0010]	Patient Name
[0010,0020]	Patient ID
[0010,0030]	Patient Birth Date
[0020,000D]	Study Instance UID
[0020,0010]	Study ID
[0040,0009]	Schedule Procedure Step ID
[0040,0241]	Performed Station AE Title
[0040,0244]	Performed Procedure Step Start Date
[0040,0245]	Performed Procedure Step Start Time
[0040,0250]	Performed Procedure Step End Date
[0040,0251]	Performed Procedure Step End Time
[0040,0252]	Performed Procedure Step Status
[0040,0253]	Performed Procedure Step ID
[0040,0270]	Scheduled Step Attributes Sequence
[0040,1001]	Requested Procedure ID

Table 72: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	The N-CREATE-RQ is forwarded to the configured DICOM MPPS SCP
Failed	0121	Missing attribute value	The N-CREATE command is not forwarded to the configured DICOM MPPS SCP. Error is logged in the IntelliSpace PACS 4.4.551.0 Server.

Table 73: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

4.2.2.4.2.3.2. Dataset Specific Conformance for Modality Performed Procedure Step N-SET SCP

The IntelliSpace PACS 4.4.551.0 Server MPPS SCP expects the following attributes to be available in the N-SET message for it to be considered valid. If the attribute is missing fail status is returned.

Table 74: Attributes for for Modality Performed Procedure Step N-SET SCP

Tag	Name
[0000,1000]	Affected SOP Instance UID
[0000,1001]	Requested SOP Instance UID
[0040,0250]	Performed Procedure Step End Date
[0040,0251]	Performed Procedure Step End Time
[0040,0252]	Performed Procedure Step Status

Table 75: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Success	The N-SET-RQ is forwarded to the configured DICOM MPPS SCP
Failed	0121	Missing attribute value	The N-SET-RQ command is not forwarded to the configured DICOM MPPS SCP. Error is logged in the IntelliSpace PACS 4.4.551.0 Server.

Table 76: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

4.2.2.4.3. (Real-World) Activity – C-FIND as SCP

4.2.2.4.3.1. Description and Sequencing of Activities

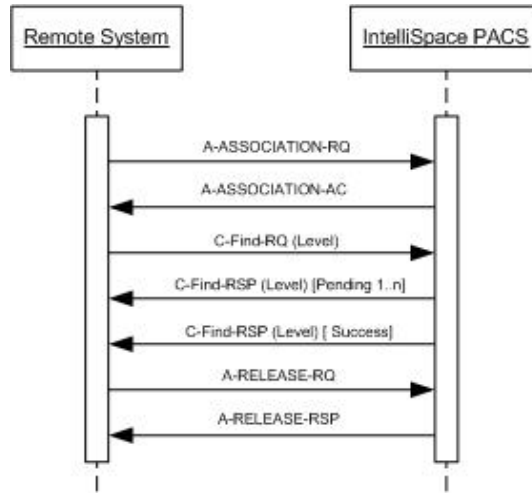


Figure 13: (Real-World) Activity – C-Find as SCP

4.2.2.4.3.2. Accepted Presentation Contexts

The presentation contexts are defined in the next table.

Table 77: Acceptable Presentation Contexts for (Real-World) Activity – C-FIND as SCP

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

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

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

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

The supported Query keys and the DICOM command communication behavior are shown in the following tables. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 78: Requested Query Keys for Patient Root Information Model

Patient Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Q/R Patient level (Patient Root)				
Patient's Name	0010,0010	PN	Single Value, Universal, Wildcard	
Patient ID	0010,0020	LO	Single Value, Wildcard	
Patient's Birth Date	0010,0030	DA	Single Value, Range	Optional Attribute. Returned when available
Patient's Sex	0010,0040	CS	Single Value, Wildcard	Optional Attribute. Returned when available
Q/R Study level (Patient Root)				
Study Date	0008,0020	DA	Single Value, Range, Universal	
Study Time	0008,0030	TM	Single Value, Range, Universal	
Accession Number	0008,0050	SH	Single Value, Universal, Wildcard	
Referring Physicians Name	0008,0090	PN	Single Value, Universal, Wildcard	Optional Attribute
Study Description	0008,1030	LO	Universal	Optional Attribute. when available
Patient's Name	0010,0010	PN	Universal, Wildcard	Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
Patient ID	0010,0020	LO	Single Value	
Study Instance UID	0020,000D	UI	Single Value, Universal, List of UID	
Study ID	0020,0010	SH	Single Value, Universal, Wildcard	
Number of Study Related Series	0020,1206	IS	Universal	Optional Attribute Not used in Matching but returned when available.
Number of Study Related Instances	0020,1208	IS	Universal	Optional Attribute Not used in Matching but returned when available.
Modalities in Study	0008, 0061	CS	Single Value, Universal	Optional Attribute
Q/R Series level (Patient Root)				
Modality	0008,0060	CS	Single Value, Universal	
Patient ID	0010,0020	LO	Single Value	
Body Part Examined	0018,0015	CS	Universal	
Study Instance UID	0020,000D	UI	Single Value	
Series Instance UID	0020,000E	UI	Single Value, Universal, List Of UID	
Series Number	0020,0011	IS	Single Value, Universal	
Number of Series Related Images	0020,1209	IS	Universal	Optional Attribute Not used in Matching but returned when available.
Performed Procedure Step Start Date	0040,0244	DA	Single Value, Range, Universal	
Performed Procedure Step Start Time	0040,0245	TM	Single Value, Range, Universal	

Request Attribute Sequence	0040,0275	SQ	N/A	Optional Attribute Matching is performed up to 1 item level
>Requested Procedure ID	0040,1001	SH	Single Value, Universal, Wildcard	
>Scheduled Procedure Step ID	0040,0009	SH	Single Value, Universal, Wildcard	
Q/R Image level (Patient Root)				
Series Instance UID	0020,000E	UI	Single Value	
Image Type	0008,0008	CS	Universal	
SOP Instance UID	0008,0018	UI	Single Value, Universal, List Of UID	
Patient ID	0010,0020	LO	Single Value	
Study Instance UID	0020,000D	UI	Single Value	
Instance Number	0020,0013	IS	Single Value, Universal	

Table 79: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	A response is sent with this status code.
Failed	A700	Out of resources	Logged and released association.
	A900	Invalid dataset	A response is sent with this status code. The reason is logged in the file
	C000	Unable to process	A response is sent with this status code. The reason is logged in the file
	C001	Unable to process due to missing unique tags	A response is sent with this status code. The reason is logged in the file
Pending	FF00	Current match is supplied	Matches are continuing; Current match is supplied.
Cancel	FE00	Matching terminated due to Cancel Request	No more C-FIND Pending responses will be sent and a final response is sent with this status code. Cancel Request is logged.

Table 80: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

4.2.2.4.3.4. SOP Specific Conformance for Patient/Study Only QR Information Model - C-FIND SOP Class (Retired) - SCP

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

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

The supported Query keys and the DICOM command communication behavior are shown in the following tables. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 81: Requested Query Keys for Patient/Study Only Information Model

Patient/Study Only Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Q/R Patient level (Patient/Study Only)				
Patient's Name	0010,0010	PN	Single Value, Universal, Wildcard	

Patient ID	0010,0020	LO	Single Value, Wildcard	
Patient's Birth Date	0010,0030	DA	Single Value, Range	Optional Attribute. Returned when available
Patient's Sex	0010,0040	CS	Single Value, Wildcard	Optional Attribute. Returned when available
Q/R Study level (Patient/Study Only)				
Study Date	0008,0020	DA	Single Value, Range, Universal	
Study Time	0008,0030	TM	Single Value, Range, Universal	
Accession Number	0008,0050	SH	Single Value, Universal, Wildcard	
Modalities in Study	0008,0061	CS	Single Value, Universal	
Referring Physician's Name	0008,0090	PN	Single Value, Universal, Wildcard	Optional Attribute
Study Description	0008,1030	LO	N/A	Optional Attribute. Not used in Matching but returned when available
Patient's Name	0010,0010	PN	Universal, Wildcard	Patient's Name key attribute matching type is implicitly converted from a single value matching to wild card matching by adding a wild card "*" character at the end of its value.
Patient ID	0010,0020	LO	Single Value	
Study Instance UID	0020,000D	UI	Single Value, Universal, List Of UID	
Study ID	0020,0010	SH	Single Value, Universal, Wildcard	
Number of Study Related Series	0020,1206	IS	Universal	Optional Attribute Not used in Matching but returned when available
Number of Study Related Instances	0020,1208	IS	Universal	Optional Attribute Not used in Matching but returned when available.

Table 82: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	A response is sent with this status code.
Failure	A700	Out of resources	Logged and released association.
	A900	Invalid dataset	A response is sent with this status code. The reason is logged in the file
	C000	Unable to process	A response is sent with this status code. The reason is logged in the file
	C001	Unable to process due to missing unique tags	A response is sent with this status code. The reason is logged in the file
Pending	FF00	Current match is supplied	Matches are continuing; Current match is supplied.
Cancel	FE00	Matching terminated due to Cancel Request	No more C-FIND Pending responses will be sent and a final response is sent with this status code. Cancel Request is logged.

Table 83: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

4.2.2.4.3.5. 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 as the status codes and their corresponding behavior.

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

The supported Query keys and the DICOM command communication behavior are shown in the following tables. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 84: Requested Query Keys for Study Root Information Model

Study Root Information Model				
Attribute Name	Tag	VR	Type Of Matching	Comment
Q/R Study level (Study Root)				
Study Date	0008,0020	DA	Single Value, Range, Universal	
Study Time	0008,0030	TM	Single Value, Range, Universal	
Accession Number	0008,0050	SH	Single Value, Universal, Wildcard	
Modalities in Study	0008,0061	CS	Single Value, Universal	Optional Attribute
Referring Physician's Name	0008,0090	PN	Single Value, Universal, Wildcard	Optional Attribute
Study Description	0008,1030	LO	N/A	Optional Attribute. Not used in Matching but returned when available
Patient's Name	0010,0010	PN	Single Value, Universal, Wildcard	
Patient ID	0010,0020	LO	Single Value, Wildcard	
Patient's Birth Date	0010,0030	DA	Single Value, Range	Optional Attribute. Returned when available
Patient's Sex	0010,0040	CS	Single Value, Wildcard	Optional Attribute. Returned when available
Study Instance UID	0020,000D	UI	Single Value, Universal, List Of UID	
Study ID	0020,0010	SH	Single Value, Universal, Wildcard	
Number of Study Related Instances	0020,1208	IS	Universal	Optional Attribute Not used in Matching but returned when available.
Number of Study Related Series	0020, 1206	IS	Universal	Optional Attribute Not used in Matching but returned when available.
Q/R Series level (Study Root)				
Modality	0008,0060	CS	Single Value, Universal	
Body Part Examined	0018,0015	CS	Universal	
Study Instance UID	0020,000D	UI	Single Value	
Series Instance UID	0020,000E	UI	Single Value, Universal, List Of UID	
Series Number	0020,0011	IS	Single Value, Universal	
Number of Series Related Images	0020,1209	IS	Universal	Optional Attribute Not used in Matching but returned when available.
Performed Procedure Step Start Date	0040,0244	DA	Single Value, Range, Universal	
Performed Procedure Step Start Time	0040,0245	TM	Single Value, Range, Universal	

Request Attribute Sequence	0040,0275	SQ	N/A	Optional Attribute Matching is performed up to 1 item level
>Scheduled Procedure Step ID	0040,0009	SH	Single Value, Universal, Wildcard	
>Requested Procedure ID	0040,1001	SH	Single Value, Universal, Wildcard	
Q/R Image level (Study Root)				
Image Type	0008,0008	CS	Universal	
SOP Instance UID	0008,0018	UI	Single Value, Universal, List Of UID	
Study Instance UID	0020,000D	UI	Single Value	
Series Instance UID	0020,000E	UI	Single Value	
Instance Number	0020,0013	IS	Single Value, Universal	

Table 85: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	A response is sent with this status code.
Failure	A700	Out of resources	Logged and released association.
	A900	Invalid dataset	A response is sent with this status code. The reason is logged in the file
	C000	Unable to process	A response is sent with this status code. The reason is logged in the file
	C001	Unable to process due to missing unique tags	A response is sent with this status code. The reason is logged in the file
Pending	FF00	Current match is supplied	Matches are continuing; Current match is supplied.
Cancel	FE00	Matching terminated due to Cancel Request	No more C-FIND Pending responses will be sent and a final response is sent with this status code. Cancel Request is logged.

Table 86: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

4.2.2.4.4. (Real-World) Activity – C-MOVE as SCP

4.2.2.4.4.1. Description and Sequencing of Activities

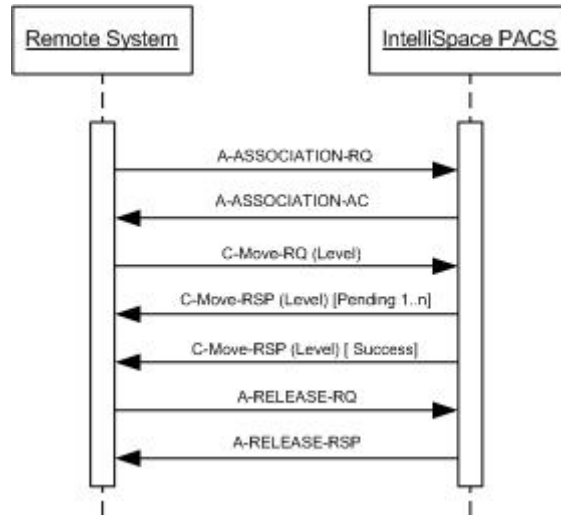


Figure 14: (Real-World) Activity – C-Move as SCP

4.2.2.4.4.2. Accepted Presentation Contexts

The presentation contexts are defined in the next table.

