

DICOM Conformance Statement

IntelliSpace PACS 4.4.526.0



Issued by:

Philips Healthcare

P.O. Box 10.000
5680 DA Best
The Netherlands

Email: dicom@philips.com

Internet: http://www.healthcare.philips.com/main/about/connectivity/dicom_conformance_main.wpd

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1. DICOM Conformance Statement Overview

IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 is supporting.

The Transfer Syntaxes for the exporting on media will be:

- 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 4.4.526.0 (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 4.4.526.0 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 |
|------------------|---------------|----------|---------------|
| 01 | 30-March-2015 | Approved | 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 |
| HIS | Hospital Information System |
| HL7 | Health Level Seven |
| IHE | Integrating the Healthcare Enterprise |
| ILE | Implicit VR Little Endian |
| IOD | Information Object Definition |
| MOD | Magneto-Optical Disk |
| 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 |
| SOAP | Simple Object Access Protocol (SOAP12 for SOAP version 1.2) |
| SOP | Service Object Pair |
| TCP/IP | Transmission Control Protocol/ Internet Protocol |
| UID | Unique Identifier |
| US | Ultrasound |
| USMF | Ultrasound Multi-frame |
| WADO | Web Access to DICOM Objects |
| WLM | Worklist Management |

| Abbreviations / Terms | Explanation |
|-----------------------|--------------------------|
| WS | Web Services |
| XA | X-Ray Angiographic |
| ADT | Admit Discharge Transfer |
| ORU | Observation Result |

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/>

Note that at any point in time the official standard consists of the most recent yearly edition of the base standard (currently 2014) plus all the supplements and correction items that have been approved as Final Text.

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 4.4.526.0 DICOM Server, IntelliSpace PACS 4.4.526.0 Worklist Server, and IntelliSpace PACS 4.4.526.0 Radiology Client Application Entities are all integrated parts of the IntelliSpace PACS 4.4.526.0 product.

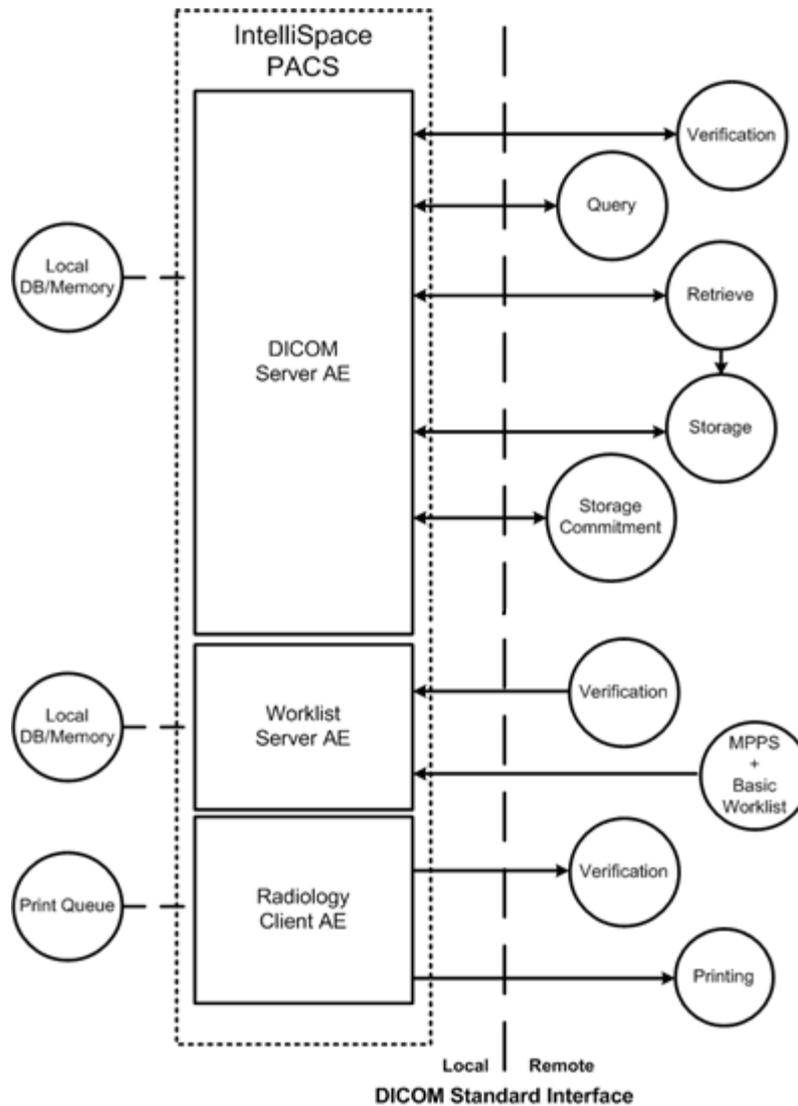


Figure 1: Application Data Flow Diagram

4.1.2. Functional Definition of AE's

4.1.2.1. Functional Definition of IntelliSpace PACS 4.4.526.0 DICOM Radiology Client AE

The IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 DICOM Server AE

The IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 supports multiple healthcare organizations in a single IntelliSpace PACS 4.4.526.0 database. The name of the organization is also the AE Title of that organization. IntelliSpace PACS 4.4.526.0 client applications also have the ability to initiate DICOM associations by the IntelliSpace PACS 4.4.526.0 DICOM Server to remote DICOM devices for Storage and Query/Retrieve services.

