DIGITHURST
Bildverarbeitungssysteme GmbH

Storage Peak
Version 5.3

DICOM Conformance Statement

Document Version: 4.4

Contents

1. Conformance Statement Overview

StoragePeak is a self-contained networked computer system used for archiving diagnostic medical images and other medical documents such as softcopy presentation states and structured reports. It allows external systems to send these documents to it for permanent storage, retrieve information about such documents and retrieve the documents themselves. The system conforms to the DICOM standard to allow the sharing of medical information with other digital imaging systems.

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Verification		
Verification Service Class	Yes	Yes
Transfer		
Computed Radiography Image Storage	Yes	Yes
Digital X-Ray Image Storage - For Presentation	Yes	Yes
Digital X-Ray Image Storage - For Processing	Yes	Yes
Digital Mammography Image Storage - For Presentation	Yes	Yes
Digital Mammography Image Storage - For Processing	Yes	Yes
Digital Intra-oral X-Ray Image Storage - For Presentation	Yes	Yes
Digital Intra-oral X-Ray Image Storage - For Processing	Yes	Yes
CT Image Storage	Yes	Yes
Enhanced CT Image Storage	Yes	Yes
Ultrasound Multi-frame Image Storage	Yes	Yes
MR Image Storage	Yes	Yes
Enhanced MR Image Storage	Yes	Yes
MR Spectroscopy Storage	Yes	Yes
MR Spectroscopy Enhanced MR Color Image Storage	Yes	Yes
Ultrasound Image Storage	Yes	Yes
Enhanced US Volume Storage	Yes	Yes
Secondary Capture Image Storage	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	Yes	Yes

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Multi-frame Grayscale Word Secondary Capture Image Storage	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	Yes	Yes
12-lead ECG Waveform Storage	Yes	Yes
General ECG Waveform Storage	Yes	Yes
Ambulatory ECG Waveform Storage	Yes	Yes
Hemodynamic Waveform Storage	Yes	Yes
Cardiac Electrophysiology Waveform Storage	Yes	Yes
Basic Voice Audio Waveform Storage	Yes	Yes
General Audio Waveform Storage	Yes	Yes
Arterial Pulse Waveform Storage	Yes	Yes
Respiratory Waveform Storage	Yes	Yes
Grayscale Softcopy Presentation State Storage	Yes	Yes
Color Softcopy Presentation State Storage	Yes	Yes
Pseudo-Color Softcopy Presentation State Storage	Yes	Yes
Blending Softcopy Presentation State Storage	Yes	Yes
XA/XRF Grayscale Softcopy Presentation State Storage	Yes	Yes
X-Ray Angiographic Image Storage	Yes	Yes
Enhanced XA Image Storage	Yes	Yes
X-Ray Radiofluoroscopic Image Storage	Yes	Yes
Enhanced XRF Image Storage	Yes	Yes
X-Ray 3D Angiographic Image Storage	Yes	Yes
X-Ray 3D Craniofacial Image Storage	Yes	Yes
Breast Tomosynthesis Image Storage	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage – For Presentation	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage – For Processing	Yes	Yes
Nuclear Medicine Image Storage	Yes	Yes
Raw Data Storage	Yes	Yes
Spatial Registration Storage	Yes	Yes
Spatial Fiducials Storage	Yes	Yes

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Deformable Spatial Registration Storage	Yes	Yes
Segmentation Storage	Yes	Yes
Surface Segmentation Storage	Yes	Yes
Real World Value Mapping Storage	Yes	Yes
VL Endoscopic Image Storage	Yes	Yes
Video Endoscopic Image Storage	Yes	Yes
VL Microscopic Image Storage	Yes	Yes
Video Microscopic Image Storage	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	Yes	Yes
VL Photographic Image Storage	Yes	Yes
VL Video Photographic Image Storage	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage	Yes	Yes
Stereometric Relationship Storage	Yes	Yes
Ophthalmic Tomography Image Storage	Yes	Yes
VL Whole Slide Microscopy Image Storage	Yes	Yes
VL Lensometry Measurements Storage	Yes	Yes
Autorefraction Measurements Storage	Yes	Yes
Keratometry Measurements Storage	Yes	Yes
Subjective Refraction Measurements Storage	Yes	Yes
Visual Acuity Measurements Storage	Yes	Yes
Spectacle Prescription Report Storage	Yes	Yes
Ophthalmic Axial Measurements Storage	Yes	Yes
Intraocular Lens Calculations Storage	Yes	Yes
Macular Grid Thickness and Volume Report	Yes	Yes
Ophthalmic Visual Field Static Perimetry Measurements Storage	Yes	Yes
Basic Text SR	Yes	Yes
Enhanced SR	Yes	Yes
Comprehensive SR	Yes	Yes
Procedure Log	Yes	Yes
Mammography CAD SR	Yes	Yes

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Key Object Selection	Yes	Yes
Chest CAD SR	Yes	Yes
X-Ray Radiation Dose SR	Yes	Yes
Colon CAD SR	Yes	Yes
Implantation Plan SR Document Storage	Yes	Yes
Encapsulated PDF Storage	Yes	Yes
Encapsulated CDA Storage	Yes	Yes
Positron Emission Tomography Image Storage	Yes	Yes
Enhanced PET Image Storage	Yes	Yes
Basic Structured Display Storage	Yes	Yes
RT Image Storage	Yes	Yes
RT Dose Storage	Yes	Yes
RT Structure Set Storage	Yes	Yes
RT Beams Treatment Record Storage	Yes	Yes
RT Plan Storage	Yes	Yes
RT Brachy Treatment Record Storage	Yes	Yes
RT Treatment Summary Record Storage	Yes	Yes
RT Ion Plan Storage	Yes	Yes
RT Ion Beams Treatment Record Storage	Yes	Yes
RT Beams Delivery Instruction Storage	Yes	Yes
Generic Implant Template Storage	Yes	Yes
Implant Assembly Template Storage	Yes	Yes
Implant Template Group Storage	Yes	Yes
Storage Commitment		
Storage Commitment Push Model	No	Yes
Query / Retrieve		
Patient Root Q/R Find	No	Yes
Patient Root Q/R Move	No	Yes
Study Root Q/R Find	No	Yes
Study Root Q/R Move	No	Yes