Table 87: Acceptable Presentation Contexts for (Real-World) Activity – C-MOVE as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Patient Root QR Information Model - C-MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	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		
Patient/Study Only QR Info. Model - C-MOVE SOP Class (Retired)	1.2.840.10008.5.1.4.1.2.3.2	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		
Study Root QR Information Model - C-MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	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		

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

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

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

The supported C-MOVE request keys and the DICOM command communication behavior are shown in the following tables. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 88: Identifiers for C-MOVE Patient Root Information Model as SCP

Patient Root Information Model			
Attribute Name	Tag	VR	Comment
Q/R Patient level			
Patient ID	0010,0020	LO	
Q/R Study level (Patient Root)			
Patient ID	0010,0020	LO	
Study Instance UID	0020,000D	UI	
Q/R Series level (Patient Root)			
Patient ID	0010,0020	LO	
Study Instance UID	0020,000D	UI	
Series Instance UID	0020,000E	UI	
Q/R Image level (Patient Root)			
SOP Instance UID	0008,0018	UI	
Patient ID	0010,0020	LO	
Study Instance UID	0020,000D	UI	
Series Instance UID	0020,000E	UI	

Table 89: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete – No Failures	A response with this status code is sent.
Failed	A700	Out of resources	Logged and released association.
	A900	Invalid dataset	A response with this status code is sent. The reason is logged in the file
	C001	Unable to process	A response with this status code is sent. The reason is logged in the file
Warning	B000	Sub-operations compete – 1 or more failures	A response with this status code is sent when 1 or more export jobs fail
Pending	FF00	Sub-operations are continuing	A response with this status code is sent.
Cancel	FE00	Sub-operations are terminated due to cancel Request	A response with this status code is sent. Cancel request is sent to export work item. The reason is logged in the file.

Table 90: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

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

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

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

The supported C-MOVE request keys and the DICOM command communication behavior are shown in the following tables. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 91: Identifiers for C-MOVE Patient/Study Only Information Model as SCP

Patient/Study Only Information Model			
Attribute Name	Tag	VR	Comment
Q/R Patient level (Patient/Study Only)			
Patient ID	0010,0020	LO	
Q/R Study level (Patient/Study Only)			
Patient ID	0010,0020	LO	
Study Instance UID	0020,000D	UI	

Table 92: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete – No Failures	A response with this status code is sent.
Failed	A700	Out of resources	Logged and released association.
	A900	Invalid dataset	A response with this status code is sent. The reason is logged in the file
	C001	Unable to process	A response with this status code is sent. The reason is logged in the file
Warning	B000	Sub-operations compete – 1 or more failures	A response with this status code is sent when 1 or more export jobs fail
Pending	FF00	Sub-operations are continuing	A response with this status code is sent.
Cancel	FE00	Sub-operations are terminated due to cancel Request	A response with this status code is sent. Cancel request is sent to export work item. The reason is logged in the file.

Table 93: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

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

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

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

The supported C-MOVE request keys and the DICOM command communication behavior are shown in the following tables. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 94: Identifiers for C-MOVE Study Root Information Model as SCP

Study Root Information Model			
Attribute Name	Tag	VR	Comment
Q/R Study level (Study Root)			
Patient ID	0010,0020	LO	
Study Instance UID	0020,000D	UI	
Q/R Series level (Study Root)			
Study Instance UID	0020,000D	UI	

Series Instance UID	0020,000E	UI	
Q/R Image level (Study Root)			
SOP Instance UID	0008,0018	UI	
Study Instance UID	0020,000D	UI	
Series Instance UID	0020,000E	UI	

Table 95: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Sub-operations complete – No Failures	A response with this status code is sent.
Failed	A700	Out of resources	Logged and released association.
	A900	Invalid dataset	A response with this status code is sent. The reason is logged in the file
	C001	Unable to process	A response with this status code is sent. The reason is logged in the file
Warning	B000	Sub-operations compete – 1 or more failures	A response with this status code is sent when 1 or more export jobs fail
Pending	FF00	Sub-operations are continuing	A response with this status code is sent.
Cancel	FE00	Sub-operations are terminated due to cancel Request	A response with this status code is sent. Cancel request is sent to export work item. The reason is logged in the file.

Table 96: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

4.2.2.4.5. (Real-World) Activity – Image Import

4.2.2.4.5.1. Description and Sequencing of Activities

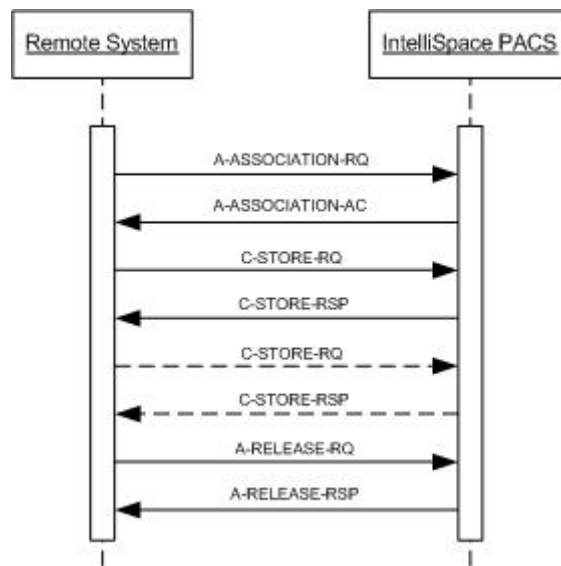


Figure 15: (Real-World) Activity – C-Store as SCP

4.2.2.4.5.2. Accepted Presentation Contexts

The presentation contexts are defined in next table.

Table 97: Acceptable Presentation Contexts for (Real-World) Activity – Image Import

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
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	SCP	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	SCP	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	SCP	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	JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91	SCP	None
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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		
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91	SCP	None
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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		
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	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		
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91	SCP	None
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
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		
		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		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 Intra-oral X-Ray Image Storage - Pres. SOP	1.2.840.10008.5.1.4.1.1.3	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 Intra-oral X-Ray Image Storage - Proc. SOP	1.2.840.10008.5.1.4.1.1.3.1	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		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Digital X-Ray Image Storage - For Proc. SOP	1.2.840.10008.5.1.4.1.1.1.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	RLE Lossless	1.2.840.10008.1.2.5	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Enhanced US Volume Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.2	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
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	SCP	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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		

Presentation Context Table									
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.				
Name	UID	Name List	UID List						
Hemodynamic Waveform Storage SOP Class	1.2.840.10008.5.1.4.1.1.9.2.1	RLE Lossless	1.2.840.10008.1.2.5	SCP	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						
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	SCP	None				
		Explicit VR Little Endian	1.2.840.10008.1.2.1						
		Implicit VR Little Endian	1.2.840.10008.1.2						
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91						
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90						
		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 (Process 14)	1.2.840.10008.1.2.4.57						
		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	SCP	None
						Explicit VR Little Endian	1.2.840.10008.1.2.1		
						Implicit VR Little Endian	1.2.840.10008.1.2		
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91								
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90								
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 (Process 14)	1.2.840.10008.1.2.4.57								
JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70								
RLE Lossless	1.2.840.10008.1.2.5								
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	SCP	None				
		Explicit VR Little Endian	1.2.840.10008.1.2.1						
		Implicit VR Little Endian	1.2.840.10008.1.2						
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91						
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90						
		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 (Process 14)	1.2.840.10008.1.2.4.57						
		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 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	SCP	None				
		Explicit VR Little Endian	1.2.840.10008.1.2.1						
		Implicit VR Little Endian	1.2.840.10008.1.2						
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91						

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 Single Bit Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7.1	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
		MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 SOP Class	1.2.840.10008.5.1.4.1.1.77.1.5.2	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Ophthalmic Photography 8 Bit Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.77.1.5.1	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
Pseudo-Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.3	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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	Ext. Neg.
Name	UID	Name List	UID List		
		JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
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	SCP	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	SCP	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	SCP	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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
RT Ion Beams Treatment Record Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.9	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		
RT Ion Plan Storage SOP Class	1.2.840.10008.5.1.4.1.1.481.8	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		
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	SCP	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	SCP	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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 SOP Class	1.2.840.10008.5.1.4.1.1.66.2	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		
Spatial Registration Storage SOP Class	1.2.840.10008.5.1.4.1.1.66.1	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		
Standalone Curve Storage SOP Class (Retired)	1.2.840.10008.5.1.4.1.1.9	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		
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	SCP	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	SCP	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	SCP	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	SCP	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	SCP	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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Class		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 (Retired)	1.2.840.10008.5.1.4.1.1.3	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	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 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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	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		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
		MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
		MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
		MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100		
		MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101		
		MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102		
		MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103		
		VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3		
Explicit VR Little Endian	1.2.840.10008.1.2.1				
Implicit VR Little Endian	1.2.840.10008.1.2				
MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100				
MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101				
MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102				
MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103				
X-Ray Angiographic Bi-Plane Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.3	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
(Retired)		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		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 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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90		
		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 (Process 14)	1.2.840.10008.1.2.4.57		
		JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		

Table 98: Proposed Presentation Contexts for (Real-World) Activity – Private SOP class Import

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
GE Private eNTEGRA Storage (Xeleris Auto Start/eNTEGRA Protocol Data or NM Genie)	1.2.840.113619.4.27	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		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Philips Private ViewForum 3D Volume New Storage	1.3.46.670589.5.0.1.1	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		
Philips Private ViewForum MR Synthetic Image Storage	1.3.46.670589.5.0.10	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		
Philips Private ViewForum MR Cardio Analysis New Storage	1.3.46.670589.5.0.11.1	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		
Philips Private ViewForum CX Synthetic Image Storage	1.3.46.670589.5.0.12	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		
Philips Private ViewForum Perfusion Storage	1.3.46.670589.5.0.13	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		
Philips Private ViewForum Perfusion Analysis Storage	1.3.46.670589.5.0.14	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		
Philips Private ViewForum 3D Volume Object New Storage	1.3.46.670589.5.0.2.1	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		
Philips Private ViewForum Surface New Storage	1.3.46.670589.5.0.3.1	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		
Philips Private ViewForum MR Cardio New Storage	1.3.46.670589.5.0.8.1	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		
Philips Private ViewForum CT Synthetic Image Storage	1.3.46.670589.5.0.9	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		
Philips Private X-Ray Image Storage	1.3.46.670589.2.3.1.1	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		
Philips Private Reconstructed X-ray Storage	1.3.46.670589.2.4.1.1	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		
Philips Private iE33 3D NEO Presentation State Subpage Storage	1.3.46.670589.2.5.1.1	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		
Philips Private EasyVision 3D Volume Object Storage	1.3.46.670589.5.0.2	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		
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	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		
Philips Private MR Spectrum	1.3.46.670589.11.0.0.12.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Storage		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Philips Private EasyVision MR Cardio Storage	1.3.46.670589.5.0.8	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		
Philips Private EasyVision MR Cardio Analysis Storage	1.3.46.670589.5.0.11	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		
Philips Private MR Cardio Profile Image Storage	1.3.46.670589.5.0.7	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		
Philips Private EasyVision Surface Storage	1.3.46.670589.5.0.3	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		
Philips Private EasyVision Volume Storage	1.3.46.670589.5.0.1	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		

Table 99: Acceptable Presentation Contexts for (Real-World) Activity – Structured Report Import

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
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	SCP	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	SCP	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	SCP	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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Detail SR Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.3	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		
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	SCP	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 Storage	1.2.840.10008.5.1.4.1.1.88.59	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		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Procedure Log Storage SOP Class	1.2.840.10008.5.1.4.1.1.88.40	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		

4.2.2.4.5.3. SOP Specific Conformance for Storage SOP Classes

The C-Store SCP will receive any DICOM objects (images and non-image objects) transmitted in the open associated provided that the correct presentation context is used. If the objects are received successfully, they are stored and registered in the IntelliSpace PACS 4.4.551.0 DICOM server local database; from there they can be loaded (and viewed) via IntelliSpace PACS 4.4.551.0 Radiology Viewer or IntelliSpace PACS 4.4.551.0 Enterprise Viewer. Objects are stored in the local database as files.

If the objects are not received successfully then they are placed in the error folder.

Depending upon the system configuration, the IntelliSpace PACS 4.4.551.0 DICOM Server application either performs “lifetime” persistence for the images received or manages an auto-deleted cache of the most recently active image studies. In the cache storage mode, images received will be deleted when the server disk space becomes full. Deletion will be performed based on a “least accessed patient” strategy. If an IntelliSpace PACS 4.4.551.0 client has accessed any part of a patient’s studies, all images associated with that patient have a lower probability of being deleted.

4.2.2.4.5.3.1. Dataset Specific Conformance for C-STORE-RSP

The IntelliSpace PACS 4.4.551.0 DICOM Server conforms to the SOPs of the Storage Service Class. No elements are discarded, but the following demographic elements may be modified:

Table 100: Attributes that may be modified by the IntelliSpace PACS 4.4.551.0 DICOM Server

Attribute Name	Tag
Accession Number	(0008, 0050)
Referring Physician	(0008, 0090)
Procedure Sequence	(0008, 1032)
> Code Value	(0008, 0100)
> Code Meaning	(0008, 0104)
Patient Name	(0010, 0010)
Patient ID	(0010, 0020)
Patient Birth Date	(0010, 0030)
Patient Sex	(0010, 0040)
Requesting Physician	(0032, 1032)

Modification of data elements is initiated either by processing of manual edits initiated by end users of the system or automatic edits initiated by information received from ADT and Order Entry systems (HIS/RIS).

Table 101: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful stored	Server succeeds with store operation and required DICOM was stored.
Failure	A700	Refused: Out of Resources	There is insufficient storage in the server. Caller should try again later. Critical error is logged in server Log file.

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

4.2.2.4.6.1. Description and Sequencing of Activities

The IntelliSpace PACS 4.4.551.0 supports synchronous and asynchronous mode for storage commitment SCP.