4.1.2.3. Functional Definition of IntelliSpace PACS 4.4.526.0 DICOM Worklist Server AE

The IntelliSpace PACS 4.4.526.0 Worklist Server runs as a service and will be automatically started as part of the operating system. Once started, the IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 DICOM Radiology Client AE

| Description | Value |
|-----------------------------|--------------------------|
| Implementation Class UID | 1.3.46.670589.42.1.4.4.5 |
| Implementation Version Name | Philips_ISPACS445 |

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 4.4.526.0 Radiology Client displays the error message |
| | | 2 - application-context-name-not-supported | IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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-provide (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

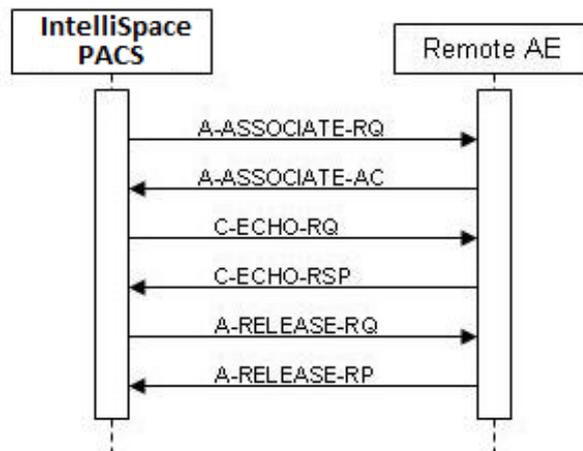


Figure 2: Sequence of C-Echo as SCU

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 4.4.526.0 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.

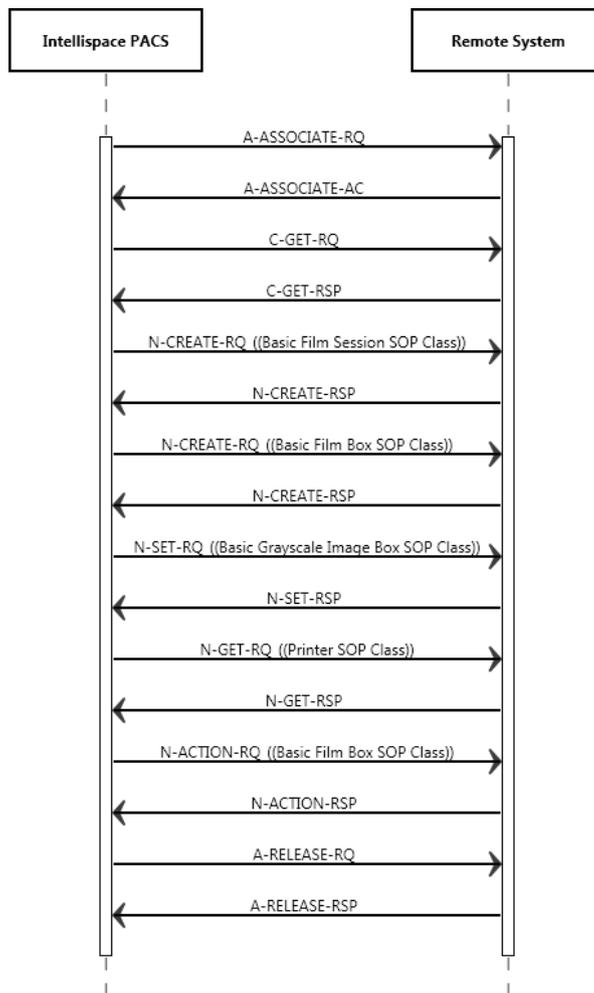


Figure 3: Sequence of Print Management as SCU

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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 Radiology User Interface, Film Box can't be printed |
| | 0110 | Processing Failure | Display error on the IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 | |

The behavior of IntelliSpace PACS 4.4.526.0 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 4.4.526.0 Radiology User Interface, Film Box can't be printed |
| | 0110 | Processing Failure | Display the error on the IntelliSpace PACS 4.4.526.0 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 | |

The behavior of the IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 |

| Service Status | Error Code | Further Meaning | Explanation |
|----------------|------------|---|---|
| Warning | 0101 | Received Optional Unsupported Attributes. | The contents of attribute Printer Status Info (2110,0020) is logged and reported to the IntelliSpace PACS 4.4.526.0 Display. |
| | 0107 | Attribute List Error. | The contents of attribute Printer Status Info (2110,0020) is logged and reported to the IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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) | 1 - no-reason-given | IntelliSpace PACS 4.4.526.0 |

| Result | Source | Reason/Diagnosis | Explanation |
|---|---|--|--|
| | related function) | 2 - protocol-version-not-supported | Radiology Client displays the error message |
| | 3 - DICOM UL service provider (Presentation related function) | 1 - temporary-congestion 2 - local-limit-exceeded | IntelliSpace PACS 4.4.526.0 Radiology Client displays the error message |
| 2 - Rejected-transient | 1 - DICOM UL service-user | 1 - no-Reason-given | IntelliSpace PACS 4.4.526.0 |
| | | 2 - application-context-name-not-supported | Radiology Client displays the error message |
| | | 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 4.4.526.0 |
| | | 2 - protocol-version-not-supported | Radiology Client displays the error message |
| 3 - DICOM UL service provider (Presentation related function) | 1 - temporary-congestion | IntelliSpace PACS 4.4.526.0 | |
| | 2 - local-limit-exceeded | Radiology Client displays the error message | |

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 4.4.526.0 client applications use the iQuery tool of the IntelliSpace PACS 4.4.526.0 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 4.4.526.0 client applications to interact with the IntelliSpace PACS 4.4.526.0 DICOM Server via a proprietary interface. The IntelliSpace PACS 4.4.526.0 DICOM Server's iQuery tool is an interactive end-user application and will generate DICOM transactions based upon end-user initiated activities.