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Patient Study Only – Find	No	Yes
Patient Study Only – Move	No	Yes
RIS-Services		
Modality Performed Procedure Step SOP Class	No	Yes
C-Find-Modality Work List SOP Class	Yes	Yes

Table 1: Network Services

NOTE: Relational Queries are supported as an SCP, however the SCP does not support extended negotiation

2. Introduction

2.1. Revision History

Document version	Date	Author	Description
1.1	2006-12-06	M. Sabin	Initial version
2.0	2010-08-20	M. Sabin	Added new SOP Classes and Transfersyntaxes that are accepted by default Clarified Storage Commitment behaviour and retry mechanisms of Storage SCU Resolved translation issues Inserted Annex A and B
3.0	2010-12-10	M.Sabin	
3.1	2010-11-10	H.Trautnitz	STPNG Version number set to 5.0
4.0	2011-11-10	H.Trautnitz	Release after review
4.1	2012-02-16	B. Milutin	STPNG Version number set to 5.1
4.2	2012-07-30	B. Milutin	Added new SOP Classes and Transfersyntaxes that are accepted by default STPNG Version number set to 5.2
4.3	2013-07-11	M. Sabin	Adapted Title page: - Version number teamCRAFT - Version number StoragePeak - Version Number Document Added passage about modification of DICOM attributes in Storage SCP AE
4.4	2013-09-10	H. Trautnitz	Layout corrections.

2.2. Audience

This document is intended for hospital staff, health system integrators, software designers or implementers. It is assumed that the reader has a working understanding of DICOM.

2.3. Remarks

DICOM, by itself, does not guarantee interoperability. However, the Conformance Statement facilitates a first-level validation for interoperability between different applications supporting the same DICOM functionality.

This Conformance Statement is not intended to replace validation with other DICOM equipment to ensure proper exchange of information intended.
The scope of this Conformance Statement is to facilitate communication between StoragePeak and other DICOM systems. The Conformance Statement should be read and understood in conjunction with the DICOM Standard [DICOM]. However, by itself it is not guaranteed to ensure the desired interoperability and a successful interconnectivity. The user should be aware of the following important issues:
The comparison of different Conformance Statements is the first step towards assessing interconnectivity between StoragePeak and other DICOM conformant equipment.
Test procedures should be defined to validate the desired level of connectivity.

Lots of the features described in this Conformance Statement can be configured. This especially applies to the supported SOP classes and Transfer-Syntaxes. This Conformance Statement describes all SOP classes and Transfer Syntaxes that may or may not be enabled in a customer-specific configuration.

2.4. Definitions, Terms and Abbreviations

AE	Application Entity
AET	Application Entity Title
CR	Computed Radiography
CT	Computed Tomography
DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
ERIS	RIS product by Digithurst
HL7	Health Level 7 Standard
IE	Information Entity
IOD	Information Object Definition
ISO	International Standards Organisation
JPEG	Joint Photographic Expert Group
MG	Mammography
MPPS	Modality Performed Procedure Step
MR	Magnetic Resonance
NM	Nuclear Medicine
PET	Positron Emission Tomography
PDU	Protocol Data Unit
PIR	Patient Information Reconciliation
Q/R	Query/Retrieve
RIS	Radiological Information System
SC	Secondary Capture
SCP	Service Class Provider
SCU	Service Class User
SR	Structured Report
TCP/IP	Transmission Control Protocol / Internet Protocol
UID	Unique Identifier
US	Ultrasound
VM	Value Multiplicity
VR	Value Representation

3. Networking

3.1. Implementation Model

3.1.1. Application Data Flow

The division of Storage Peak into the separate DICOM Application Entities represents a somewhat arbitrary partitioning of functionality. For the purpose of this document they are organized in this manner so as to detail their independent logical functionality.
Storage Peak supports an arbitrary number of AE Titles. Each of these support the same SOP classes in the same manner.