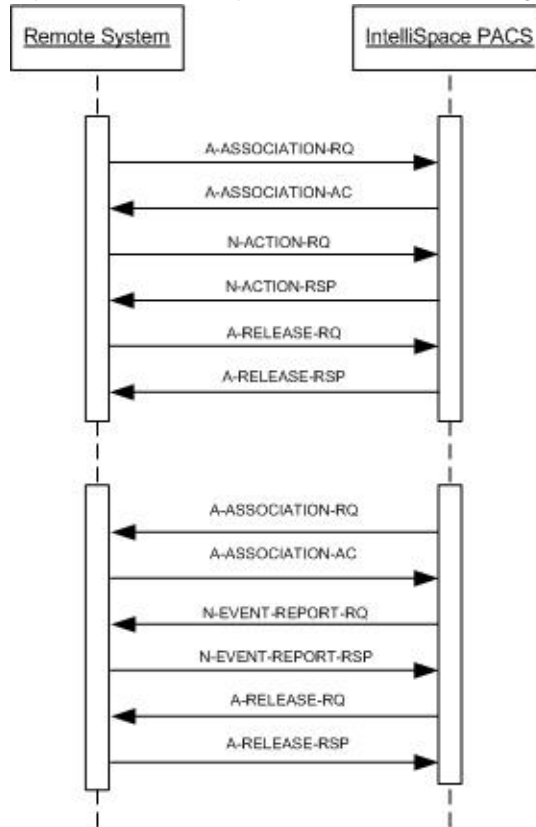


Figure 16: (Real-World) Activity – Asynchronous Storage Commitment as SCP

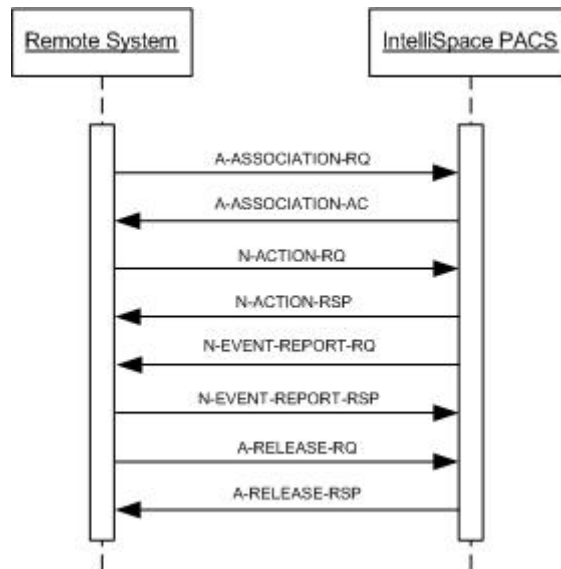


Figure 17: (Real-World) Activity – Synchronous Storage Commitment as SCP

4.2.2.4.6.2. Accepted Presentation Contexts

The presentation contexts are defined in next table.

Table 102: Acceptable Presentation Contexts for (Real-World) Activity – Storage Commitment Push Model AS SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	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		

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

The associated Activity with the Storage Commitment Push Model service is the communication by the STORAGE-SCP AE to peer AEs that it has committed to permanently store Composite SOP Instances that have been sent to it. It thus allows peer AEs to determine whether the IntelliSpace PACS 4.4.551.0 Server has taken responsibility for the archiving of specific SOP Instances so that they can be flushed from the peer AE system.

The STORAGE-SCP AE takes the list of Composite SOP Instance UIDs specified in a Storage Commitment Push Model N-ACTION Request and checks if they are present in the IntelliSpace PACS 4.4.551.0 DICOM Server application database. As long as the Composite SOP Instance UIDs are present in the database, the STORAGE-SCP AE will consider those Composite SOP Instance UIDs to be successfully archived. The STORAGE-SCP AE does not require the Composite SOP Instances to actually be successfully written to archive media in order to commit to responsibility for maintaining these SOP Instances.

Once the STORAGE-SCP AE has checked for the existence of the specified Composite SOP Instances, it will then attempt to send the Notification request (N-EVENT-REPORT-RQ). The default behavior is to attempt to send this Notification over the same Association that was used by the peer AE to send the original N-ACTION Request. If the Association has already been released or Message transfer fails for some reason then the STORAGE-SCP AE will attempt to send the N-EVENT-REPORT-RQ over a new Association. The STORAGE-SCP AE will request a new Association with the peer AE that made the original N-ACTION Request. The STORAGE-SCP AE can be configured to always open a new Association in order to send the Notification request.

The STORAGE-SCP AE will not cache Storage Commitment Push Model N-ACTION Requests that specify Composite SOP Instances that have not yet been transferred to the IntelliSpace PACS 4.4.551.0 DICOM Server application. If a peer AE sends a Storage Commitment Push Model N-ACTION Request before the specified Composite SOP Instances are later sent over the same Association, the STORAGE-SCP AE will not commit to responsibility for such SOP Instances.

The STORAGE-SCP AE does not support the optional Storage Media File-Set ID & UID attributes in the N-ACTION.

4.2.2.4.6.3.1. Dataset Specific Conformance for Storage Commitment Push Model N-EVENT-REPORT SCU

IntelliSpace PACS 4.4.551.0 server issues an N-EVENT-REPORT-RQ Commitment Push (a notification request). Once N-EVENT-REPORT-RQ is sent to the SCP IntelliSpace PACS 4.4.551.0 server waits for the response for the duration of 30 seconds. If response is not received within 30 seconds then error is written in the log.

In case of asynchronous communication, IntelliSpace PACS 4.4.551.0 server aborts the association. For synchronous storage commit, the operation for the specified association id fails.

Table 103: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful store	Message was received successfully
Failed	0110	Operation failed	If failed to parse the message. Association is aborted.
	0119	Class instance Conflict	Class instance conflict. Association is aborted.
	0210	Duplicate	Duplicate invocation. Association is aborted.
	0115	Bad argument	Invalid argument value. Association is aborted.
	0212	Wrong argument	Mistyped argument. Association is aborted.
	0114	No argument	No such argument. Association is aborted.

Service Status	Error Code	Further Meaning	Behavior
	0113	Wrong event type	No such event type. Association is aborted.
	0118	Wrong SOP class	No such SOP class. Association is aborted.
	0112	Wrong SOP instance	No such SOP instance. Association is aborted.
	0213	Resource limitation	No resources available. Association is aborted.
	0211	Unrecognized operation	Such operation is not recognized. Association is aborted.

4.2.2.4.6.3.2. Dataset Specific Conformance for Storage Commitment Push Model N-ACTION SCP

Site server receives an N-ACTION-RQ Commitment Push. Then it parses the storage commit message and extracts transaction UID, then referenced SOP sequence, and sequentially, referenced SOP class UIDs, referenced SOP instance UIDs and referenced SOP sequence. Upon a completion of this the IntelliSpace PACS 4.4.551.0 server returns the following status codes:

Table 104: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful store	Message was received successfully
Failed	0110	Operation failed	If failed to parse the message.

4.2.2.5. Dutch National Patient Identifier (BSN) support

Dutch National Patient Identifier support is implemented according to the Nictiz recommendation for both C-STORE-SCU and for C-FIND Q/R SCP. IntelliSpace PACS 4.4.551.0 BSN support can be enabled via the configuration. By default this is not enabled.

Additionally, per DICOM destination IntelliSpace PACS 4.4.551.0 can be configured if the destination can receive the BSN Patient Identifier or the patient's MRN in the Patient ID (0010, 0020) attribute.

The BSN Patient Identifier is only populated via HL7.

4.2.2.5.1. C-STORE SCU BSN support

The described behavior is additional to what is described in section 4.2.2.3.5.

The HL7 OID can be configured per assigning authority, so in case IntelliSpace PACS 4.4.551.0 receives only the HL7 namespace (HD.1) still a world-wide unique OID can be exported.

Table 105: C-STORE-SCU BSN mode additional attributes

Attribute Name	Tag	VR	Remark/ Comment
Patient Identification Module			
Patient's Name	0010,0010	PN	Returns only first, middle and last name
Patient ID	0010,0020	LO	Patient BSN Identifier
Issuer of Patient ID	0010,0021	LO	Always "2.16.840.1.113883.2.4.6.3"
Other Patient IDs Sequence	0010,1002	SQ	Existing Patient Identifiers received via DICOM in this sequence are preserved as is. The original Patient ID and BSN Identifier are added according following definition.
> Patient ID	0010,0020	LO	BSN or Patient ID
> Issuer of Patient ID	0010,0021	LO	In case of a BSN Patient ID it contains: "2.16.840.1.113883.2.4.6.3". For other Patient Identifiers the HL7 Namespace ID is filled in if defined.
> Type Of Patient ID	0010,0022	CS	"TEXT"
> Issuer of Patient ID Qualifiers Sequence	0010,0024	SQ	For non-BSN Patient ID entries this sequence is added in case an HL7 Universal Entity ID or HL7 Namespace exists
>> Universal Entity ID	0040,0032	UT	Value as configured for the HL7 assigning authority (the HL7 Universal Entity ID)
>> Universal Entity ID Type	0040,0033	CS	Type of configured HL7 Universal Entity ID if the HL7 Universal Entity ID exists

4.2.2.5.2. C-FIND Q/R SCP BSN support

This section specifies an extension to what is specified for the C-FIND-SCP (section 4.2.2.4.3) attributes for the Patient Root QR Information Model, the Study Root QR Information Model and Patient/Study Only Root QR information Model.

Table 106: C-FIND-SCP BSN mode additional attributes

Attribute Name	Tag	VR	Remark/ Comment	Matching Key Supported	Return Key Supported
Patient Identification Module					
Patient ID	0010,0020	LO	Matches MRN or BSN Patient Identifier depending on (0010,0021)	Y	Y
Issuer of Patient ID	0010,0021	LO	BSN Patient Identifier matching when "2.16.840.1.113883.2.4.6.3" otherwise MRN matching is done and the Issuer of Patient ID is ignored	Y	Y

4.2.3. IntelliSpace PACS 4.4.551.0 DICOM Worklist Server AE

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

4.2.3.1. SOP Classes

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

Table 107: SOP Classes for IntelliSpace PACS 4.4.551.0 DICOM Worklist Server AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	No	Yes
Modality Worklist Information Model - C-FIND SOP Class	1.2.840.10008.5.1.4.31	No	Yes

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

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 IntelliSpace PACS 4.4.551.0 Worklist Server supports the acceptance of DICOM associations for the DICOM Modality Worklist Service and the DICOM Verification Service. The IntelliSpace PACS 4.4.551.0 Worklist Server application supports a maximum PDU size of 64KB.

The DICOM standard application context name is specified in Table 108 below.

Table 108: DICOM Application Context

Description	Value
Application Context Name	1.2.840.10008.3.1.1.1

4.2.3.2.2. Number of Associations

The number of simultaneous associations that an Application Entity may support as an Initiator or Acceptor is specified.

Table 109: Number of associations as an Association Acceptor for this AE

Description	Value
Maximum number of simultaneous associations	Depends on hardware and overall system performance

4.2.3.2.3. Asynchronous Nature

The IntelliSpace PACS 4.4.551.0 Worklist Server application does not support negotiation of multiple outstanding transactions.

4.2.3.2.4. Implementation Identifying Information

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

Table 110: DICOM Implementation Class and Version for IntelliSpace PACS 4.4.551.0 DICOM Worklist Server AE

Description	Value
Implementation Class UID	1.3.46.670589.42.1.4.4.5
Implementation Version Name	PHISPACS44550

4.2.3.3. Association Initiation Policy

The Application Entity will respond to a received reject Association attempt as shown in next table.

Table 111: Association Rejection response

Result	Source	Reason/Diagnosis	Explanation
1 - rejected permanent	1 - DICOM UL service-user	1 - no-Reason-given	The user is informed and details are logged.
		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	
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	
		2 - local-limit-exceeded	
	3 - DICOM UL service provider (Presentation related function)	1 - temporary-congestion	
		2 - local-limit-exceeded	

The behavior of the AE on receiving an association abort is summarized in next table.

Table 112: Association Abort Handling

Source	Reason/Diagnosis	Behavior
0 - DICOM UL service-user (initiated abort)	0 - reason-not-specified	Notifies remote AE, terminates the connection and logs the event.
2 - DICOM UL service-provider (initiated abort)	0 - reason-not-specified	
	1 - unrecognized-PDU	

Source	Reason/Diagnosis	Behavior
	2 - unexpected-PDU	
	4 - unrecognized-PDU parameter	
	5 - unexpected-PDU parameter	
	6 - invalid-PDU-parameter value	

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

4.2.3.3.1.1. Description and Sequencing of Activities

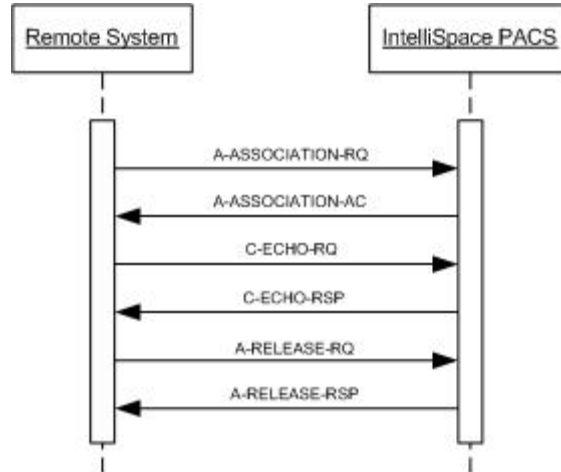


Figure 18: (Real-World) Activity – C-ECHO as SCP

4.2.3.3.1.2. Accepted Presentation Contexts

The presentation contexts are defined in next table.