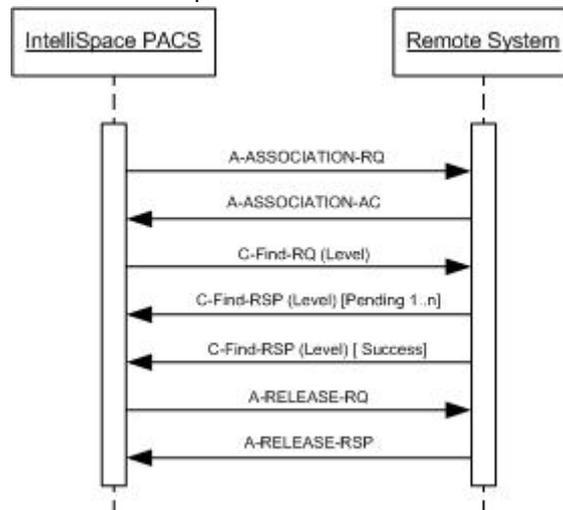


Figure 4: (Real-World) Activity – C-FIND as SCU**4.2.1.4.1.2. Proposed Presentation Contexts**

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 4.4.526.0 Client applications. IntelliSpace PACS 4.4.526.0 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, 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 4.4.526.0 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 4.4.526.0 will negotiate the association only for that specific type of information model. However, IntelliSpace PACS 4.4.526.0 user can also choose the "Unknown" information Model, which in this case IntelliSpace PACS 4.4.526.0 will negotiate for an information model in the following order: Patient Root, Study Root, 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 | Single Value, Universal, Wildcard | For Wildcard see 4.2.1.4.1.4 |
| 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 | Single Value, Universal, Wildcard | For Wildcard see 4.2.1.4.1.4 |
| 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 |

| 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 Client applications. IntelliSpace PACS 4.4.526.0 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, 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:

- Patient Root Information Model
- Study Root Information Model
- 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 | Single Value, Universal, Wildcard | For Wildcard see 4.2.1.4.1.4 |

| | | | | |
|--------------------------------------|-----------|----|--------------------------------------|--|
| 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 |
| | 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 Client applications. IntelliSpace PACS 4.4.526.0 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, 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 | Single Value, Universal, Wildcard | For Wildcard see 4.2.1.4.1.4 |
| 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 | Single Value, Universal, Wildcard | For Wildcard see 4.2.1.4.1.4 |
| 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 |

| Service Status | Error Code | Further Meaning | Behavior |
|----------------|------------|--|---|
| 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 4.4.526.0 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 4.4.526.0 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

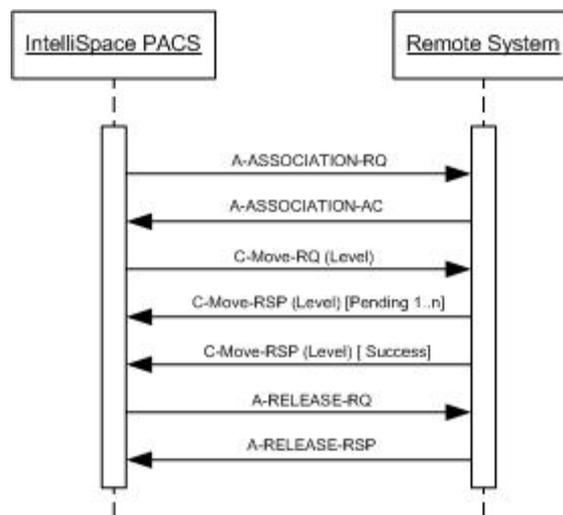


Figure 5: Sequence of C-Move as SCU

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. | 1.2.840.10008.5.1.4.1.2.3.2 | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | SCU | None |

| Presentation Context Table | | | | | |
|--|-----------------------------|---------------------------|---------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| Model - C-MOVE SOP Class (Retired) | | 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 Server and Close the association |

| Service Status | Error Code | Further Meaning | Behavior |
|----------------|------------|--------------------------------|--|
| 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 Server and Close the association |

| Service Status | Error Code | Further Meaning | Behavior |
|----------------|------------|--------------------------------|--|
| 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 Server and Close the association |

| Service Status | Error Code | Further Meaning | Behavior |
|----------------|------------|--------------------------------|--|
| 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 |
| Digital X-Ray Image Storage - For Proc. SOP | 1.2.840.10008.5.1.4.1.1.1.1.1 | 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 |

| SOP Class Name | SOP Class UID | SCU | SCP |
|--|----------------------------------|-----|-----|
| Ultrasound Multi-frame Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.3.1 | Yes | 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 |
| 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 |

| SOP Class Name | SOP Class UID | SCU | SCP |
|---|---------------------------|-----|-----|
| 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 4.4.526.0 DICOM Server application will request associations and accept associations for DICOM Storage and Query/Retrieve. The IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 DICOM Server AE

| Description | Value |
|-----------------------------|--------------------------|
| Implementation Class UID | 1.3.46.670589.42.1.4.4.5 |
| Implementation Version Name | Philips_ISPACS445 |

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. |
| | | 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. | |
| 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

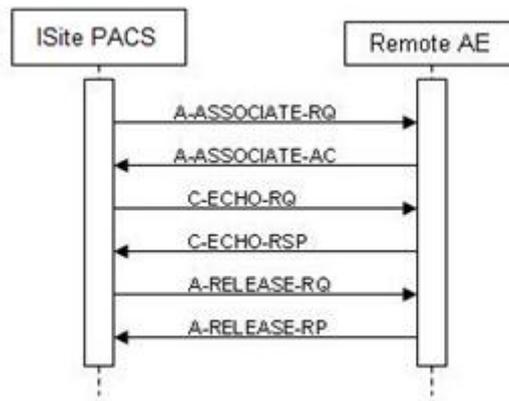


Figure 6: (Real-World) Activity – C-ECHO as SCU

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 4.4.526.0 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 shall be forwarded as such to the forward MPPS node. The MPPS Information model is same as that received from the SCU node.