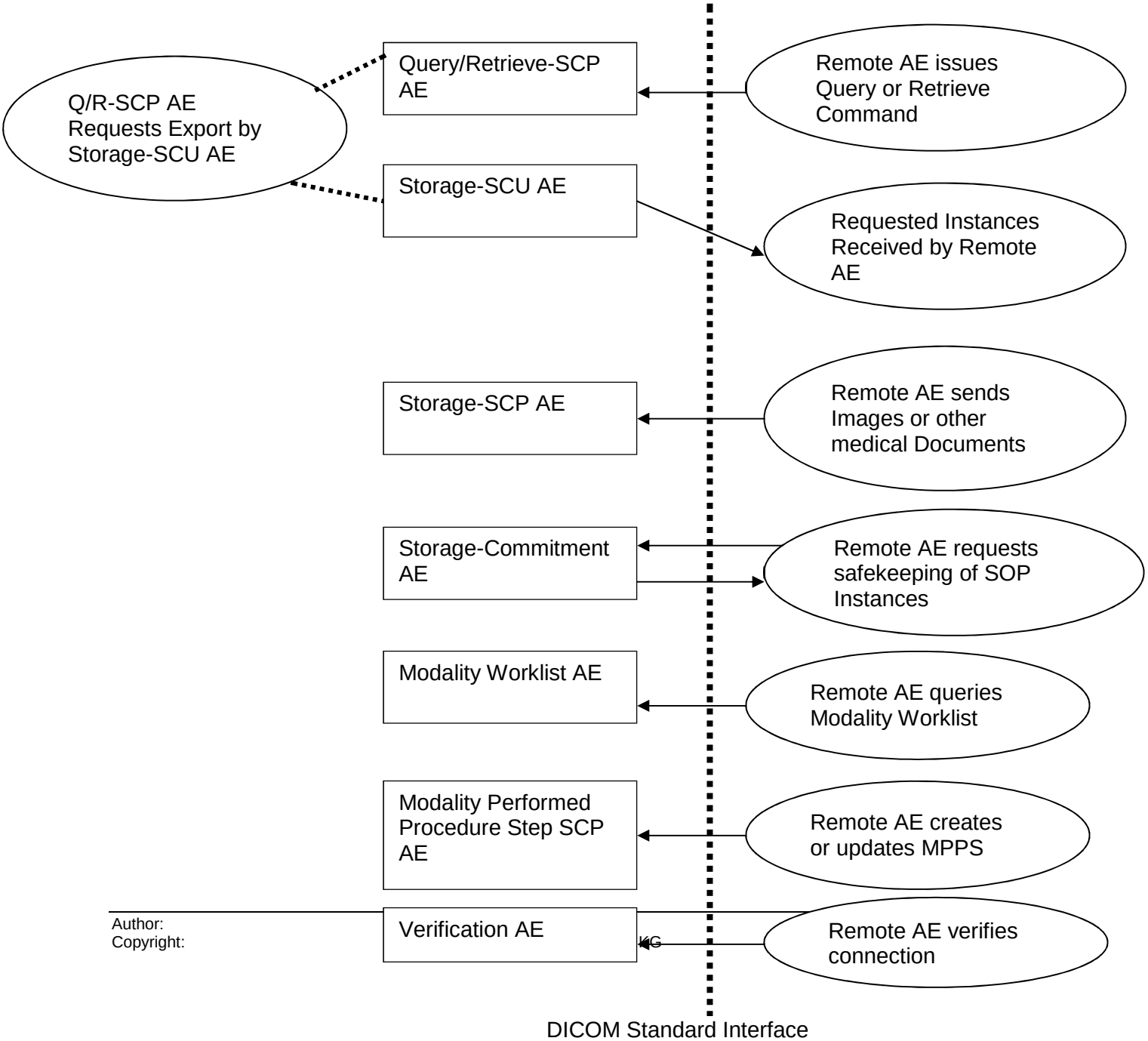

Figure 1: StoragePeak Data Flow Diagram

The Application entities detailed in the Application Data Flow Diagram are all contained in a Windows application called DH_DICOMInterface.exe. For each incoming connection, a TCP-Listener “forks” a DICOM Interface process that handles a single connection. Therefore, it is possible to address more than one AE in one TCP connection.

- The Storage-SCU AE can send composite SOP instances. It handles requests from the Query/Retrieve SCP AE to transmit instances to a specific DICOM destination. It is also used for automatic distribution of SOP instances to remote AEs (“autorouting / prefetching”) based on rules that are configured in StoragePeak.
- The Q/R-SCP can handle incoming query (C-FIND) and retrieve (C-MOVE) requests. It handles retrieval requests by issuing a command to the Storage-SCU AE to send the requested instances to the destination specified by the remote AE. The Q/R-SCP allows an AE to order images for another AE that may be located on a different machine than the issuer of the C-MOVE-Request
- The Storage SCP AE can receive incoming DICOM instances and add them to the StoragePeak database.
- The Storage Commitment SCP AE can handle requests for safekeeping SOP instances. It can thus be used to query whether StoragePeak will confirm ownership and responsibility for specific SOP instances.
- The Modality Worklist SCP AE can handle incoming C-FIND requests that query for a worklist for a specific AE or type of modality.
- The MPPS AE can handle requests to create or update information about procedure steps that are being performed / completed or discontinued by the modality

3.1.2. Functional Definitions of AEs

3.1.2.1. Functional Definition of the Storage-SCU AE

The Storage-SCU AE can be invoked by the Q/R-SCP AE to trigger the transfer of specific images to a remote destination AE. The Storage-SCU AE must be correctly configured with the host, port number and AET of any external DICOM AE’s that are to be C-MOVE retrieval destinations. The Presentation Contexts to use are determined from the list of SOP classes that are contained in the DICOM.xml configuration file. Some conversion of the DICOM image objects is possible if the original Presentation Context is not supported by the remote destination AE or if (lossless) compressed transmission is preferred.

3.1.2.2. Functional Definition of the Query/Retrieve AE

The Q/R-SCP AE waits for another application to connect at one of the presentation addresses configured for the StoragePeak application. When another application connects, Q/R -SCP AE expects it to be a DICOM application. Q/R -SCP AE will accept Associations with Presentation Contexts for SOP Classes of the DICOM Query-Retrieve Service Class, and Verification Service Class. It will handle query and retrieve requests on these Presentation Contexts and respond with data objects with values corresponding to the

contents of the StoragePeak database. For C-MOVE requests the destination for the image objects is determined from the Destination AE Title contained in the C-MOVE request. When a retrieval request is received, the Q/R -SCP AE issues a command to the Storage-SCU AE to send the specified instances to the C-MOVE Destination AE.

3.1.2.3. Functional Definition of the Storage SCP AE

The Storage-SCP AE waits for another application to connect at one of the presentation addresses configured for the StoragePeak application. When another application connects, the STORAGE-SCP AE expects it to be a DICOM application. The STORAGE-SCP AE will accept Associations with Presentation Contexts for the Storage Service Classes. Any instances received on such Presentation Contexts will be added to the StoragePeak database.

3.1.2.4. Functional Definition of the Storage Commitment SCP AE

The Storage-Commitment SCP AE waits for another application to connect at one of the presentation addresses configured for the StoragePeak application. When another application connects, the Storage Commitment AE expects it to be a DICOM application. The Storage Commitment -SCP AE will accept Associations with Presentation Contexts for SOP Class Storage Commitment.
If a Storage Commitment Push Model N-ACTION-REQUEST is received then the Storage Commitment AE will behave according to its configuration which is globally set for all Storage Commitment Requests:

1) It immediately checks if the referenced Composite SOP Instances reside in the StoragePeak Database and returns an N-EVENT-REPORT Notification
2) It stores the Request and will issue the N-EVENT-REPORT Notification as soon as the Composite SOP Instances have been copied to a long-term archive media. Depending on the type of long-term archive media (optical disk, tape, back-end-archive), the N-EVENT-REPORT may be sent long time after reception of the N-ACTION-REQUEST. Therefore it is strongly recommended to the SCU to keep the transaction open as long as possible.

NOTE: The second configuration is the preferred one and will be used by default. In both cases, the N-EVENT-REPORT will be issued over a separate DICOM association which is established by the Storage Commitment SCP AE.