Table 113: Acceptable Presentation Contexts for (Real-World) Activity – Verification as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	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		

4.2.3.3.1.3. SOP Specific Conformance for Verification SOP Class

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

4.2.3.3.1.3.1. Dataset Specific Conformance for Verification C-ECHO SCP

The DICOM command communication behavior is shown in the following table. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 114: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Confirmation	C-Echo request accepted

4.2.3.3.2. (Real-World) Activity – Modality Worklist as SCP

4.2.3.3.2.1. Description and Sequencing of Activities

A remote application entity will establish an association with the IntelliSpace PACS 4.4.551.0 Worklist Server entity in order to perform DICOM Modality Worklist operations. This activity is generally initiated by an end-user of the remote system interacting with some user interface to generate the requests.

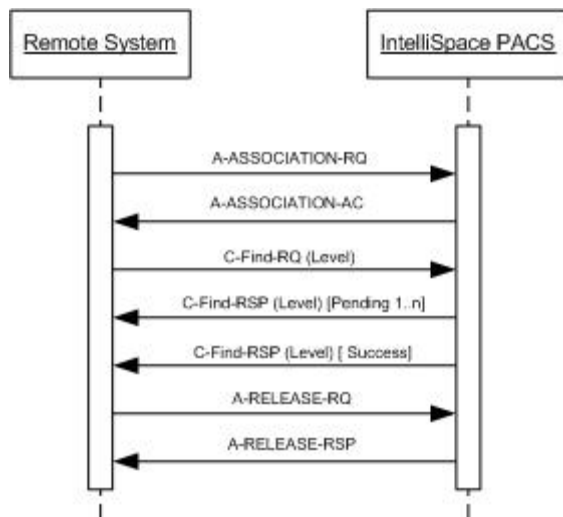


Figure 19: (Real-World World) Activity – Modality Worklist Information C-Find as SCP

4.2.3.3.2.2. Accepted Presentation Contexts

The presentation contexts are defined in next table.

Table 115: Acceptable Presentation Contexts for (Real-World) Activity – Modality worklist as SCP

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Modality Worklist Information Model - C-FIND SOP Class	1.2.840.10008.5.1.4.31	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		

4.2.3.3.2.3. SOP Specific Conformance for Modality Worklist Information Model - C-FIND SOP Class

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

4.2.3.3.2.3.1. Dataset Specific Conformance for Modality Worklist Information Model - C-FIND SCP

The supported C-Find request keys and the DICOM command communication behavior are shown in the following tables. The standard as well as the specific status codes and their corresponding behavior are also specified.

Table 116: Modality Worklist Return keys supported

Attribute Name	Tag	VR	Remark/ Comment	Matching Key Supported	Return Key Supported
SOP Common Module					
Specific Character Set	0008,0005	CS	Return the value as supplied in the request or "ISO_IR100" otherwise	N	Y

Attribute Name	Tag	VR	Remark/ Comment	Matching Key Supported	Return Key Supported
Timezone Offset From UTC	0008,0201	SH	Taken into account when matching the Scheduled Procedure Step Start Date and Start Time	Y	N
Patient Identification Module					
Patient's Name	0010,0010	PN	Returns only first, middle and last name	Y	Y
Patient ID	0010,0020	LO		Y	Y
Issuer of Patient ID	0010,0021	LO		N	Y
Patient Demographic Module					
Patient's Birth Date	0010,0030	DA		Y	Y
Patient's Sex	0010,0040	CS		Y	Y
Patient's Weight	0010,1030	DS		N	Y
Patient Comments	0010,4000	LT		N	Y
Confidentiality Constraint on Patient Data Description	0040,3001	LO	Returns value as sent in the request	N	Y
Patient Medical Module					
Medical Alerts	0010,2000	LO	Returns value as sent in the request	N	Y
Contrast Allergies	0010,2110	LO	Returns zero-length.	N	Y
Pregnancy Status	0010,21C0	US		N	Y
Special Needs	0038,0050	LO	Returns zero	N	Y
Patient State	0038,0500	LO	Returns value as sent in the request	N	Y
Visit Relationship Module					
Referenced Patient Sequence	0008,1120	SQ	Sequence is returned empty	N/A	Y
> Referenced SOP Class UID	0008,1150	UI		N	N
> Referenced SOP Instance UID	0008,1155	UI		N	N
Visit Identification Module					
Admission ID	0038,0010	LO	Returns value as sent in the request	N	Y
Visit Status Module					
Current Patient Location	0038,0300	LO	Returns value as sent in the request	N	Y
Scheduled Procedure Step Module					
Scheduled Procedure Step Sequence	0040,0100	SQ	The Attributes of the Scheduled Procedure Step can only be retrieved with Sequence Matching. The Scheduled Procedure Step Sequence contains only a single Item.	N/A	N/A
> Modality	0008,0060	CS		Y	Y
> Requested Contrast Agent	0032,1070	LO	Returns value as sent in the request	N	Y
> Scheduled Station AE Title	0040,0001	AE	The system uses a concept of resources which can map to one or more AE Titles. If the querying Modality is configured by the administrator to narrow the results by resources (AE titles), then the system returns all results that are scheduled on the resource, i.e. AE Titles mapped to that resource.	Y	Y
> Scheduled Procedure Step Start Date	0040,0002	DA	The Start Date and Time are combined with the 'Timezone offset from UTC' attribute from the request to determine the UTC date/Time. See Note [3] for explanation.	Y	Y
> Scheduled Procedure Step Start Time	0040,0003	TM	If both date and time keys are specified for Range Matching, e.g. the date range " 5\July 7" and the time range "10am\6pm" specifies the time period starting on July 5, 10am until July 7, 6pm.	Y	Y

Attribute Name	Tag	VR	Remark/ Comment	Matching Key Supported	Return Key Supported
> Scheduled Performing Physician's Name	0040,0006	PN		N	Y
> Scheduled Procedure Step Description	0040,0007	LO		N	Y
> Scheduled Protocol Code Sequence	0040,0008	SQ		N/A	Y
>> Code Value	0008,0100	SH		N	Y
>> Coding Scheme Designator	0008,0102	SH		N	Y
>> Code Meaning	0008,0104	LO		N	Y
> Scheduled Procedure Step ID	0040,0009	SH		N	Y
> Scheduled Station Name	0040,0010	SH	Returns value as sent in the request.	N	Y
> Scheduled Procedure Step Location	0040,0011	SH	Returned when available	N	Y
> Pre-Medication	0040,0012	LO	Returns value as sent in the request	N	Y
> Scheduled Procedure Step Status	0040,0020	CS	Currently, the only two supported values are "INPROGRESS" and "SCHEDULED".	N	Y
Requested Procedure Module					
Referenced Study Sequence	0008,1110	SQ		N/A	Y
> Referenced SOP Class UID	0008,1150	UI	Return value is fixed to "1.2.840.10008.3.1.2.3.1"	N	Y
> Referenced SOP Instance UID	0008,1155	UI		N	Y
Study Instance UID	0020,000D	UI		N	Y
Requested Procedure Description	0032,1060	LO		N	Y
Requested Procedure Code Sequence	0032,1064	SQ		N/A	Y
> Code Value	0008,0100	SH		N	Y
> Coding Scheme Designator	0008,0102	SH		N	Y
> Code Meaning	0008,0104	LO		N	Y
Requested Procedure ID	0040,1001	SH		Y	Y
Reason for the Requested Procedure	0040,1002	LO		N	Y
Requested Procedure Priority	0040,1003	SH	Returns: "STAT" or "ROUTINE"	N	Y
Patient Transport Arrangements	0040,1004	LO	Returns zero-length.	N	Y
Requested Procedure Comments	0040,1400	LT		N	Y
Imaging Service Request Comments	0040,2400	LT		N	Y
Imaging Service Request Module					
Accession Number	0008,0050	SH		Y	Y
Referring Physician's Name	0008,0090	PN	No matching but returned when available	N	Y
Requesting Physician	0032,1032	PN		N	Y
Reason for the Imaging Service Request	0040,2001	LO		N	Y
Filler Order Number	0040,2017	LO		N	Y

Notes:

- [1] Keys that are not specified in the C-FIND-RQ are not returned in C-FIND-RSP.
- [2] For return keys with the text "same value as in Request" in the remark/comment column the value supplied in the request is copied to every response that results from that request. Other return key values are obtained from the IntelliSpace PACS 4.4.551.0 clinical data repository.
- [3] Supplying the Timezone Offset from UTC (0008, 0201) adds the following semantics to the Scheduled Procedure Step Start Date (0040, 0002) and Scheduled Procedure Step Start Time (0040,0003):
 - i. If the Timezone Offset from UTC is supplied in the DMWL Request Identifier structure then this Timezone offset value is being used to adjust the matching and return value for Scheduled Procedure Step Start Date (0040,0002) and Scheduled Procedure Step Start Time (0040,0003) accordingly.

- ii. When the Timezone offset from UTC is not being sent in the DMWL request Identifier structure, we first check if the UTC offset is available in the DMWL Configuration and use that to adjust the matching and return value for the attributes Scheduled Procedure Step Start Date (00400002) and Scheduled Procedure Step Start Time (0040,0003). In case the UTC Offset is not available from the DMWL Configuration, the UTC offset of the server is used to adjust the matching and return values for the Scheduled Procedure Step Start Date and Scheduled Procedure Step Start Time.
- iii. The Scheduled Procedure Step Start Date and the Scheduled Procedure Step Start Time returned in the C-FIND-RSP are corrected for the Timezone Offset from UTC (so are returned in the Timezone of the client). The Timezone Offset from UTC (0008,0201) attribute itself is not returned.

Table 117: Status Response

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Matching is complete	A response is sent with this status code.
Refused	A700	Out of Resources	A response is sent with this status code. Reason is Logged and released association.
Failure	C000	Unable to process	A response is send with this status code. The reason is logged in the file.
Pending	FF00	Current match is supplied	Matches are continuing; Current match is supplied.
Cancel	FE00	Matching terminated due to Cancel Request	No more C-FIND pending responses will be sent and a final response with this status code is sent. Cancel request is logged.

Table 118: Communication Failure Behavior

Exception	Behavior
Timeout	The association is released and the reason is logged
Association Aborted	The association is released and the reason is logged

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).

The TCP/IP Stack as supported by the underlying Operating System.

The API is the WinSock 2 interface as supported by the underlying Operating System.

4.3.2. Additional Protocols

Not applicable

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

An important installation issue is the translation from AE title to presentation address. How this is to be performed is described here.

4.4.1.1. Local AE Titles

The table shows the pre-configured AE Titles. All AE Titles can be changed via the IntelliSpace PACS 4.4.551.0 configuration.

Table 119: AE Title configuration table

Application Entity	Role	Default AE Title	Default TCP/IP Port
IntelliSpace PACS 4.4.551.0 DICOM Server AE	C-STORE-SCP	STENTOR_SCP[1]	104
	C-STORE-SCU	STENTOR_SCU	N/A
	Federation	DefaultAETitle	N/A
	Storage Commit SCU	STENTOR_SCSCU	N/A
	Q/R SCP	STENTOR_QRP	107
	Q/R SCU	STENTOR_QRU	N/A
	DMWL SCP	STENTOR_SCP[1]	8104
IntelliSpace PACS 4.4.551.0 DICOM Radiology Client AE	Print SCU	STENTOR_SCU	N/A

Notes:

- [1] The IntelliSpace PACS 4.4.551.0 supports multiple healthcare organizations in a single IntelliSpace PACS 4.4.551.0 database and provides a hierarchical and secure multi-organization design. The name of each organization is used as the AE Title for the C-STORE-SCP.

4.4.2. Parameters

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

Table 120: Configuration Parameters Table

Parameter	Configurable	Default Value
General Parameter		
Time-out waiting for acceptance or rejection Response to an Association Open Request (Application Level timeout)	No	30 seconds
General DIMSE level time-out values (Verification, Storage, Storage Commitment)	No	30 seconds
Time-out for response to TCP/IP connect request. (Low-level timeout)	No	30 seconds
Time-out waiting for acceptance of a TCP/IP message over the network (Low-level timeout)	No	30 seconds
Time-out for waiting for data between TCP/IP packets. (Low-level timeout)	No	30 seconds
AE Specific Parameters		
Maximum PDU size the AE can receive	No	64234 bytes
Maximum PDU size the AE can send	No	64234 bytes
Storage Commitment Specific Parameters		
Storage Commitment Retry Count	No	18
Print Management Specific Parameters		
Delay between retries	No	60 seconds

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

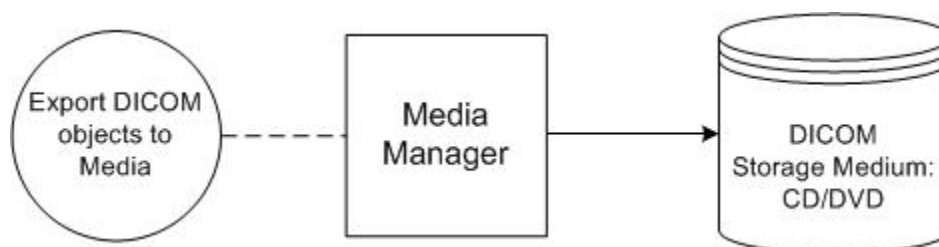


Figure 20: Media Application Data Flow Diagram

The Media Manager Application Entity exports images and Presentation States to a removable media (CD/DVD) Storage. It is associated with the local real-world activity “Export DICOM objects to media.” “Export DICOM objects to Media” is performed upon user request for selected patients, studies, series or instances (images or presentation states).

5.1.2. Functional Definitions of AE's

This section contains the functional definition of each individual local Media Application Entity.

5.1.2.1. Functional Definition of Media-Manager Application Entity

The IntelliSpace PACS 4.4.551.0 Media Manager Application is part of the Media Manager tool from the IntelliSpace PACS 4.4.551.0 Client. It is capable of exporting local exams in DICOM Media format, including the DICOMDIR for the File set. Only one File set and DICOMDIR is allowed on the Media. Spanning File sets across multiple CD's or DVD's is not supported. Transfer syntax for the media will be the same as the Received or Created SOP Classes, transfer syntax.