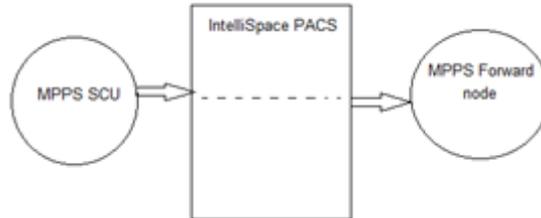


Figure 7 (Real-World) Activity – MPPS as SCU

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 4.4.526.0 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 4.4.526.0 client applications use the iExport tool of the IntelliSpace PACS 4.4.526.0 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 4.4.526.0 client applications to export DICOM Objects through (C-STORE SCU).

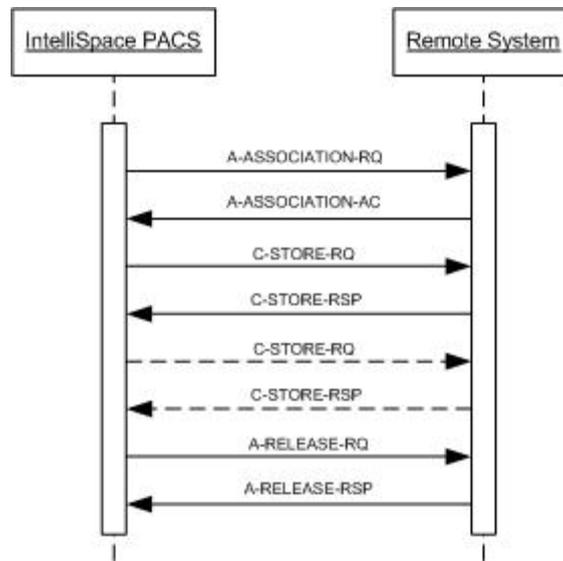


Figure 8: Sequence of C-Store as SCU

4.2.2.3.3.2. Proposed Presentation Contexts

The presentation contexts are defined in next table.

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 | | |

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| | | 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 | | |
| 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 | | |

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| 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 |

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| | | 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 | | |
| 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 | | |
| 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 | | |
| 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 | | |
| 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 | | |

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| | | 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 Document | 1.2.840.10008.5.1.4.1.1.88.59 | 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 | | |
| 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 | | |

| Presentation Context Table | | | | | |
|--|---------------------------|---------------------------|---------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| 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 | | |
| | | 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 | 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 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 1: Network 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 supports synchronous mode and asynchronous mode for storage commitment SCU.

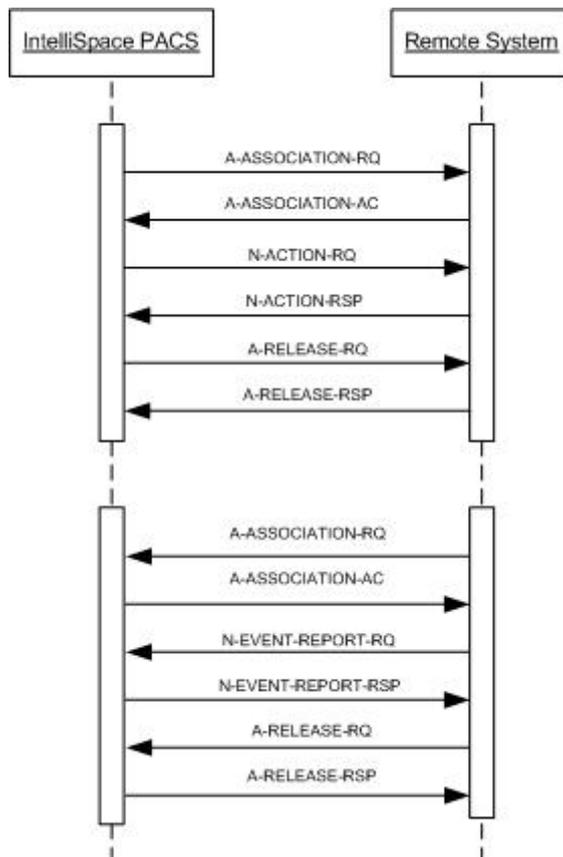


Figure 9: (Real-World) Activity – Asynchronous Storage Commitment as SCU

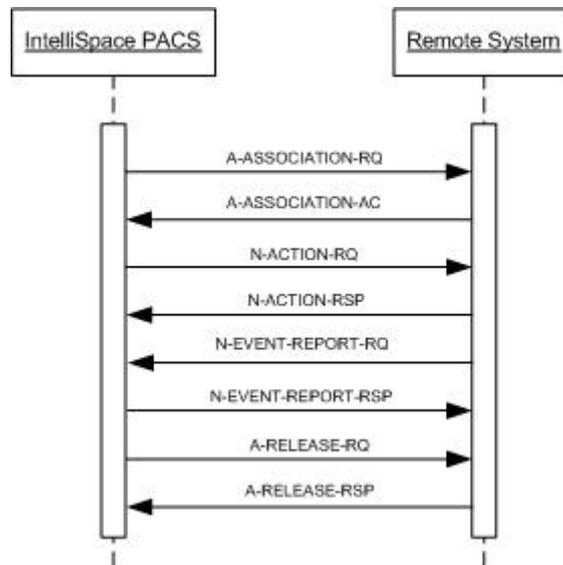


Figure 10: (Real-World) Activity – Synchronous Storage Commitment as SCU

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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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

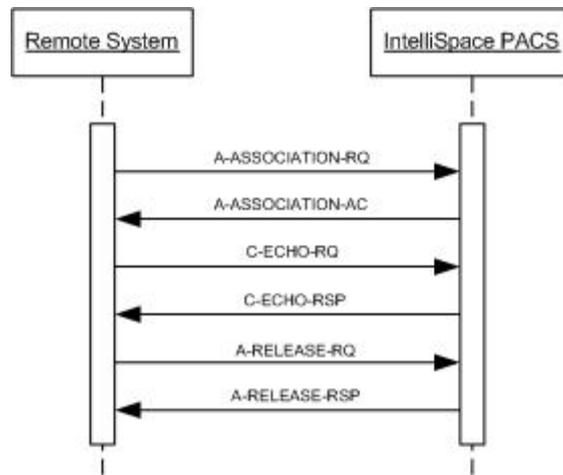


Figure 11: (Real-World) Activity – C-ECHO as SCP

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 4.4.526.0 DICOM Server will accept DICOM Modality Performed Procedure Step association request that are initiated by remote DICOM entities. The IntelliSpace PACS 4.4.526.0 DICOM Server will process the incoming MPPS messages and forward them to configured DICOM clients.