3.1.2.5. Functional Definition of the Modality Worklist SCP AE

The Modality Worklist SCP AE waits for another application to connect at one of the presentation addresses configured for the StoragePeak application. When another application connects, Modality Worklist AE expects it to be a DICOM application. The Modality Worklist-SCP AE will accept Associations with Presentation Contexts for SOP Class C-Find-Modality Worklist Information Model.
After reception of the C-Find-Request, the Modality Worklist SCP AE matches the query keys received with the current contents of the eRIS database and returns all matching records.

NOTE: The Modality Worklist SCP AE is only available in conjunction with Digithurst RIS components and disabled by default.

3.1.2.6. Functional Definition of the MPPS SCP AE

The MPPS SCP AE waits for another application to connect at one of the presentation addresses configured for the StoragePeak application. When another application connects, MPPS AE expects it to be a DICOM application. The MPPS SCP AE will accept Associations with Presentation Contexts for the Modality Performed Procedure Step SOP Class. The MPPS SCP AE receives N-CREATE and N-SET messages for a study which is in progress at the modality. If an MPPS-SOP-Instance is updated to status “COMPLETED”, the MPPS SCP AE will enter the dosimetric data (if received) and billing information for the performed procedure step into the eRIS-Database.

NOTE: The MPPS SCP AE is only available in conjunction with Digithurst RIS components and disabled by default

3.1.3. Sequencing of Real-World Activities

A composite SOP instance must have been received by the STORAGE-SCP AE before Storage Commitment Push Model or Query-Retrieve Requests related to this SOP instance can be successfully handled. Furthermore, depending on the configuration (see 3.1.2.4), long-term archiving has to be taken place before a Storage Commitment Push Model Request can successfully be handled.

As the MPPS AE relies on identifiers that have been issued by the Modality Worklist AE, it is strongly recommended to query for the Worklist and take over the identifying elements for a procedure step before issuing MPPS information for the procedure step. However, it is possible in theory to enter these identifiers manually at the MPPS-SCU.