5.1.3. Sequencing of Real World Activities

At least one image/presentation state/structured report/etc. must exist and be selected before the Media Manager Application Entity can be invoked. The operator can insert a new CD/DVD media at any time before or after invocation of the Media Application Entity. The Media Application Entity will wait indefinitely for a media to be inserted before starting to write to the media device.

5.1.4. File Meta Information Options

The implementation information written to the File Meta Header in each file is:

Table 121: DICOM Implementation Class and Version for Media Storage

Implementation Class UID	1.3.46.670589.42.1.4.4.5
Implementation Version Name	PHISPACS44550

5.2. Exporting DICOM SOP Classes on Media

IntelliSpace PACS 4.4.551.0 support the export of all the transferred SOP Classes received on the Network or Created by IntelliSpace PACS 4.4.551.0 .

The Encapsulated PDF Storage SOP Class is supported only for the purpose of translating the Radiology Reports that are received through the HL7 ORU message and are transcoded to DICOM Encapsulated PDF and can be exported only through the DICOM Media. Enclosed is the Presentation Context for the media exported of Encapsulated PDF Storage SOP Class:

Table 122: Presentation Contexts for (Real-World) Activity – Exporting DICOM SOP Classes on Media

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Encapsulated PDF Storage SOP Class	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		

5.2.1. BSN Patient Identifier Support on Media

The BSN Patient Identifier can be stored on DICOM Media when selected by the user

The BSN Patient Identifier is stored in the Patient Id attribute (0010,0020) in the DICOMDIR and is accompanied by the Issuer of Patient Id attribute (0010,0021). The Issuer of Patient Id has a fixed value of "2.16.840.1.113883.2.4.6.3".

The DICOM SOP instance Patient Identifier attributes is updated according section 4.2.2.5.1.

6. Support of Character Sets

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

Table 123: Supported DICOM Character Sets

Character Set Description	Defined Term	ESC Sequence	ISO Registration Number	Code Element	Character Set
Latin alphabet No. 1	ISO_IR 100	N/A	ISO-IR 6	G0	ISO 646
		N/A	ISO-IR 100	G1	Supplementary set of ISO 8859

7. Security

7.1. Security Profiles

The IntelliSpace PACS 4.4.551.0 allows the use of either a conventional (non-secure) DICOM communication or a secure DICOM communication based on the Transport Layer Security (TLS) protocol. If configured, the IntelliSpace PACS 4.4.551.0 supports security measures for:

- Secure authentication of a node
- Integrity and confidentiality of transmitted data
- Replay protection
- Access control and user authentication

7.1.1. Security Transport Connection Profiles

Secure communication is a "mode of operation" supported by the implementation of the DICOM Basic TLS Secure Transport Connection Profile [DICOM]. This functionality will be used by the nodes, which can authenticate each other before they exchange DICOM information. For secure communication the TLS protocol v1.2 is used which provides message authentication, integrity, confidentiality, and replay protection. Confidentiality is optional and can be controlled by the encryption settings. The IntelliSpace PACS 4.4.551.0 may communicate using the following Cipher Suites:

- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA (dh 256) – A
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA (dh 256) – A
- TLS_RSA_WITH_AES_256_CBC_SHA (rsa 1024) – A
- TLS_RSA_WITH_AES_128_CBC_SHA (rsa 1024) – A
- TLS_RSA_WITH_3DES_EDE_CBC_SHA (rsa 1024) – D
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA (dh 256) – A
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA (dh 256) – A
- TLS_RSA_WITH_AES_256_CBC_SHA (rsa 1024) – A
- TLS_RSA_WITH_AES_128_CBC_SHA (rsa 1024) - A
- TLS_RSA_WITH_3DES_EDE_CBC_SHA (rsa 1024) – D
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384 (dh 256) – A
- TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 (dh 128) - B
- TLS_DHE_RSA_WITH_AES_128_GCM_SHA256 (dh 128) – C
- TLS_RSA_WITH_AES_256_GCM_SHA384 (rsa 1024) - A
- TLS_RSA_WITH_AES_128_GCM_SHA256 (rsa 1024) – A
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 (dh 256) – A
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA (dh 256) - A
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA (dh 256) – A
- TLS_RSA_WITH_AES_256_CBC_SHA256 (rsa 1024) – A
- TLS_RSA_WITH_AES_128_CBC_SHA256 (rsa 1024) – A
- TLS_RSA_WITH_AES_256_CBC_SHA (rsa 1024) – A
- TLS_RSA_WITH_AES_128_CBC_SHA (rsa 1024) - A
- TLS_RSA_WITH_3DES_EDE_CBC_SHA (rsa 1024) - D

The IntelliSpace PACS 4.4.551.0 supports X.509 certificates. The following TLS Certification checks will be done (TLS Handshake). The machine (either server or client) that will send its certificate will:

- Choose the certificate according to Common Name (CN) value in the Subject-field.
- This name is case-sensitive. All present certificates should have unique CN names.

The server verifies:

- That the client certificate is a X.509 certificate which is not tampered with

- That the client certificate is in the list of trusted certificates
- That the client certificate is not expired (present time is between "Valid From" and "Valid To" fields of the X.509 certificate)
- That the client certificate has the correct purpose (at least the Client Authentication purpose)

The client verifies:

- That the server certificate is a X.509 certificate which is not tampered with
- That the server certificate is in the list of trusted certificates
- That the server certificate is not expired (present time is between "Valid From" and "Valid To" fields of the X.509 certificate)
- That the server certificate has the correct purpose (at least Server Authentication purpose)

The IntelliSpace PACS 4.4.551.0 can only read certificates from the certificate stores of the HKEY_LOCAL_MACHINE registry key. It is the responsibility of the Hospital to setup and maintain the certificate stores. This includes the removal of revoked certificates and certificate updates prior to their expiration. Since neither X.500 directories, neither Lightweight Directory Access Protocol (LDAP) nor Certificate Revocation Lists (CRLs) are supported, the whole certificate chain needs to be replaced after a security breach.

IntelliSpace PACS 4.4.551.0 supports DICOM communication in the secure and unsecure modes, which can be configurable at system level.

Secure and Unsecure modes are supported on the following default ports, which are configurable.

DICOM Service	Secured Port	Unsecured Port
STORE	2762	104
QR SCP	2765	107
DMWL SCP	10104	8104

The following figure presents the message flow of TLS handshake supported.

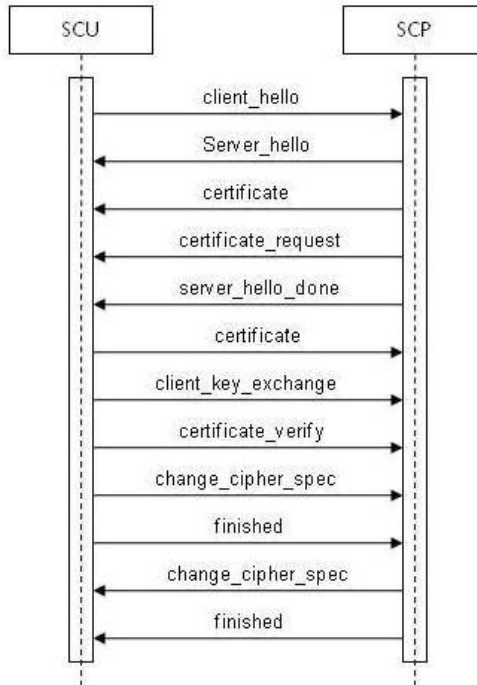


Figure 21: Message flow of TLS handshake

7.1.2. Attribute Confidentiality Profiles

No instances of the Encrypted Attributes Data Set are created. No Transfer Syntaxes are supported for encoding/decoding of Encrypted Attributes Data Sets.

The IntelliSpace PACS 4.4.551.0 allows configuring replacement values from the administration application and these values are used while exporting.

Note: These attributes are applicable for following.

Export data from server to DICOM destination (iExport).

Export data from client application to DICOM media (Local Export)

The table below lists the protected attributes. The terms used to describe the replacement value (default) can be read as below:

Table 124: Basic Application Level Confidentiality Profile Attributes supported by IntelliSpace PACS 4.4.551.0

Name	Tag	VR	Replacement Value
Instance Creation Date	0008,0012	DA	Empty
Instance Creation Time	0008,0013	TM	Empty
Study Date	0008,0020	DA	Anonymized Study Date
Series Date	0008,0021	DA	Anonymized Study Date
Acquisition Date	0008,0022	DA	Empty
Content Date	0008,0023	DA	Anonymized Study Date
Acquisition Date/Time	0008,002A	DT	Anonymized Study Date Time
Study Time	0008,0030	TM	Anonymized Study Time
Series Time	0008,0031	TM	Anonymized Study Time
Acquisition Time	0008,0032	TM	Empty
Content Time	0008,0033	TM	Anonymized Study Time
Accession Number	0008,0050	SH	Anonymized Accession number
Institution Name	0008,0080	LO	Empty
Institution Address	0008,0081	ST	Empty
Referring Physician's Name	0008,0090	PN	Empty
Referring Physician's Address	0008,0092	ST	Empty
Referring Physician's Telephone No	0008,0094	SH	Empty
Code meaning	0008,0104	LO	Empty
Station Name	0008,1010	SH	Empty
Study Description	0008,1030	LO	Empty
Series Description	0008,103E	LO	Empty
Institutional Department Name	0008,1040	LO	Empty
Physician of Record	0008,1048	PN	Empty
Attribute Modification DateTime	0400,0562	DT	Empty
Performing Physician Name	0008,1050	PN	Empty
Performing Physician Identification Sequence	0008,1052	SQ	Attribute is removed
Name of Physician Reading Study	0008,1060	PN	Empty
Physician(s) Reading Study Identification Sequence	0008,1062	SQ	Attribute is removed
Operator Name	0008,1070	PN	Empty
Operator Identification Sequence	0008,1072	SQ	Attribute is removed
Admitting Diagnosis Description	0008,1080	LO	Empty
Derivation Description	0008,2111	ST	Empty
Identifying Comments	0008,4000	LT	Empty
Patient Name	0010,0010	PN	Anonymized Patient Name
Patient ID	0010,0020	LO	Anonymized MRN

Name	Tag	VR	Replacement Value
Issuer of Patient ID	0010,0021	LO	Empty
Patient Birth Date	0010,0030	DA	Anonymized DOB
Patient's Birth Time	0010,0032	TM	Empty
Patient's Sex	0010,0040	CS	Anonymized Sex
Patient Insurance Plan Code Sequence	0010,0050	SQ	Attribute is removed
Other Patient IDs	0010,1000	LO	Empty
Other Patient Names	0010,1001	PN	Empty
Other Patient IDs Sequence	0010,1002	SQ	Attribute is removed
Patient Birth Name	0010,1005	PN	Empty
Patient Age	0010,1010	AS	Empty
Patient Size	0010,1020	DS	Empty
Patient Weight	0010,1030	DS	Empty
Patient Address	0010,1040	LO	Empty
Patient Insurance Plan ID	0010,1050	LO	Empty
Patient's Mother's Birth Name	0010,1060	PN	Empty
Military Rank	0010,1080	LO	Empty
Branch of (military) Service	0010,1081	LO	Empty
Medical Record Locator	0010,1090	LO	Empty
Medical Alerts	0010,2000	LO	Empty
Contrast Allergies	0010,2110	LO	Empty
Country of Residence	0010,2150	LO	Empty
Region of Residence	0010,2152	LO	Empty
Patient Telephone Number	0010,2154	SH	Empty
Ethnic Group	0010,2160	SH	Empty
Occupation	0010,2180	SH	Empty
Smoking Status	0010,21A0	CS	Empty
Additional Patient History	0010,21B0	LT	Empty
Pregnancy Status	0010,21C0	US	Empty
Last Menstrual Date	0010,21D0	DA	Empty
Patient Religious Preference	0010,21F0	LO	Empty
Responsible Person	0010,2297	PN	Empty
Responsible Organization	0010,2299	LO	Empty
Patient Comments	0010,4000	LT	Empty
Clinical Trial Sponsor Name	0012,0010	LO	Empty
Clinical Trial Protocol ID	0012,0020	LO	Empty
Clinical Trial Protocol Name	0012,0021	LO	Empty
Clinical Trial Site ID	0012,0030	LO	Empty
Clinical Trial Site Name	0012,0031	LO	Empty
Clinical Trial Subject ID	0012,0040	LO	Empty
Clinical Trial Subject Reading ID	0012,0042	LO	Empty
Clinical Trial Time Point ID	0012,0050	LO	Empty
Clinical Trial Time Point Description	0012,0051	ST	Empty
Clinical Trial Coordinating Center Name	0012,0060	LO	Empty
Clinical Trial Series ID	0012,0071	LO	Empty
Clinical Trial Series Description	0012,0072	LO	Empty
Device Serial Number	0018,1000	LO	Empty
Date of Secondary Capture	0018,1012	DA	Empty
Protocol Name	0018,1030	LO	Empty
Radiopharmaceutical Start DateTime	0018,1078	DT	Empty