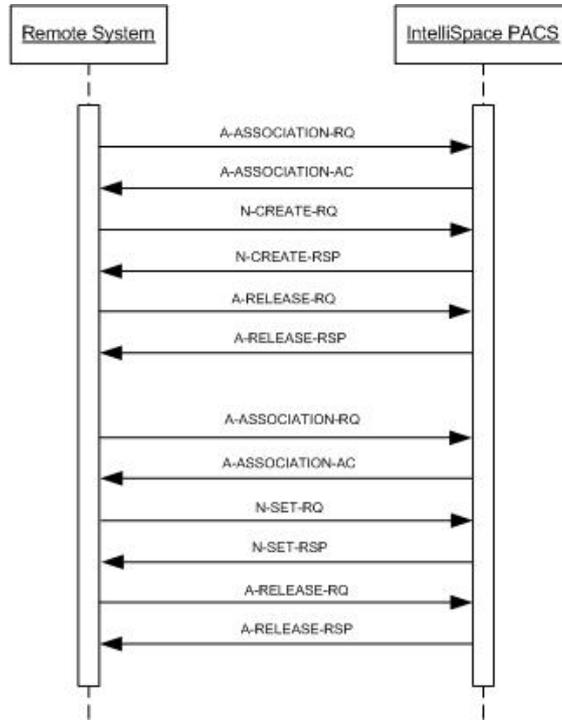


Figure 12: (Real-World) Activity – MPPS as SCP

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 4.4.526.0 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 |

| | |
|-------------|-------------------------------------|
| [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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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

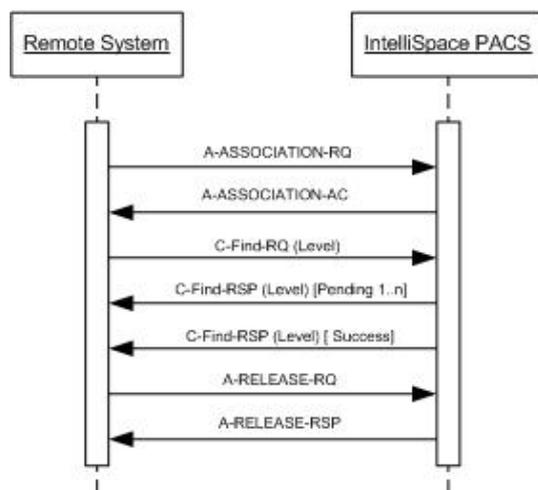


Figure 13: (Real-World) Activity – C-Find as SCP

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 - C-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 | Single Value, Universal, Wildcard | For Wildcard see 4.2.1.4.1.4 |
| 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, | |

| >Scheduled Procedure Step ID | 0040,0009 | SH | Wildcard 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 Info. 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 Info. Model - C-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 | Single Value, Universal, Wildcard | For Wildcard see 4.2.1.4.1.4 |
| 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 - 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.

4.2.2.4.3.5.1. Dataset Specific Conformance for Study Root QR Information Model - C-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, | |

| 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

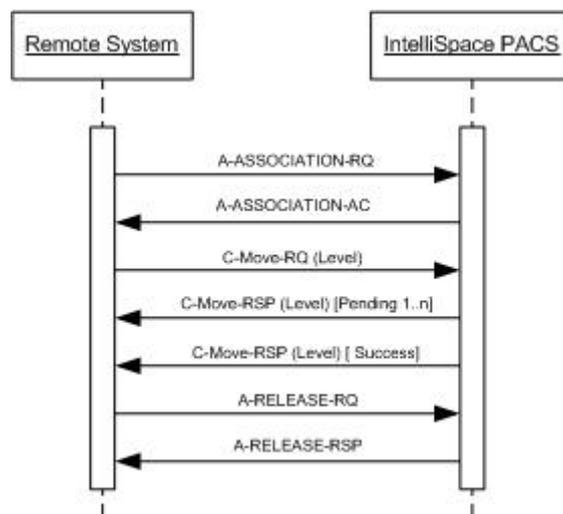


Figure 14: (Real-World) Activity – C-Move as SCP

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 |

| Service Status | Error Code | Further Meaning | Behavior |
|----------------|------------|---|---|
| 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. |

| Service Status | Error Code | Further Meaning | Behavior |
|----------------|------------|---|---|
| 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

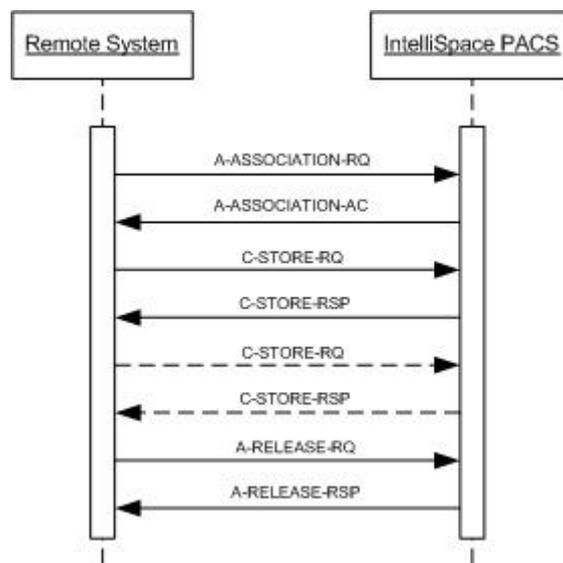


Figure 15: (Real-World) Activity – C-Store as SCP

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 | | |

| Presentation Context Table | | | | | |
|--|--------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| 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 | | |
| | | 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 | | |