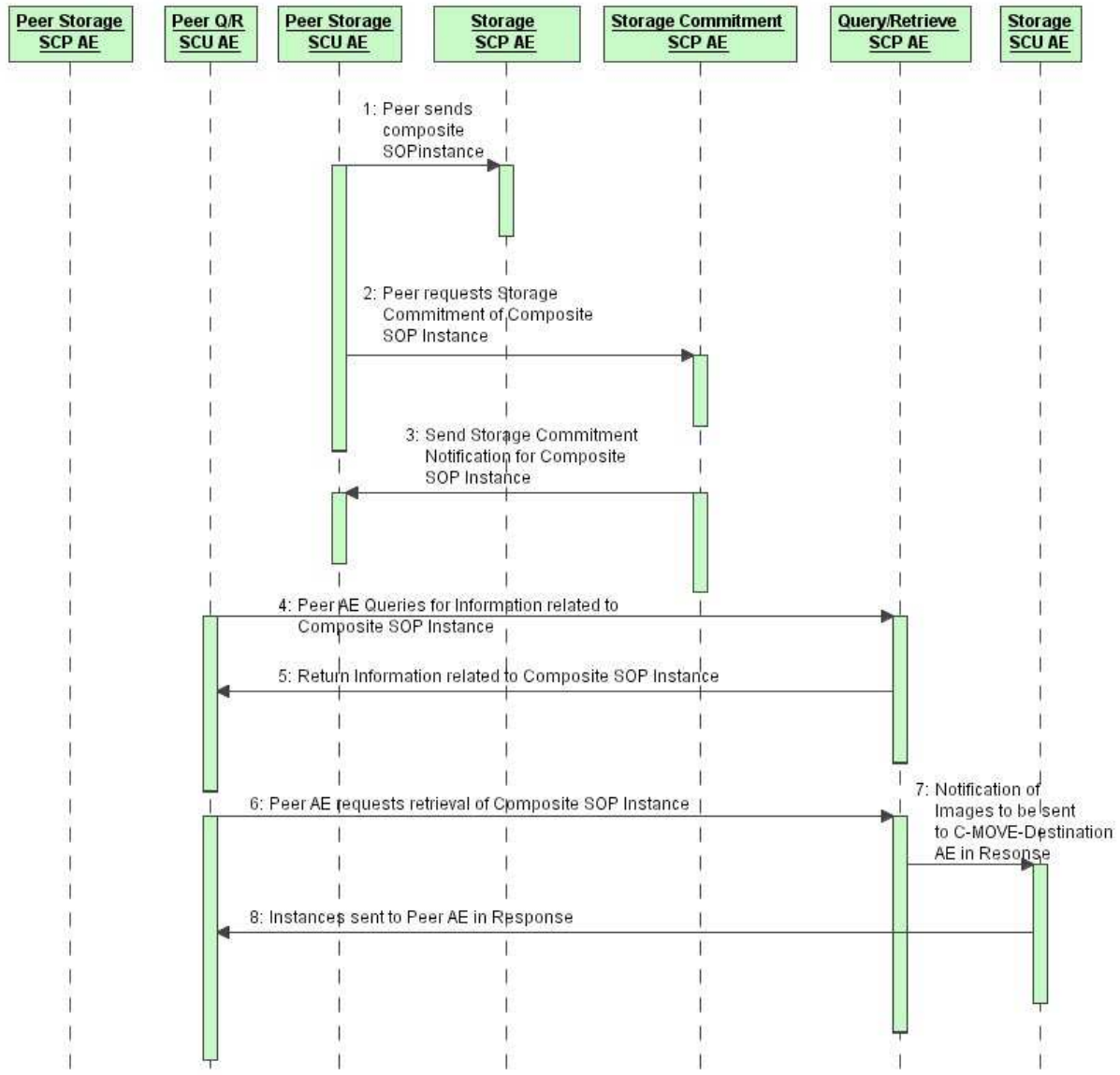

Figure 2: Sequencing Constraints applying to Storage and Q/R

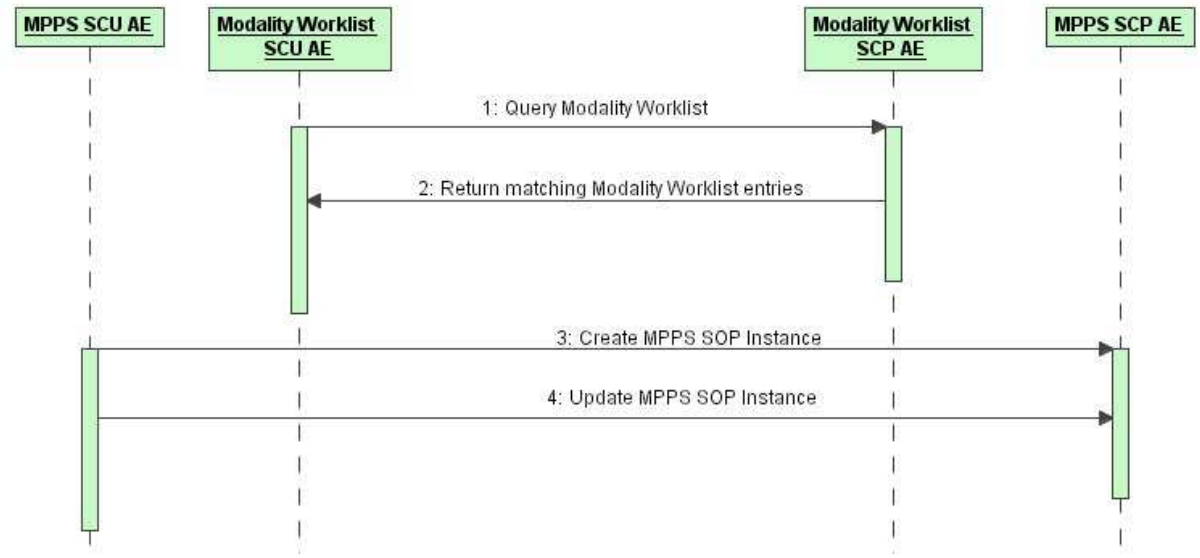

Figure 3 : Sequencing constraints applying to Modality Worklist and MPPS

3.2. Application Entity specifications

3.2.1. Storage SCU Application Entity Specification

The Storage-SCU AE is employed in two different scenarios. It works as a sub-operation to a C-MOVE-operation processed by the Q/R-SCP and is also used to automatically distribute composite SOP instances being received by the Storage-SCP in the entire network. The latter operation is called “Autorouting” or “Prefetching”. Autorouting means that SOP instances that are currently received are automatically forwarded to remote AEs. Prefetching is also triggered by reception of composite SOP instances but refers to other composite SOP instances of preliminary exams. Autorouting and prefetching are subject to a customer-specific configuration referred to as the “Rule set” which is configured individually for each StoragePeak instance and may or may not contain autorouting and prefetching rules.
The behavior of the Storage SCU in terms of the DICOM standard is exactly the same in both scenarios. The only difference is that the transfer of composite SOP instances in an autorouting/prefetching use case may be retried if the first attempt was not successful whereas it will not try to retransfer instances that it failed to export in a C-MOVE-suboperation.

3.2.1.1. SOP Classes

The Storage SCU AE provides Standard Conformance to the following DICOM SOP Classes. By changing the configuration it is possible to support additional or fewer SOP Classes.

Image-Type SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	No
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
Digital Mammography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	No
Digital Mammography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	No
Digital Intra-oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Yes	No
Digital Intra-oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	No
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	No
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	No
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	No
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Yes	No
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Yes	No
MR Spectroscopy Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	Yes	No
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	No
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Yes	No
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	No
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	Yes	No
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	No
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	No
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	Yes	No
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	Yes	No
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Yes	No
Intravascular Optical Coherence Tomography Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.14.1	Yes	No
Intravascular Optical Coherence Tomography Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.14.2	Yes	No
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	No
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	No
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	No
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	No
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	No
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No
VL Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	No
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	No
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	Yes	No
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	Yes	No
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Yes	No
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	Yes	No
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Yes	No
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	No

Non-ImageType SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	No
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	No
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	No
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	No
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	No
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	No
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Yes	No
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Yes	No
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	Yes	No
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Yes	No
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	Yes	No
Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	Yes	No
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	Yes	No
XA/XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	Yes	No
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Yes	No
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Yes	No
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	No
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	Yes	No
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Yes	No
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Yes	No
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Yes	No
VL Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	Yes	No
Autorefraction Measurements	1.2.840.10008.5.1.4.1.1.78.2	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
Storage			
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	Yes	No
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	Yes	No
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	Yes	No
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	Yes	No
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	Yes	No
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	Yes	No
Macular Grid Thickness and Volume Report	1.2.840.10008.5.1.4.1.1.79.1	Yes	No
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	Yes	No
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Yes	No
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Yes	No
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Yes	No
Procedure Log	1.2.840.10008.5.1.4.1.1.88.40	Yes	No
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Yes	No
Key Object Selection	1.2.840.10008.5.1.4.1.1.88.59	Yes	No
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Yes	No
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Yes	No
Colon CAD SR	1.2.840.10008.5.1.4.1.1.88.69	Yes	No
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Yes	No
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Yes	No
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Yes	No
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Yes	No
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Yes	No
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Yes	No
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Yes	No
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Yes	No
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Yes	No
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	Yes	No
Generic Implant Template Storage	1.2.840.10008.5.1.4.43.1	Yes	No
Implant Assembly Template Storage	1.2.840.10008.5.1.4.44.1	Yes	No
Implant Template Group Storage	1.2.840.10008.5.1.4.45.1	Yes	No

Table 2: SOP Classes for Storage SCU AE

3.2.1.2. Association Establishment Policies

3.2.1.2.1. General

The Storage SCU AE can form Associations either when requested to do so by the Q/R-SCP AE or when incoming instances received by the Storage SCP AE are automatically distributed according to the rule configuration of StoragePeak. The Storage SCU AE can only request the opening of an association. It cannot accept Requests to open associations from external AEs.
The DICOM standard application context name is always proposed:

Application Context Name	1.2.840.10008.3.1.1.1

Table 3: DICOM Application Context for Storage SCU AE

3.2.1.2.2. Number of associations

The maximum number of simultaneous associations is only limited by the system recources.

3.2.1.2.3. Asynchronous Nature

The STORAGE-SCU AE does not support asynchronous communication.