Name	Tag	VR	Replacement Value
Radiopharmaceutical Stop DateTime	0018,1079	DT	Empty
Date of Last Calibration	0018,1200	DA	Empty
Acquisition Comments	0018,4000	LT	Empty
Date of Last Detector Calibration	0018,700C	DA	Empty
Frame Acquisition DateTime	0018,9074	DT	Empty
Frame Reference DateTime	0018,9151	DT	Empty
Start Acquisition DateTime	0018,9516	DT	Empty
End Acquisition DateTime	0018,9517	DT	Empty
Contribution DateTime	0018,A002	DT	Empty
Study ID	0020,0010	SH	Empty
Modified Image Date	0020,3403	DA	Empty
Image Comments	0020,4000	LT	Empty
Frame Comments	0020,9158	LT	Empty
Image Presentation Comments	0028,4000	LT	Empty
Study Verified Date	0032,0032	DA	Empty
Study Read Date	0032,0034	DA	Empty
Scheduled Study Start Date	0032,1000	DA	Empty
Scheduled Study Stop Date	0032,1010	DA	Empty
Requesting Physician	0032,1032	PN	Empty
Requesting Service	0032,1033	LO	Empty
Study Arrival Date	0032,1040	DA	Empty
Study Completion Date	0032,1050	DA	Empty
Study Comments	0032,4000	LT	Empty
Referenced Patient Alias Sequence	0038,0004	SQ	Attribute is removed
Visit Status ID	0038,0008	CS	Empty
Admission ID	0038,0010	LO	Empty
Issuer of Admission ID	0038,0011	LO	Empty
Route of Admissions	0038,0016	LO	Empty
Scheduled Admission Date	0038,001A	DA	Empty
Scheduled Admission Time	0038,001B	TM	Empty
Scheduled Discharge Date	0038,001C	DA	Empty
Scheduled Discharge Time	0038,001D	TM	Empty
Scheduled Patient Institution Residence	0038,001E	LO	Empty
Admitting Date	0038,0020	DA	Empty
Admitting Time	0038,0021	TM	Empty
Discharge Date	0038,0030	DA	Empty
Discharge Time	0038,0032	TM	Empty
Discharge Diagnosis Description	0038,0040	LO	Empty
Discharge Diagnosis Code Sequence	0038,0044	SQ	Attribute is removed
Special Needs	0038,0050	LO	Empty
Service Episode ID	0038,0060	LO	Empty
Service Episode Description	0038,0062	LO	Empty
Current Patient Location	0038,0300	LO	Empty
Patient's Institution Residence	0038,0400	LO	Empty
Patient State	0038,0500	LO	Empty
Patient Clinical Trial Participation Sequence	0038,0502	SQ	Attribute is removed
Visit Comments	0038,4000	LT	Empty
Scheduled Procedure Step Start Date	0040,0002	DA	Anonymized Study Date
Scheduled Procedure Step End Date	0040,0004	DA	Empty

Name	Tag	VR	Replacement Value
Scheduled Performing Physician's Name	0040,0006	PN	Empty
Scheduled Procedure Step Description	0040,0007	LO	Empty
Performed Procedure Step Start Date	0040,0244	DA	Empty
Performed Procedure Step Start Time	0040,0245	TM	Empty
Performed Procedure Step End Date	0040,0250	DA	Empty
Performed Procedure Step Stop Time	0040,0251	TM	Empty
Performed Procedure Step ID	0040,0253	SH	Empty
Performed Procedure Step Description	0040,0254	LO	Empty
Request Attributes Sequence	0040,0275	SQ	Attribute is removed
Comments on the Performed Procedure Step	0040,0280	ST	Empty
Comments on Radiation Dose	0040,0310	ST	Empty
Comments on the Scheduled Procedure Step	0040,0400	LT	Empty
Names of Intended Recipients of Results	0040,1010	PN	Empty
Requested Procedure Comments	0040,1400	LT	Empty
Issue Date of Imaging Service Request	0040,2004	DA	Empty
Order Entered By	0040,2008	PN	Empty
Imaging Service Request Comments	0040,2400	LT	Empty
Scheduled Procedure Step Start Date and Time	0040,4005	DT	Anonymized Study Date Time
Scheduled Procedure Step Modification Date and Time	0040,4010	DT	Empty
Expected Completion Date and Time	0040,4011	DT	Empty
Human Performer's Name	0040,4037	PN	Empty
Verification Date Time	0040,A030	DT	Anonymized Study Date Time
Observation Date Time	0040,A032	DT	Empty
Verifying Observer Name	0040,A075	PN	Empty
Participation DateTime	0040,A082	DT	Empty
DateTime	0040,A120	DT	Empty
Date	0040,A121	DA	Empty
Person Name	0040,A123	PN	Empty
Referenced DateTime	0040,A13A	DT	Empty
Content Sequence	0040,A730	SQ	Attribute is removed
Template Version	0040,DB06	DT	Empty
Template Local Version	0040,DB07	DT	Empty
HL7 Document Effective Time	0040,E004	DT	Anonymized Study Date Time
Approval Status DateTime	0044,0004	DT	Anonymized Study Date Time
Product Expiration DateTime	0044,000B	DT	Empty
Substance Administration DateTime	0044,0010	DT	Empty
Presentation Creation Date	0070,0082	DA	Anonymized Study Date
Content Creator's Name	0070,0084	PN	Empty
Hanging Protocol Creation DateTime	0072,000A	DT	Anonymized Study Date Time
Selector PN Value	0072,006A	PN	Empty
SOP Authorization Date and Time	0100,0420	DT	Empty
Digital Signature DateTime	0400,0105	DT	Anonymized Study Date Time
Attribute Modification DateTime	0400,0562	DT	Anonymized Study Date Time
Creation Date	2100,0040	DA	Empty
Structure Set Date	3006,0008	DA	Empty
ROI Interpreter	3006,00A6	PN	Empty
Treatment Control Point Date	3008,0024	DA	Anonymized Study Date
First Treatment Date	3008,0054	DA	Empty
Most Recent Treatment Date	3008,0056	DA	Empty

Name	Tag	VR	Replacement Value
Safe Position Exit Date	3008,0162	DA	Empty
Safe Position Return Date	3008,0166	DA	Empty
Treatment Status Comment	3008,0202	ST	Empty
Treatment Date	3008,0250	DA	Empty
RT Plan Date	300A,0006	DA	Empty
Source Strength Reference Date	300A,022C	DA	Anonymized Study Date
Setup Image Comment	300A,0402	ST	Empty
Review Date	300E,0004	DA	Empty
Reviewer Name	300E,0008	PN	Empty
Text Comments	4000,4000	LT	Empty
Interpretation Recorded Date	4008,0100	DA	Empty
Interpretation Recorder	4008,0102	PN	Empty
Interpretation Transcription Date	4008,0108	DA	Empty
Interpretation Transcriber	4008,010A	PN	Empty
Interpretation Author	4008,010C	PN	Empty
Interpretation Approval Date	4008,0112	DA	Empty
Physician Approving Interpretation	4008,0114	PN	Empty
Distribution Name	4008,0119	PN	Empty
Results Comments	4008,4000	ST	Empty
Overlay Comments	6000,4000	LT	Empty
Overlay Comments	6002,4000	LT	Empty
Overlay Comments	6004,4000	LT	Empty
Overlay Comments	6006,4000	LT	Empty
Overlay Comments	6008,4000	LT	Empty
Overlay Comments	600A,4000	LT	Empty
Overlay Comments	600C,4000	LT	Empty
Overlay Comments	600E,4000	LT	Empty
Overlay Comments	6010,4000	LT	Empty
Overlay Comments	6012,4000	LT	Empty
Overlay Comments	6014,4000	LT	Empty
Overlay Comments	6016,4000	LT	Empty
Overlay Comments	6018,4000	LT	Empty
Overlay Comments	601A,4000	LT	Empty
Overlay Comments	601C,4000	LT	Empty
Overlay Comments	601E,4000	LT	Empty

7.1.3. Network Address Management Profiles

IntelliSpace PACS 4.4.551.0 incorporates Microsoft active directory integrated DNS. The IP addresses are assigned manually to each of the IntelliSpace PACS 4.4.551.0 node. The name resolution of IntelliSpace PACS 4.4.551.0 node is carried out on the DNS active directory integrated DNS. The DNS client can obtain the IP number for any of the node by giving the DNS hostname to a DNS server and receive IP number in response.

7.1.4. Time Synchronization Profiles

Time synchronization for each of the IntelliSpace PACS 4.4.551.0 node is done through active directory service. An extended NTP is configured on the IntelliSpace PACS 4.4.551.0 environment based on the time server availability at customer location.

7.1.5. Application Configuration Management Profiles

IntelliSpace PACS 4.4.551.0 uses active directory in place of LDAP. In IntelliSpace PACS 4.4.551.0 environment used to create domain for all the IntelliSpace PACS 4.4.551.0 nodes (member servers). Active directory is mainly used for name resolution between nodes & create application service accounts.

7.2. Association Level Security

Enterprise Imaging provides association level security by accepting association requests from any DICOM AEs .if the AE is UNKNOWN by organization configuration then data will be listed in exception worklist.

7.3. Application Level Security

Enterprise Imaging application requires a valid user credentials to login.

8. Annexes of application "IntelliSpace PACS 4.4.551.0"

8.1. IOD Contents

8.1.1. Created SOP Instance

This section specifies each IOD created by this application.

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 can 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
 Optional The module is optional

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

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 125: List of created SOP Classes

SOP Class Name	SOP Class UID
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1

The IntelliSpace PACS 4.4.551.0 Created SOP Classes instances will use the Philips PACS Instance UID identification: 1.3.46.670589.42.3.x Where x will identify the specific instance.

The RAWDATA SOP Class is a Standard Extended SOP Class and it is described in the section 8.5.1.

The Encapsulated PDF Storage SOP Class, is being created only for Media Export, for more details see Sections 5.2 and 8.1.1.3

8.1.1.2. Grayscale Softcopy Presentation State Storage SOP Class

Table 126: IOD of Created Grayscale Softcopy Presentation State Storage SOP Class Instances

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
	Presentation Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Presentation State	Presentation State Identification Module	ALWAYS
	Presentation State Relationship Module	ALWAYS
	Overlay Plane Module	CONDITIONAL
	Overlay Activation Module	CONDITIONAL
	Displayed Area Module	ALWAYS for Creation. Not Supported for Loading
	Graphic Annotation Module	CONDITIONAL
	Spatial Transformation Module	CONDITIONAL
	Graphic Layer Module	CONDITIONAL
	Modality LUT Module	CONDITIONAL
	Softcopy VOI LUT Module	CONDITIONAL
	Softcopy Presentation LUT Module	ALWAYS
	SOP Common Module	ALWAYS

Note: The enclosed GSPS Modules supported are describing both the GSPS object Creation/Write and loading GSPS objects from importing Studies from modalities or other workstations.

Table 127: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN	Any	VNAP	COPY	
Patient ID	0010,0020	LO	Any	VNAP	COPY	
Patient's Birth Date	0010,0030	DA	Any	VNAP	COPY	
Patient's Sex	0010,0040	CS	Any	VNAP	COPY	

For Patient module, the optional type 3 tags are not being loaded and similarly for the created new GSPS these type 3 tags are not added.

Table 128: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA	Any	VNAP	COPY	
Study Time	0008,0030	TM	Any	VNAP	COPY	
Accession Number	0008,0050	SH	Any	VNAP	COPY	
Referring Physician's Name	0008,0090	PN	Any	VNAP	COPY	
Study Instance UID	0020,000D	UI	Any	ALWAYS	AUTO	
Study ID	0020,0010	SH	Any	VNAP	COPY	

Table 129: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Anatomical Orientation Type	0010,2210	CS	BIPED, QUADRUPED	N/A	N/A	Not Supported

Patient Position	0018,5100	CS	HFP, HFS, HFDR, HFDL, FFDR, FFDL, FFP, FFS	ANAP	COPY	Not Supported
Series Instance UID	0020,000E	UI	Any	ALWAYS	AUTO	
Series Number	0020,0011	IS	Any	VNAP	AUTO	
Laterality	0020,0060	CS	L, R	ANAP	COPY	Not Supported

For General Series module, the optional type 3 tags are not being loaded and similarly for the created new GSPS these type 3 tags are not added.

Table 130: Presentation Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS	PR	ALWAYS	FIXED	

Table 131: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Any	VNAP	AUTO	
Institution Name	0008,0080	LO	Any	VNAP	AUTO	The institution name is not entered when created a GSPS

For General Equipment module, the optional type 3 tags are not being loaded and similarly for the created new GSPS these type 3 tags are not added.

Table 132: Presentation State Identification Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS	Any	ALWAYS	AUTO	
Content Label	0070,0080	CS	Any	ALWAYS	AUTO	
Content Description	0070,0081	LO	Any	VNAP	USER	
Presentation Creation Date	0070,0082	DA	Any	ALWAYS	AUTO	
Presentation Creation Time	0070,0083	TM	Any	ALWAYS	AUTO	
Content Creator's Name	0070,0084	PN	Any	VNAP	AUTO	

For Presentation State Identification module, the optional type 3 tags are not being loaded and similarly for the created new GSPS these type 3 tags are not added.

Table 133: Presentation State Relationship Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Referenced Series Sequence	0008,1115	SQ	Any	ALWAYS	AUTO	
>Referenced Image Sequence	0008,1140	SQ	Any	ALWAYS	AUTO	
>>Referenced SOP Class UID	0008,1150	UI	Any	ALWAYS	AUTO	
>>Referenced SOP Instance UID	0008,1155	UI	Any	ALWAYS	AUTO	
>>Referenced Frame Number	0008,1160	IS	Any	ALWAYS	AUTO	
>>Referenced Segment Number	0062,000B	US	Any	ALWAYS	AUTO	Not Supported
>Series Instance UID	0020,000E	UI	Any	ALWAYS	AUTO	

Table 134: Overlay Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	60xx,0010	US	Any	ALWAYS	COPY	
Overlay Columns	60xx,0011	US	Any	ALWAYS	COPY	
Overlay Type	60xx,0040	CS	G, R	ALWAYS	COPY	
Overlay Origin	60xx,0050	SS	Any	ALWAYS	COPY	
Overlay Bits Allocated	60xx,0100	US	1	ALWAYS	COPY	
Overlay Bit Position	60xx,0102	US	0	ALWAYS	COPY	
Overlay Data	60xx,3000	OW /OB	Any	ALWAYS	COPY	

For the Overlay Plane module, the optional type 3 tags are not being load and similarly for the created new GSPS these type 3 tags are not added.