| Presentation Context Table | | | | | |
|---|-------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| | | JPEG Baseline (Process 1) | 1.2.840.10008.1.2.4.50 | | |
| | | JPEG Extended (Process 2 & 4) | 1.2.840.10008.1.2.4.51 | | |
| | | JPEG Lossless, Non-Hierarchical (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 | 1.2.840.10008.5.1.4.1.1.1.3 | 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 | 1.2.840.10008.5.1.4.1.1.1.3.1 | 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 | | |
| 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 | | |

| Presentation Context Table | | | | | |
|---|-------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| | | 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 | | |
| | | RLE Lossless | 1.2.840.10008.1.2.5 | | |
| Digital X-Ray Image Storage - For Proc. SOP | 1.2.840.10008.5.1.4.1.1.1.1.1 | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | 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 | | |

| Presentation Context Table | | | | | |
|---|-------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| Encapsulated CDA Storage | 1.2.840.10008.5.1.4.1.1.104.2 | JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.2.840.10008.1.2.4.70 | SCP | None |
| | | RLE Lossless | 1.2.840.10008.1.2.5 | | |
| | | Explicit VR 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 Little Endian | 1.2.840.10008.1.2 | SCP | None |
| | | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | | |
| | | 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 | | |
| Hemodynamic Waveform Storage SOP Class | 1.2.840.10008.5.1.4.1.1.9.2.1 | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | SCP | None |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | | |
| | | Implicit VR Little Endian | 1.2.840.10008.1.2 | | |
| MR Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.4 | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | 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 | | |

| Presentation Context Table | | | | | |
|---|-----------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| Enhanced MR Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.4.1 | JPEG Extended (Process 2 & 4) | 1.2.840.10008.1.2.4.51 | SCP | None |
| | | 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 | | |
| | | 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 | | |
| MR Spectroscopy Storage SOP Class | 1.2.840.10008.5.1.4.1.1.4.2 | 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 | | |
| | | 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 | | |
| | | 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 | | | | |
| Multi-frame Grayscale Byte SC Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7.2 | 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 | | |
| | | JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.2.840.10008.1.2.4.70 | | |
| | | RLE Lossless | 1.2.840.10008.1.2.5 | | |
| | | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | | |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | | |
| | | Implicit VR Little Endian | 1.2.840.10008.1.2 | | |
| | | JPEG 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 | | | | |
| Multi-frame Grayscale Word SC Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7.3 | JPEG Lossless, Non-Hierarchical (Process 14) | 1.2.840.10008.1.2.4.57 | SCP | None |
| | | JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.2.840.10008.1.2.4.70 | | |
| | | RLE Lossless | 1.2.840.10008.1.2.5 | | |
| | | Explicit VR 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 | | |
| | | 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 | | |
| 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 | | |
| 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 | | |
| | | 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 | | |

| Presentation Context Table | | | | | |
|---|----------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| Nuclear Medicine Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.20 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR 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 | | |
| Ophthalmic Photography 16 Bit Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.77.1.5.2 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR 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 | | |
| Ophthalmic Photography 8 Bit Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.77.1.5.1 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR 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 | | |
| Positron Emission Tomography Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.128 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR 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 | | | | |

| 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 | | |
| 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 | | |
| | | 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 | | |

| 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 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 | | |
| | | 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 | | |

| Presentation Context Table | | | | | |
|--|----------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| Standalone PET Curve Storage SOP Class (Retired) | 1.2.840.10008.5.1.4.1.1.129 | Implicit VR Little Endian | 1.2.840.10008.1.2 | 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 | | |
| 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 Class | 1.2.840.10008.5.1.4.1.1.6.1 | 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 | | |
| 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 | | |

| Presentation Context Table | | | | | |
|---|--------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| Ultrasound Multi-frame Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.3.1 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR 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 | | |
| VL Endoscopic Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.77.1.1 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | | |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | | |
| VL Microscopic Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.77.1.2 | Implicit VR Little Endian | 1.2.840.10008.1.2 | SCP | None |
| | | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | | |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | | |
| VL Photographic Image Storage | 1.2.840.10008.5.1.4.1.1.77.1.4 | Implicit VR Little Endian | 1.2.840.10008.1.2 | 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 | | |
| VL Slide-Coordinates Microscopic Image Storage | 1.2.840.10008.5.1.4.1.1.77.1.3 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR Big Endian | 1.2.840.10008.1.2.2 | | |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | | |
| X-Ray Angiographic Bi-Plane Image Storage SOP Class (Retired) | 1.2.840.10008.5.1.4.1.1.12.3 | Implicit VR Little Endian | 1.2.840.10008.1.2 | 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 | | |

| Presentation Context Table | | | | | |
|---|------------------------------|---|------------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| X-Ray Angiographic Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.12.1 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR 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 | | |
| X-Ray Radiofluoroscopic Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.12.2 | RLE Lossless | 1.2.840.10008.1.2.5 | SCP | None |
| | | Explicit VR 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 | | |
| | | RLE Lossless | 1.2.840.10008.1.2.5 | | |

IntelliSpace PACS 4.4.526.0 shall support additional SOP classes through a mechanism that does not require a PACS client or server upgrade. This will make the support for SOP classes configurable, dynamic, that is, additional SOP classes should easily be added without the need to go through the process of upgrading the PACS system.