3.2.1.2.4. Implementation Identifying Information

Implementation Class UID	1.2.840.873300.2.3.1996.1.4.3.5.3
Implementation Version Name	DH_4.0.1.10

Table 4: DICOM Implementation Identifying Information for STORAGE-SCU AE

NOTE: As stated above, all AEs described in this conformance statement are integrated in one DICOM Interface process. All AEs use the same Implementation Class UID and Implementation Version Name. The version name is updated with each new release of StoragePeak, as the different AE versions are never released independently.

3.2.1.3. Association Initiation Policy

3.2.1.3.1. Activity – Send Images Requested by an External Peer AE

3.2.1.3.1.1. Description and Sequencing of Activity

The Storage-SCU AE will initiate a new Association when the Q/R-SCP AE invokes the Storage SCU AE to transmit composite SOP instances. The Q/R-SCP AE will issue a command whenever it receives a valid C-MOVE-REQUEST. An association request is sent to the specified C-MOVE destination AE and upon successful negotiation of the required presentation context the transfer of the composite SOP instances is started. All instances matched by the C-MOVE-REQUEST will be transferred in a single association. If an error occurs during transmission over an open association then the transfer is halted and the association will be aborted. In case that some presentation contexts could not be negotiated, only those SOP instances will be transferred which have been successfully negotiated.
The Storage SCU service class will not attempt to independently retry the export of requested SOP instances in a C-MOVE scenario.

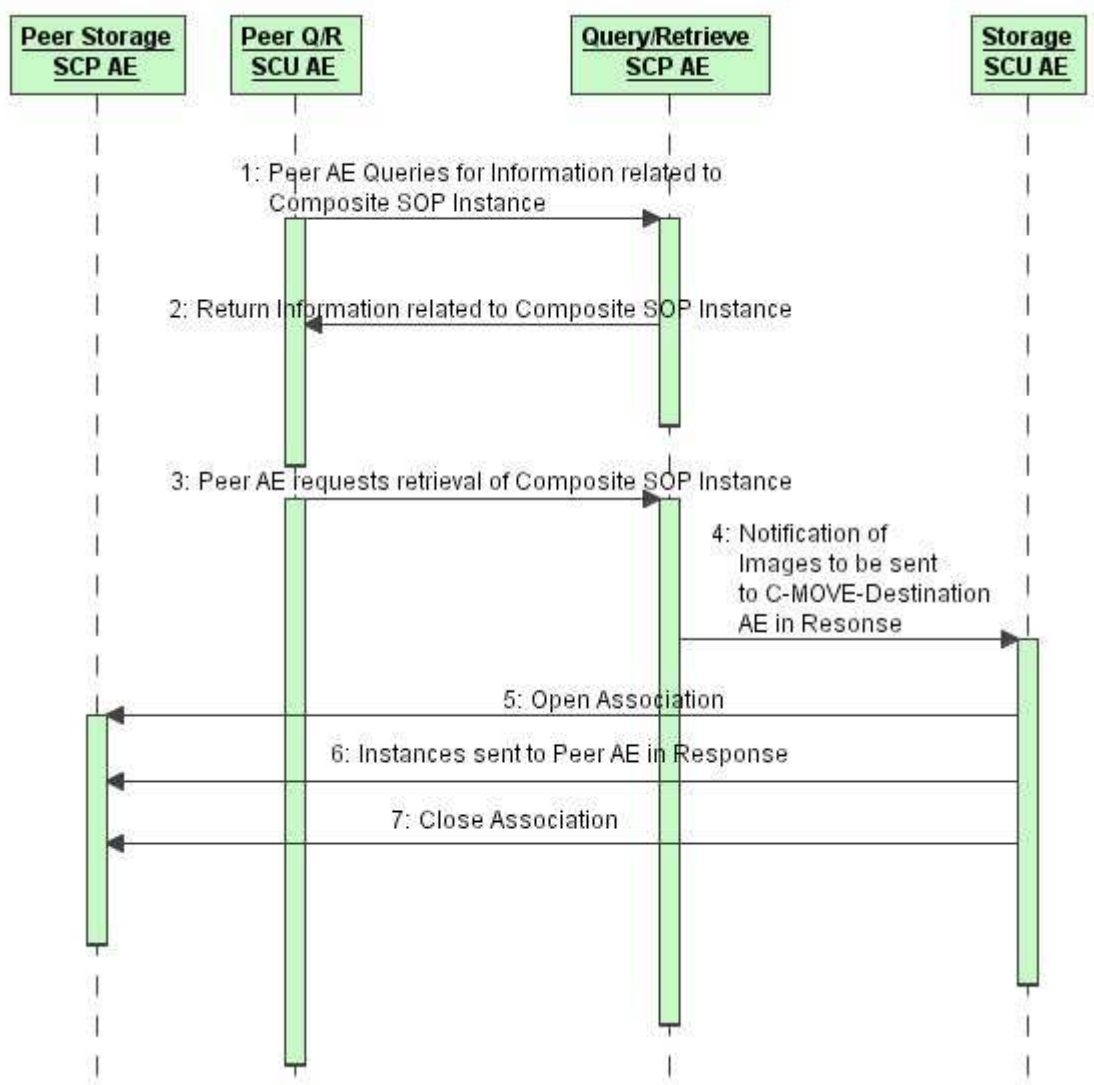

Figure 4: Sequencing of Activity - transfer instances requested by an external peer AE

The following sequencing constraints illustrated in
Figure 4 apply to the Storage SCU AE

1. Peer AE requests retrieval of Study, Series or Composite SOP Instance from Q/R SCP AE (C-MOVE-RQ)
2. Q/R SCP AE signals Storage SCU AE to send the Composite SOP Instances indicated in the C-MOVE-RQ to the C-MOVE destination AE
3. Storage SCU AE opens a new association with the indicated C-MOVE destination AE
4. Storage SCU sends the indicated SOP instances
5. Storage SCU closes the association

3.2.1.3.2. Activity – Route/Prefetch SOP Instances to an external Peer AE

3.2.1.3.2.1. Description and Sequencing of Activity

The Storage-SCU AE will initiate a new Association when rule processor invokes the Storage SCU AE to transmit composite SOP instances. An association request is sent to the specified destination AE and upon successful negotiation of the required presentation context the transfer of the composite SOP instances is started. In case that some presentation contexts could not be negotiated, only those SOP instances will be transferred which have been successfully negotiated.