Table 135: Overlay Activation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Activation Layer	60xx,1001	CS	Any	VNAP	AUTO	

Table 136: Displayed Area Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Displayed Area Selection Sequence	0070,005A	SQ	Any	ALWAYS	AUTO	
>Displayed Area Top Left Hand Corner	0070,0052	SL	Any	ALWAYS	AUTO	
>Displayed Area Bottom Right Hand Corner	0070,0053	SL	Any	ALWAYS	AUTO	
>Presentation Size Mode	0070,0100	CS	SCALE_TO_FIT, TRUE SIZE, MAGNIFY	ALWAYS	AUTO	Support only SCALE_TO_FIT
>Presentation Pixel Spacing	0070,0101	DS	Any	ANAP	AUTO	
>Presentation Pixel Aspect Ratio	0070,0102	IS	"1/1"	ANAP	AUTO	
>Presentation Pixel Magnification Ratio	0070,0103	FL	Any	ANAP	AUTO	Not Supported
>Referenced Image Sequence	0008,1140	SQ	Any	ANAP	AUTO	
>>Referenced SOP Class UID	0008,1150	UI	Any	ALWAYS	AUTO	
>>Referenced SOP Instance UID	0008,1155	UI	Any	ALWAYS	AUTO	
>>Referenced Frame Number	0008,1160	IS	Any	ANAP	AUTO	
>>Referenced Segment Number	0062,000B	US	Any	ANAP	AUTO	Not Supported

The Display Area module is supported only for the GSPS Creation. The Loading from third party is NOT Supported.

Table 137: Graphic Annotation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Graphic Annotation Sequence	0070,0001	SQ	Any	ALWAYS	AUTO	Implemented partial support for loading and writing.
>Graphic Layer	0070,0002	CS	Any	ALWAYS	AUTO	

>Referenced Image Sequence	0008,1140	SQ	Any	ALWAYS	AUTO	implemented support for loading and writing
>>Referenced SOP Class UID	0008,1150	UI	Any	ANAP	AUTO	
>>Referenced SOP Instance UID	0008,1155	UI	Any	ANAP	AUTO	
>>Referenced Frame Number	0008,1160	IS	Any	ANAP	AUTO	
>>Referenced Segment Number	0062,000B	US	Any	ANAP	AUTO	Not Supported
>Text Object Sequence	0070,0008	SQ	Any	ANAP	AUTO	
>>Bounding Box Annotation Units	0070,0003	CS	PIXEL	ANAP	AUTO	DISPLAY mode is Not Supported for Creation. The Creation of GSPS is always in Pixel mode. The Display mode is supported only for Loading a GSPS from an importation.
>>Anchor Point Annotation Units	0070,0004	CS	PIXEL, DISPLAY	ALWAYS	AUTO	DISPLAY mode is Not Supported for Creation. The Creation of GSPS is always in Pixel mode. The Display mode is supported only for Loading a GSPS from an importation.
>>Unformatted Text Value	0070,0006	ST	Any	ALWAYS	AUTO	
>>Bounding Box Top Left Hand Corner	0070,0010	FL	Any	ANAP	AUTO	
>>Bounding Box Bottom Right Hand Corner	0070,0011	FL	Any	ANAP	AUTO	
>>Bounding Box Text Horizontal Justification	0070,0012	CS	CENTER, LEFT, RIGHT	ANAP	AUTO	
>>Anchor Point	0070,0014	FL	Any	ANAP	AUTO	
>>Anchor Point Visibility	0070,0015	CS	N, Y	ANAP	AUTO	
>Graphic Object Sequence	0070,0009	SQ	Any	ANAP	AUTO	
>>Graphic Annotation Units	0070,0005	CS	PIXEL	ALWAYS	AUTO	DISPLAY mode is Not Supported for Creation. The Creation of GSPS is always in Pixel mode. The Display mode is supported only for Loading a GSPS from an importation.
>>Graphic Dimensions	0070,0020	US	2	ALWAYS	AUTO	Supported and value "2" always for loading; Supported and value "2" always for writing.
>>Number of Graphic Points	0070,0021	US	Any	ALWAYS	AUTO	
>>Graphic Data	0070,0022	FL	Any	ALWAYS	AUTO	
>>Graphic Type	0070,0023	CS	CIRCLE, ELLIPSE, POINT, POLYLINE, INTERPOLATED	ALWAYS	AUTO	INTERPOLATED mode is NOT Supported for the Creation of GSPS. For Loading imported GSPS We draw line between points. Note: Sub-pixel coordinates are truncated to integer
>>Graphic Filled	0070,0024	CS	N, Y	ANAP	AUTO	

Table 138: Spatial Transformation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Horizontal Flip	0070,0041	CS	N, Y	ALWAYS	AUTO	
Image Rotation	0070,0042	US	0, 90, 180, 270	ALWAYS	AUTO	

Table 139: Graphic Layer Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Graphic Layer Sequence	0070,0060	SQ	Any	ALWAYS	AUTO	
>Graphic Layer	0070,0002	CS	Any	ALWAYS	AUTO	Use case 1: User creates a GSPS on IntelliSpace PACS 4.4.551.0 after loading a GSPS. In this case, the layers specified in the original GSPS will be copied over to the new GSPS. So, the value can be anything. In addition to the layers present in source, IntelliSpace PACS 4.4.551.0 may add "INTELLISPACEL1" for additional Annotations and/or "INTELLISPACEOVERLAYS" layers for additional Overlays Use case 2: The user creates a new GSPS (without loading any GSPS) "INTELLISPACEL1" – ONLY for annotations that were created on IntelliSpace PACS 4.4.551.0 . "INTELLISPACEOVERLAYS" – for Overlays created ONLY when creating a new GSPS
>Graphic Layer Order	0070,0062	IS	Any	ALWAYS	AUTO	
>Graphic Layer Recommended Display Grayscale Value	0070,0066	US	Any	ANAP	AUTO	
>Graphic Layer Description	0070,0068	LO	Any	ANAP	AUTO	
>Graphic Layer Recommended Display CIELab Value	0070,0401	US	Any	ANAP	AUTO	Not Supported

Table 140: Modality LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rescale Intercept	0028,1052	DS	Any	ANAP	COPY	
Rescale Slope	0028,1053	DS	Any	ANAP	COPY	
Rescale Type	0028,1054	LO	HU, US	ANAP	COPY	"OD" type is Not been Supported
Modality LUT Sequence	0028,3000	SQ	Any	ANAP	COPY	
>LUT Descriptor	0028,3002	US/SS	Any	ALWAYS	COPY	
>LUT Explanation	0028,3003	LO	Any	ANAP	COPY	
>Modality LUT Type	0028,3004	LO	Any	ALWAYS	COPY	
>LUT Data	0028,3006	US/OW	Any	ALWAYS	COPY	

Table 141: Softcopy VOI LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Softcopy VOI LUT Sequence	0028,3110	SQ	Any	ALWAYS	AUTO	
>Referenced Image Sequence	0008,1140	SQ	Any	ANAP	AUTO	
>>Referenced SOP Class UID	0008,1150	UI	Any	ANAP	AUTO	
>>Referenced SOP Instance UID	0008,1155	UI	Any	ANAP	AUTO	
>> Referenced Frame Number	0008,1160	IS	Any	ANAP	AUTO	
>> Referenced Segment Number	0062,000B	US	Any	ANAP	AUTO	Not Supported
>Window Center	0028,1050	DS	Any	ANAP	AUTO	

>Window Width	0028,1051	DS	Any	ANAP	AUTO	
>Window Center & Width Explanation	0028,1055	LO	Any	ANAP	AUTO	Not Supported
>VOI LUT Function	0028,1056	CS	LINEAR, SIGMOID	ANAP	AUTO	
>VOI LUT Sequence	0028,3010	SQ	Any	ANAP	AUTO	
>>LUT Data	0028,3006	US/OW	Any	ANAP	AUTO	
>>LUT Descriptor	0028,3002	US/SS	Any	ANAP	AUTO	
>>LUT Explanation	0028,3003	LO	Any	ANAP	AUTO	

Table 142: Softcopy Presentation LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Presentation LUT Sequence	2050,0010	SQ	Any	ANAP	AUTO	
>LUT Descriptor	0028,3002	US/SS	Any	ANAP	AUTO	
>LUT Explanation	0028,3003	LO	Any	ANAP	AUTO	
>LUT Data	0028,3006	US/OW	Any	ANAP	AUTO	
Presentation LUT Shape	2050,0020	CS	Any	ANAP	AUTO	

Table 143: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS	ISO_IR 100	ANAP	AUTO	
SOP Class UID	0008,0016	UI	Any	ANAP	AUTO	
SOP Instance UID	0008,0018	UI	Any	ANAP	AUTO	
Instance Number	0020,0013	IS	Any	ANAP	AUTO	

8.1.1.3. Encapsulated PDF Storage SOP Class

The Encapsulated PDF Storage is being used to export the IntelliSpace PACS 4.4.551.0 Radiology Reports through the DICOM Media exchange. Enclosed are the supported Module and their tags.

Table 144: Encapsulated PDF Storage SOP Class - Supported Modules

Information Entity	Module	Presence Of Module
Patient	Patient	ALWAYS
Study	General Study	ALWAYS
Series	Encapsulated Document Series	ALWAYS
Equipment	General Equipment	ALWAYS
	SC Equipment	ALWAYS
Encapsulated Document	Encapsulated Document	ALWAYS
	SOP Common	ALWAYS

Note: IntelliSpace PACS 4.4.551.0 supports only the Mandatory module with the tags that are of type: 1, 1C, 2, 2C. The optional type 3 tags are not being created.

Table 145: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN	Any	VNAP	COPY	

Patient ID	0010,0020	LO	Any	VNAP	COPY	
Patient's Birth Date	0010,0030	DA	Any	VNAP	COPY	
Patient's Sex	0010,0040	CS	Any	VNAP	COPY	
Patient Species Description	0010,2201	LO	Any	N/A	N/A	IntelliSpace PACS 4.4.551.0 does not support animal species
Patient Species Code Sequence	0010,2202	SQ	Any	N/A	N/A	IntelliSpace PACS 4.4.551.0 does not support animal species
Patient Breed Description	0010,2292	LO	Any	N/A	N/A	IntelliSpace PACS 4.4.551.0 does not support animal species
Patient Breed Code Sequence	0010,2293	SQ	Any	N/A	N/A	IntelliSpace PACS 4.4.551.0 does not support animal species
Responsible Person	0010,2297	PN	Any	N/A	N/A	IntelliSpace PACS 4.4.551.0 does not support animal species
Responsible Person Role	0010,2298	CS	Any	N/A	N/A	IntelliSpace PACS 4.4.551.0 does not support animal species
Responsible Organization	0010,2299	LO	Any	N/A	N/A	IntelliSpace PACS 4.4.551.0 does not support animal species

Table 146: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA	Any	VNAP	COPY	
Study Time	0008,0030	TM	Any	VNAP	COPY	
Accession Number	0008,0050	SH	Any	VNAP	COPY	
Referring Physician's Name	0008,0090	PN	Any	VNAP	COPY	
Study Description	0008,1030	LO	Any	VNAP	COPY	
Study Instance UID	0020,000D	UI	Any	ALWAYS	COPY	
Study ID	0020,0010	SH	Any	VNAP	COPY	

Table 147:: Encapsulated Document Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA	Any	ALWAYS	AUTO	
Series Time	0008,0031	TM	Any	ALWAYS	AUTO	
Modality	0008,0060	CS	Any	VNAP	COPY	
Series Instance UID	0020,000E	UI	Any	ALWAYS	AUTO	
Series Number	0020,0011	IS	Any	ALWAYS	AUTO	

Table 148: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips Medical Systems	VNAP	AUTO	
Pixel Padding Value	0028,0120	US or SS	Any	N/A	N/A	Padding is not required and not supported

Table 149: SC Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Conversion Type	0008,0064	CS	WSD	ALWAYS	AUTO	

Table 150: Encapsulated Document Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Content Date	0008,0023	DA	Any	ALWAYS	AUTO	
Acquisition DateTime	0008,002A	DT	Any	ALWAYS	AUTO	
Content Time	0008,0033	TM	Any	ALWAYS	AUTO	
Instance Number	0020,0013	IS	Any	ALWAYS	AUTO	
Burned In Annotation	0028,0301	CS	NO	ALWAYS	AUTO	
Concept Name Code Sequence	0040,A043	SQ	Null string – zero length			Codes for document title is not being used
HL7 Instance Identifier	0040,E001	ST	Any			Not applicable for PDF documents
Document Title	0042,0010	ST	Any	ALWAYS	AUTO	
Encapsulated Document	0042,0011	OB	Any	ALWAYS	AUTO	
MIME Type of Encapsulated Document	0042,0012	LO	Application/pdf	ALWAYS	AUTO	
Source Instance Sequence	0042,0013	SQ	Any	N/A	N/A	Not Supported - The instance document is not derived from other instances
List of MIME Types	0042,0014	LO	Any	N/A	N/A	Not Applicable – No additional encapsulated documents in the PDF document

Table 151: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS	ISO_IR 100	ALWAYS	AUTO	
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.104.1	ALWAYS	AUTO	
SOP Instance UID	0008,0018	UI	Any	ALWAYS	AUTO	

8.1.2. Usage of Attributes from Received IOD's

8.1.2.1. IntelliSpace PACS 4.4.551.0 Viewer

The IntelliSpace PACS 4.4.551.0 viewer can display images for the image SOP Classes as defined by the column 'Display' in Table 1.

8.1.2.1.1. Limitation for Softcopy Presentation State Storage SOP Class

Presentation States are translated and displayed on the IntelliSpace PACS 4.4.551.0 Viewer with some limitations as described in this section.