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 | | |
| 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 | | |

| Presentation Context Table | | | | | |
|--|---------------------------|---------------------------|---------------------|------|-----------|
| Abstract Syntax | | Transfer Syntax | | Role | Ext. Neg. |
| Name | UID | Name List | UID List | | |
| 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 Storage | 1.3.46.670589.11.0.0.12.1 | 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 | | |
| 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 | 1.3.46.670589.5.0.11 | 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 | | |
| Cardio Analysis Storage | | 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 | | |
| 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 4.4.526.0 DICOM server local database; from there they can be loaded (and viewed) via IntelliSpace PACS 4.4.526.0 Radiology Viewer or IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 supports synchronous and asynchronous mode for storage commitment SCP.

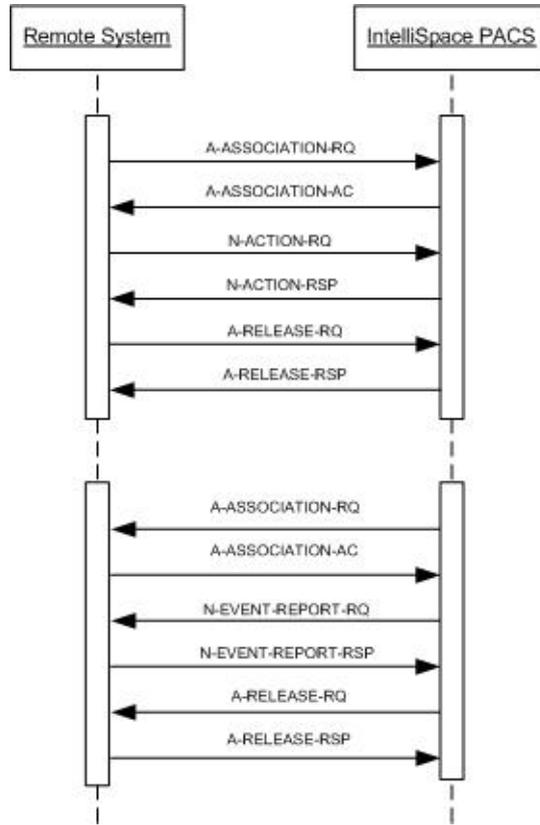


Figure 16: (Real-World) Activity – Asynchronous Storage Commitment as SCP

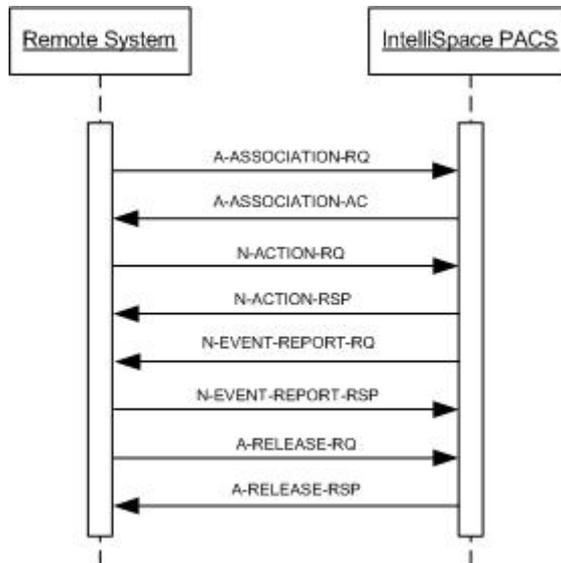


Figure 17: (Real-World) Activity – Synchronous Storage Commitment as SCP

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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 server issues an N-EVENT-REPORT-RQ Commitment Push (a notification request). Once N-EVENT-REPORT-RQ is sent to the SCP IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 BSN support can be enabled via the configuration. By default this is not enabled.

Additionally, per DICOM destination IntelliSpace PACS 4.4.526.0 can be configured if the destination shall 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 Worklist Server supports the acceptance of DICOM associations for the DICOM Modality Worklist Service and the DICOM Verification Service. The IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 4.4.526.0 DICOM Worklist Server AE

| Description | Value |
|-----------------------------|--------------------------|
| Implementation Class UID | 1.3.46.670589.42.1.4.4.5 |
| Implementation Version Name | Philips_ISPACS445 |

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

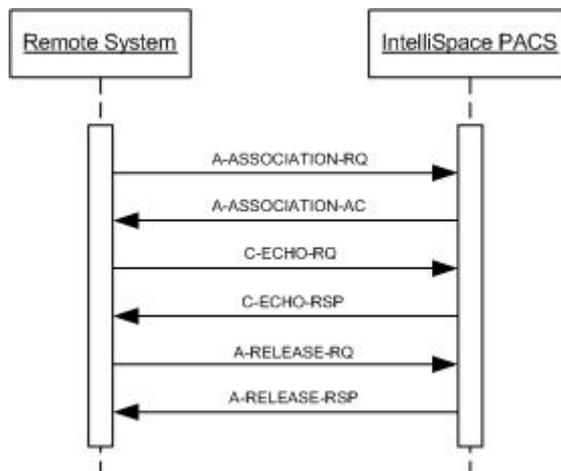


Figure 18: (Real-World) Activity – C-ECHO as SCP

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 4.4.526.0 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.

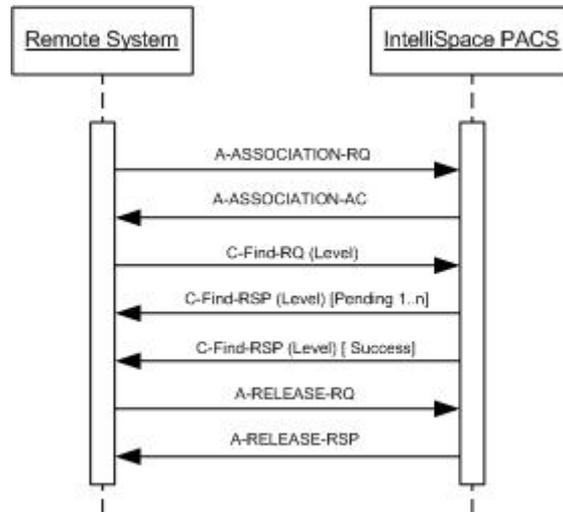


Figure 19: (Real-World World) Activity – Modality Worklist Information C-Find as SCP

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 |
| 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 shall only be retrieved with Sequence Matching. The Scheduled Procedure Step Sequence shall contain 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 | | Y | Y |

| Attribute Name | Tag | VR | Remark/ Comment | Matching Key Supported | Return Key Supported |
|---|-----------|----|--|------------------------|----------------------|
| | | | 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. | | |
| > 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 4.4.526.0 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 4.4.526.0 configuration.