If the transfer of a specific composite SOP instance fails, the behaviour of the Storage SCU AE in a routing/prefetching scenario depends on the reason for the failure. If Presentation Contexts were rejected by the remote Storage SCP AE, the Storage SCU AE will not retry to send these instances again at a later point of time. If the Storage SCP AE is temporarily not available, the Storage SCU AE will retry to send the images until the operation succeeds or the Storage SCP AE rejects the corresponding Presentation Contexts.

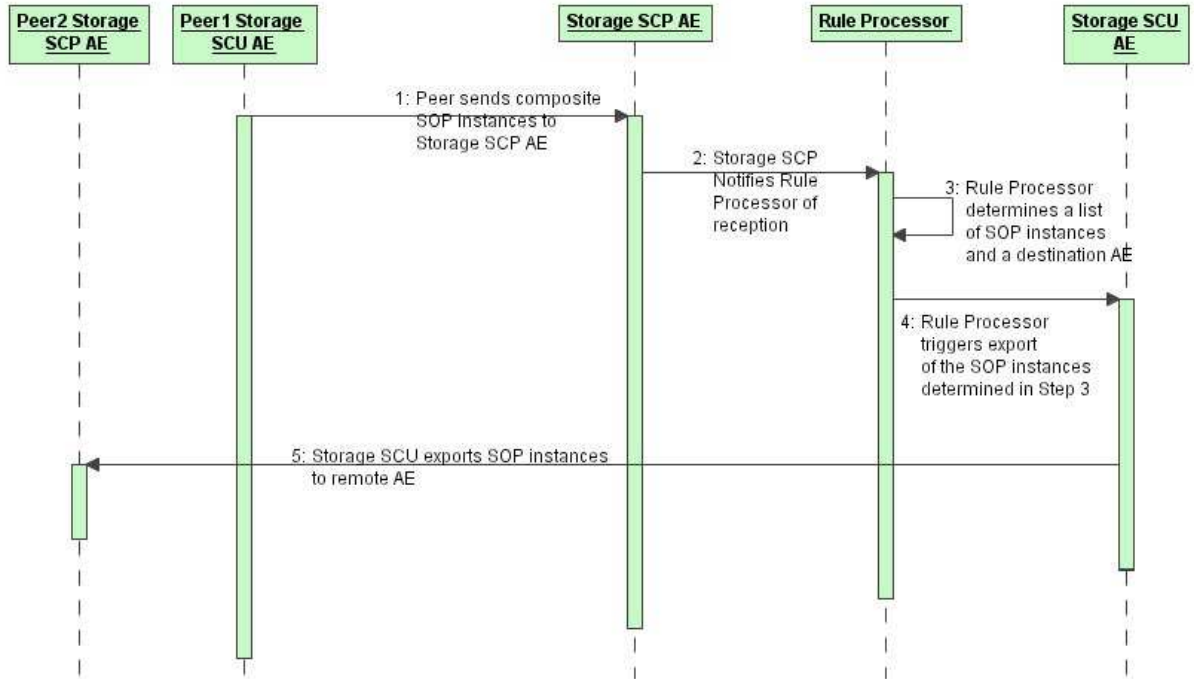

Figure 5: Sequencing of Activity – Route/Prefetch SOP Instances to an external Peer AE

3.2.1.3.3. Proposed Presentation Contexts

The Storage SCU AE will propose presentation contexts as shown in the table below:

For Image-Type SOP Classes:

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Digital Mammography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Digital Mammography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.1.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Digital Intra-oral X-Ray Image	1.2.840.10008.5.1.4.1.1.1.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Digital Intra-oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.1.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Enhanced MR Image	1.2.840.10008.5.1.4.1.1.4.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Storage	1.2.840.10008.5.1.4.1.1.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.4.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.4.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.4.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
MR Spectroscopy Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.4.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.4.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.6.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.6.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Multi-frame Single Bit	1.2.840.10008.5.1.4.1.1.7.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.7.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.7.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.7.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.7.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.7.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.7.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.7.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.12.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.12.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
X-Ray Radiofluoro	1.2.840.10008.5.1.4.1.1.12.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
scopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.12.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.12.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.13.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.13.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.13.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.13.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.13.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.13.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Intravascular Optical Coherence Tomography Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.14.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.14.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.14.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Intravascular Optical Coherence Tomography Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.14.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.14.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.14.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.20	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.2.1	Explicit VR	1.2.840.10008.1.2.1	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
		Little Endian			
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.4.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	Non
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.3	Explicit VR	1.2.840.10008.1.2.1	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
		Little Endian			
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.5.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.77.1.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.128	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.128	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.130	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.130	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.131	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.131	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCU	None
	1.2.840.10008.5.1.4.1.1.481.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.1	Explicit VR	1.2.840.10008.1.2.1	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
		Little Endian			

Table 5: Proposed Presentation Contexts for Image-Type SOP Classes

For Non-Image-Type SOP Classes:

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.4.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.4.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.9.5.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Respiratory	1.2.840.10008.5.1.4.1.1.9.6.1	Implicit VR	1.2.840.10008.1.2	SCU	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Waveform Storage		Little Endian			
	1.2.840.10008.5.1.4.1.1.9.6.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.11.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.11.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.11.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
XA/XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.11.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.66	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.66.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Spatial	1.2.840.10008.5.1.4.1.1.66.2	Implicit VR	1.2.840.10008.1.2	SCU	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Fiducials Storage		Little Endian			
	1.2.840.10008.5.1.4.1.1.66.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.66.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.66.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.66.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.67	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.78.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.78.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.78.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Subjective Refraction	1.2.840.10008.5.1.4.1.1.78.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.78.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.78.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.78.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.78.8	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Macular Grid Thickness and Volume Report	1.2.840.10008.5.1.4.1.1.79.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.79.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.80.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.11	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Enhanced	1.2.840.10008.5.1.4.1.1.88.22	Implicit VR	1.2.840.10008.1.2	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
SR		Little Endian			
	1.2.840.10008.5.1.4.1.1.88.22	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Procedure Log	1.2.840.10008.5.1.4.1.1.88.40	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.40	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.50	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Key Object Selection	1.2.840.10008.5.1.4.1.1.88.59	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.59	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.65	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.67	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Colon CAD SR	1.2.840.10008.5.1.4.1.1.88.69	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.69	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.88.70	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Encapsulat	1.2.840.10008.5.1.4.1.1.104.1	Implicit VR	1.2.840.10008.1.2	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
ed PDF Storage		Little Endian			
	1.2.840.10008.5.1.4.1.1.104.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.104.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.131	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.8	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.1.1.481.9	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.34.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Generic Implant Template Storage	1.2.840.10008.5.1.4.43.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.43.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Implant Assembly Template Storage	1.2.840.10008.5.1.4.44.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.44.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Implant Template Group Storage	1.2.840.10008.5.1.4.45.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
	1.2.840.10008.5.1.4.45.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