Explanation of the values used in the column "Implemented for Viewing" of table below:

Yes	All Type 1/1C and Type 2/2C tags are supported.
No	This feature is not provided and/or the required information is not available.
Partial	Some tags are supported.

Table 152: IOD of Used Softcopy Presentation State Storage SOP Class – Support for Loading

Module	Implemented for Viewing
Patient Module	yes
Clinical Trial Subject Module	no
General Study	yes
Patient Study Module	no
Clinical Trail Study Module	no
General Series Module	yes
Clinical Trail Series Module	no
Presentation Series Module	yes
General Equipment Module	yes
Presentation State Identification Module	yes
Presentation State Relationship Module	partial
Presentation State Shutter Module	no
Presentation State Mask Module	no
Mask Module	no
Display Shutter Module	partial
Bitmap Display Module	no
Overlay Plane Module	yes
Overlay Activation Module	yes
Displayed Area Module	no
Graphic Annotation Module	partial
Spatial Transformation Module	yes
Graphic Layer Module	yes
Modality LUT Module	partial
Softcopy VOI LUT Module	partial
Softcopy Presentation LUT Module	partial
SOP Common Module	partial

Note: The supported modules and their tags for the loaded GSPS are described together with the Supported GSPS Created. See details in the section 8.1.1. Whenever there is a difference in the support of a module or a tag in the module for GSPS Loading and Creation, the differences are described in the section 8.1.1.2.

8.1.3. Attribute Mapping

Not applicable.

8.1.4. Coerced/Modified fields

Not applicable.

8.2. Data Dictionary of Private Attributes

The following are the IntelliSpace PACS 4.4.551.0 private attributes:

Table 153: Data Dictionary Of Private Attributes

Tag	Attribute Name	VR	VM	Attribute Description	Location
(0073, 0010)	Philips Private Creator	ST	1	A private tag placeholder : "STENTOR"	Study level of a study's composite
(0073, 1001)	Stentor Sending Hostname Element	ST	1	Hostname used for sending	Study level of a study's composite
(0073, 1002)	Stentor Remote IP-Address Element	ST	1	Stores the remote IP-address of where the study came from	Study level of a study's composite
(0073, 1003)	Stentor Remote AETitle Element	ST	1	Stores the remote AE-Title of where the study came from	Study level of a study's composite
(0073, 1004)	Stentor Local AETitle Element	ST	1	Name/Value of local AE-Title	Study level of a study's composite
(0073, 1005)	IntelliSpace PS Key Image Flag	ST	1	Stores in IntelliSpace Presentation State to indicate whether the given image is a key image	Instance level
(0073, 1006)	IntelliSpace PS Number of Length Measurements	US	1	Store in presentation state the number of length measurements that have been defined by the user	Instance level
(0073, 1007)	Series Clone ID	SS	1	Present if the series represents a clone. It stores the ID of the clone.	Instance level
(0073, 1008)	Series Clone from Window Number	SS	1	Present if the series represents a clone. It stores the window number from which this series was cloned.	Instance level
(0073, 1009)	Number of Clones of a series	SS	1	Stores the number of clones of a series.	Instance level
(0073, 101A)	Message Response Description	LT	1	Stores a description about the response.	Study level
(0073, 101B)	Study Date Update	LT	1	Stores that the study date is updated	Study level
(0073, 101C)	Study Time Update	LT	1	Stores that the study time is updated.	Study level
(0073, 101D)	IntelliSpace PS Version	LT	1	Stores the IntelliSpace private presentation state version.	Instance level
(0073, 101E)	Embedded IntelliSpace PS	UT	1	The IntelliSpace private Presentation State data - Serialized IntelliSpacePS xml	RAWDATA Extended SOP Class for exporting IntelliSpace private Presentation State
(0073, 101F)	IntelliSpace Presentation Type	UT	1	Protocol Name "Technologist"= PSDescriptor::Technologist "Radiologist"= PSDescriptor::Radiologist "PreRead"= PSDescriptor::PreRead "User"= PSDescriptor::User "Conference"= PSDescriptor::Conference "ReferenceCPS"= PSDescriptor::ReferenceCPS	RAWDATA Extended SOP Class for exporting IntelliSpace private Presentation State
(0073, 1020)	IntelliSpace PS Modifier Name	LT	1	Stores the name of the modifier of the PS	Series level
(0073, 1021)	IntelliSpace PS Modification	LT	1	Stored the date when PS is modified	Series level

Tag	Attribute Name	VR	VM	Attribute Description	Location
	Date				
(0073, 1022)	IntelliSpace PS Modification Time	LT	1	Stored the time when PS is modified	Series level
(0073, 1023)	Current Image Frame	US	1	Stores the currently displayed frame for multi-frame image	Series level
(0073, 1024)	UTC Offset	SS	1	Stores the UTC offset	Study level
(0073, 1025)	Exam Body Part	LO	1	Stores the exam body part	Study level
(0073, 1026)	Exam Modality	LO	1	Stores the exam modality	Study level
(0073, 1027)	Exam Code	LO	1	Stores the exam code	Study level
(0073, 102C)	Alternative Patient ID	LO	1	Stores alternative patient ID sequence	Study level
(0073, 102D)	Study Complete Flag	LO	1	Stores the study complete flag	Study level
(0073, 102E)	Filler Order ID	LO	1	Stores the Filler Order ID	Study level
(0073, 102F)	XDS Study ID	LO	1	Stores the XDS study ID	Study level
(0073, 1030)	IntelliSpace PS Version	ST	1	stores the version of the IntelliSpace private presentation state data in (0073,101E)	Used for GSPS that contains the IntelliSpace private PS
(0073, 1031)	IntelliSpace PS Collection Window Information	SQ	1	Stores the collection window information into presentation state	Study level
(0073, 1032)	Collection Window Type	ST	1	Stores the type if the collection window	Study level
(0073, 1033)	Collection Data	SQ	1	Stores the collection specific data within the collection sequence	Study level
(0073, 2000)	IntelliSpace PS Annotation Graphics Type	ST	1	Stores in presentation state the kind of annotation that is defined by the given graphic objects	Instance level
(0073, 2001)	IntelliSpace PS Annotation Font	ST	1	Stores in presentation state the font used for the annotation	Instance level
(0073, 2002)	IntelliSpace PS Annotation Line Style	ST	1	Stores in presentation state the line style used for the annotation	Instance level
(0073, 2003)	IntelliSpace PS Annotation Line Size	ST	1	Stores in presentation state the line size used for the annotation	Instance level
(0073, 2004)	IntelliSpace PS Column Pixel Spacing	FL	1	Store in presentation state the column pixel spacing for a manual calibration	Instance level
(0073, 2005)	IntelliSpace PS Row Pixel Spacing	FL	1	Store in presentation state the row pixel spacing for a manual calibration	Instance level
(0073, 2006)	IntelliSpace PS Annotation Modifiable	US	1	Stores in presentation state whether the annotation is modifiable	Instance level
(0073, 2007)	IntelliSpace PS Secondary graphics elements	SQ	1	Stores in presentation state secondary line information, including line style, line size and line color.	Instance level
(0073, 2008)	IntelliSpace PS Annotation Line Color	ST	1	Stores in presentation state the line color used for the annotation	Instance level
(0073, 2009)	IntelliSpace PS Graphics filled	ST	1	Stores in presentation state whether the graphics is filled	Instance level
(0073, 2010)	IntelliSpace PS Graphics Layer	ST	1	Stores in presentation state the graphics layer	Instance level

8.3. Coded Terminology and Templates

Not applicable.

8.4. Grayscale Image consistency

The high resolution display monitor attached to the product can be calibrated according to the Grayscale Standard Display Function (GSDF). The service/Installation Tool is used together with a luminance meter to measure the Characteristic Curve of the display

system and the current ambient light. See the product Service Manual for details on the calibration procedure and supported calibration hardware. The result of the calibration procedure is a Monitor Correction LUT that will be active within the display subsystem after a system reboot.

8.5. Standard Extended/Specialized/Private SOPs

8.5.1. Standard Extended SOP's

The Raw Data Storage SOP Class – UID: 1.2.840.10008.5.1.4.1.1.66 is extended for exporting the IntelliSpace PACS 4.4.551.0 Private Presentation State.

The SOP Class defines the usage of it for embedding the IntelliSpace PACS 4.4.551.0 Presentation State, by the Creator-Version UID tag (0008,9123) with the defined value: 1.3.46.670589.42.100.1

The following set of mandatory DICOM attributes (type 1 and 2) will be populated in this extended DICOM Raw Object:

Table 154: Mandatory DICOM attributes (type 1 and 2)

DICOM Raw Data element	Name	Description
Patient		
0010,0010	Patient's Name	Patient's full name.
0010,0020	Patient ID	Primary hospital identification number or code for the patient.
0010,0030	Patient's Birth Date	Birth date of the patient.
0010,0040	Patient's Sex	Sex of the named patient.
Study		
0008,0020	Study Date	Date the Study started.
0008,0030	Study Time	Time the Study started.
0008,0050	Accession Number	A RIS generated number that identifies the order for the Study.
0008,0090	Referring Physician's Name	Name of the patient's referring physician
0020,000D	Study Instance UID	Unique identifier for the Study.
0020,0010	Study ID	User or equipment generated Study identifier.
Series		
0008,0060	Modality	Defined term for the modality
0020,000E	Series Instance UID	Unique identifier of the Series. Taken from the IntelliSpace PS
0020,0011	Series Number	A number that identifies this Series.
Equipment		
0008,0070	Manufacturer	Manufacturer of the equipment that produced the composite instances.
Raw Data		
0008,0016	SOP Class UID	Uniquely identifies the SOP Class.
0008,0018	SOP Instance UID	Uniquely identifies the SOP Instance.
0008,0023	Content Date	The date the raw data creation was started.
0008,0033	Content Time	The time the raw data creation was started.
0008,9123	Creator-Version UID	Unique identification of the equipment and version of the software that has created the Raw Data information. The UID allows one to avoid attempting to interpret raw data with an unknown format.
0020,0013	Instance Number	A number that identifies this raw data. The value can be unique within a series.
0040,0555	Acquisition Context Sequence	A sequence of Items that describes the conditions present during the acquisition of the data of the SOP Instance. Zero or more items may be included in this sequence.

The following tags will be added to the DICOM Raw Data Object as the *content* of the IntelliSpace PS. The full IntelliSpace PS is present.

Table 155: Raw Data Tags containing the IntelliSpace PS data

Raw Data Tag	Description	IntelliSpace PS source tag	Description
0070,0080	DICOM Content Level	0070,0080	Content Label
0070,0081	DICOM Content Description	0070,0081	Content Description
0070,0082	Presentation Creation Date	0070,0082	Presentation Creation Date
0070,0083	Presentation Creation Time	0008,0013	Instance Creation Time of SOP Instance
0070,0084	Content Creator Name	0008,1070	Operators Name
0073,101E (String)	Embedded IntelliSpace PS	N.A.	Serialized IntelliSpacePS xml
0073,101F (String)	IntelliSpace Presentation type	0018,1030	Protocol Name "Technologist"= PSDescriptor::Technologist "Radiologist"= PSDescriptor::Radiologist "PreRead"= PSDescriptor::PreRead "User"= PSDescriptor::User "Conference"= PSDescriptor::Conference "ReferenceCPS"= PSDescriptor::ReferenceCPS

8.5.2. Standard Specialized SOP's

None.

8.5.3. Private SOP's

IntelliSpace PACS 4.4.551.0 support the DICOM C-STORE SCP to receive this private SOP Classes from Philips Clinical Application Workstation and it also support the C-STORE SCU to export these private SOP Classes to other workstation / archive systems.

Table 156: Private SOP Classes used in IntelliSpace PACS 4.4.551.0

SOP Class Name	SOP Class UID
GE Private eNTEGRA Storage (Xeleris Auto Start/eNTEGRA Protocol Data or NM Genie)	1.2.840.113619.4.27
Philips Private EasyVision 3D Volume Object Storage	1.3.46.670589.5.0.2
Philips Private EasyVision MR Cardio Analysis Storage	1.3.46.670589.5.0.11
Philips Private EasyVision MR Cardio Storage	1.3.46.670589.5.0.8
Philips Private EasyVision Surface Storage	1.3.46.670589.5.0.3
Philips Private EasyVision Volume Storage	1.3.46.670589.5.0.1
Philips Private iE33 3D NEO Presentation State Subpage Storage	1.3.46.670589.2.5.1.1
Philips Private MR Cardio Profile Image Storage	1.3.46.670589.5.0.7
Philips Private MR Series Data Storage	1.3.46.670589.11.0.0.12.2
Philips Private MR Spectrum Storage	1.3.46.670589.11.0.0.12.1
Philips Private Reconstructed X-ray Storage	1.3.46.670589.2.4.1.1
Philips Private ViewForum 3D Volume New Storage	1.3.46.670589.5.0.1.1
Philips Private ViewForum 3D Volume Object New Storage	1.3.46.670589.5.0.2.1
Philips Private ViewForum CT Synthetic Image Storage	1.3.46.670589.5.0.9
Philips Private ViewForum CX Synthetic Image Storage	1.3.46.670589.5.0.12
Philips Private ViewForum MR Cardio Analysis New Storage	1.3.46.670589.5.0.11.1
Philips Private ViewForum MR Cardio New Storage	1.3.46.670589.5.0.8.1
Philips Private ViewForum MR Synthetic Image Storage	1.3.46.670589.5.0.10
Philips Private ViewForum Perfusion Analysis Storage	1.3.46.670589.5.0.14
Philips Private ViewForum Perfusion Storage	1.3.46.670589.5.0.13
Philips Private ViewForum Surface New Storage	1.3.46.670589.5.0.3.1
Philips Private X-Ray Image Storage	1.3.46.670589.2.3.1.1

8.6. Private Transfer Syntaxes

Not applicable.