Table 119: AE Title configuration table

| Application Entity | Role | Default AE Title | Default TCP/IP Port |
|---|--------------------|------------------|---------------------|
| IntelliSpace PACS 4.4.526.0 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 4.4.526.0 DICOM Radiology Client AE | Print SCU | STENTOR_SCU | N/A |

Notes:

- [1] The IntelliSpace PACS 4.4.526.0 supports multiple healthcare organizations in a single IntelliSpace PACS 4.4.526.0 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

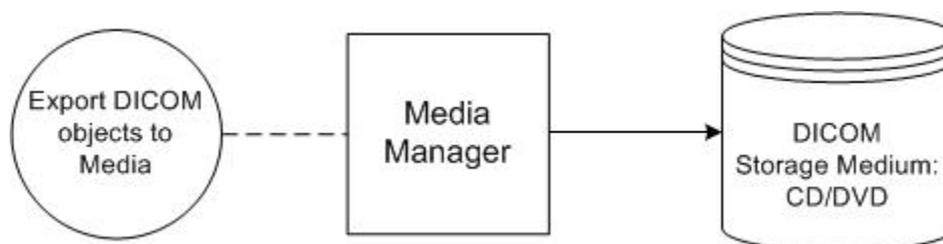


Figure 20: Media Application Data Flow Diagram

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 4.4.526.0 Media Manager Application is part of the Media Manager tool from the IntelliSpace PACS 4.4.526.0 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 | Philips_ISPACS445 |

5.2. Exporting DICOM SOP Classes on Media

IntelliSpace PACS 4.4.526.0 support the export of all the transferred SOP Classes received on the Network or Created by IntelliSpace PACS 4.4.526.0 .

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 |
| Unicode in UTF-8 | ISO_IR 192 | - | - | - | - |

7. Security

7.1. Security Profiles

IntelliSpace PACS 4.4.526.0 does not support any specific DICOM Security Profile. It is assumed that IntelliSpace PACS 4.4.526.0 is used within a secured environment that uses Firewall, Router Protection, etc.

7.2. Association Level Security

Not Applicable

7.3. Application Level Security

Not Applicable

8. Annexes of application "IntelliSpace PACS 4.4.526.0 "

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 shall be specified.

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

| | |
|-------------|--|
| ALWAYS | The module is always present |
| CONDITIONAL | The module is used under specified condition |
| 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 |
| ANAPCV | The attribute is present under specified condition – if present then its Value is Not Always Present (attribute sent zero length if condition applies and no value is present) |
| ANAPEV | The attribute is present under specified condition – if present then it will not have any value |

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

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

8.1.1.1. List of created SOP Classes

Table 124: 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 4.4.526.0 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 125: 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 126: 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 127: 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 | |

For General Study 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 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 | ANAPCV | 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 | ANAPCV | 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 129: Presentation Series Module

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

Table 130: 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 131: 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 132: 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 133: 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 134: Overlay Activation Module

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

Table 135: 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 136: 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 137: 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 138: 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 4.4.526.0 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 4.4.526.0 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 4.4.526.0 . "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 139: 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 140: 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 141: 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 | ANAPEV | AUTO | |
| >LUT Data | 0028,3006 | US/OW | Any | ANAP | AUTO | |
| Presentation LUT Shape | 2050,0020 | CS | Any | ANAP | AUTO | |

Table 142: 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 | |

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

8.1.1.3. Encapsulated PDF Storage SOP Class

The Encapsulated PDF Storage is being used to export the IntelliSpace PACS 4.4.526.0 Radiology Reports through the DICOM Media exchange. Enclosed are the supported Module and their tags.

Table 143: 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 4.4.526.0 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 144: 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 4.4.526.0 does not support animal species |
| Patient Species Code Sequence | 0010,2202 | SQ | Any | N/A | N/A | IntelliSpace PACS 4.4.526.0 does not support animal species |
| Patient Breed Description | 0010,2292 | LO | Any | N/A | N/A | IntelliSpace PACS 4.4.526.0 does not support animal species |
| Patient Breed Code Sequence | 0010,2293 | SQ | Any | N/A | N/A | IntelliSpace PACS 4.4.526.0 does not support animal species |
| Responsible Person | 0010,2297 | PN | Any | N/A | N/A | IntelliSpace PACS 4.4.526.0 does not support animal species |
| Responsible Person Role | 0010,2298 | CS | Any | N/A | N/A | IntelliSpace PACS 4.4.526.0 does not support animal species |
| Responsible Organization | 0010,2299 | LO | Any | N/A | N/A | IntelliSpace PACS 4.4.526.0 does not support animal species |

Table 145: 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 142: 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 146: 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 147: SC Equipment Module

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

Table 148: 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 149: 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 4.4.526.0 Viewer

The IntelliSpace PACS 4.4.526.0 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 4.4.526.0 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 150: 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 4.4.526.0 private attributes:

Table 151: 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 4.4.526.0 Private Presentation State.

The SOP Class defines the usage of it for embedding the IntelliSpace PACS 4.4.526.0 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 152: 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 shall 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 153: 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 4.4.526.0 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 154: Private SOP Classes used in IntelliSpace PACS 4.4.526.0

| 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.