Table 6: Proposed Presentation Contexts for Non-Image-Type SOP Classes

3.2.1.3.4. SOP Specific Conformance for Image SOP Classes

Composite DICOM SOP Instances are maintained as DICOM Part 10 compliant files in the StoragePeak database. The entire set of tags received with the image will be saved in StoragePeak; this includes all Private and SOP Extended Elements. When a SOP Instance is selected for export from StoragePeak, its content will be exported as it was originally received except for a few possible exceptions. Some of the Patient demographic and Study information Elements whose values can have been altered due to changes administered on StoragePeak or changes to the state of the image data due to compression can be altered when the SOP Instance is exported.
The Patient demographic and Study information can be entered or altered by several means: manually, or from HL7 messaging. The replacement behavior depends on which specific DICOM and HL7 services are supported. Also, this behavior is configurable. Values can be altered without changing the SOP Instance UID unless otherwise noted. Refer to the Annex for the specific details of which Elements can have their values altered at time of export.
StoragePeak creates files called Service Logs that can be used to monitor their status and diagnose any problems that may arise. If any error occurs during DICOM communication then appropriate messages are always output to these Service Logs. In addition, error messages may be output as alerts to the User Interface in certain cases.

The Storage SCU AE will exhibit the following behaviour according to the status code value returned in a C-STORE response from a destination C-STORE SCP

Service Status	**Further Meaning**	**Error Code**	**Behavior**
Success	Success	0x0000	The SCP has successfully stored the exported SOP instance. A message is sent to the Q/R SCP AE indicating successful export. The Q/R SCP AE will send the appropriate PENDING or SUCCESS Status in the C-MOVE response. Success indication is output to the service logs. A message is posted to the user interface to update the count of transferred SOP instances for the “outgoing connection”
Refused	Out of Resources	0xA700 – 0xA7FF	This is treated as a permanent failure. A message is sent to the Q/R SCP indicating an export failure and the association is aborted. The Q/R-SCP will send an appropriate Status in the C-MOVE-Response Error indication message is output to the service logs A message is posted to the user interface showing the reason for aborting the outgoing connection
Error	Dataset	0xA900 –	This is treated as a permanent failure. A message is

	does not match SOP class	0xA9FF	sent to the Q/R-SCP indicating that the current SOP instance could not be transmitted. The Q/R-SCP will increase the “number of error operations” in the C-MOVE response. Error indication message is output to the service log. No message is posted to the user interface
Warning	Coercion of Data Elements	B000	Transmission of composite SOP instance is considered successful. A message is sent to the Q/R-SCP indicating successful export. The Q/R-SCP will send the appropriate PENDING or SUCCESS status in the C-MOVE-Response. Warning indication message is output to the service logs. No message is posted to the user interface.
Warning	Dataset does not match SOP Class	B007	Transmission of composite SOP instance is considered unsuccessful. A message is sent to the Q/R-SCP indicating that the transmission was not successful. The Q/R-SCP will increase the “number of error operations” in the C-MOVE response Warning indication message is output to the service logs. No message is posted to the user interface
Warning	Elements Discarded	B006	Transmission of composite SOP instance is considered successful. A message is sent to the Q/R-SCP indicating successful export. The Q/R-SCP will send the appropriate PENDING or SUCCESS status in the C-MOVE-Response. Warning indication message is output to the service logs. No message is posted to the user interface
Warning	Attribute List Error	0107	Transmission of composite SOP instance is considered successful. A message is sent to the Q/R-SCP indicating successful export. The Q/R-SCP will send the appropriate PENDING or SUCCESS status in the C-MOVE-Response. Warning indication message is output to the service logs. No message is posted to the user interface

*	*	Any other status code	This is treated as a permanent failure. A message is sent to the Q/R SCP indicating an export failure and the association is aborted. The Q/R-SCP will send an appropriate Status in the C-MOVE-Response Error indication message is output to the service logs A message is posted to the user interface showing the reason for aborting the outgoing connection

Table 7: Storage SCU AE C-Store Response Status Handling Behaviour

All status codes indicating an error or refusal are treated as a permanent failure. The Storage-SCU-AE never automatically resends composite SOP instances, when export is triggered by the Q/R-SCP.

Exception	Behavior
Association A-ABORTed by the SCP or the network layers indicate communication loss (i.e. low level TCP/IP socket closure)	A message is sent to the Q/R-SCP AE indicating a permanent export failure. The Q/R-SCP will send an appropriate status in the C-MOVE-Response Error indication message is posted to the service logs Error indication message is posted to the user interface.

Table 8: Storage SCU AE Communication Failure Behaviour

NOTE: Once an association is established, the Storage-SCU AE waits infinitely for expected DICOM message response. Timeouts will not be applied to an established association.

3.2.1.4. Association Acceptance Policy

The Storage-SCU AE does not accept associations.

3.2.2. Query/Retrieve SCP AE Specification

The Q/R-SCP AE provides standard conformance to the following DICOM V3.0 SOP classes:

SOP Class Name	SOP Class UID	SCU	SCP
Patient Root Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.1.1	No	Yes
Patient Root Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.1.2	No	Yes
Study Root Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	No	Yes

Study Root Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	No	Yes
Patient Study Only Information Model - FIND	1.2.840.10008.5.1.4.1.2.3.1	No	Yes
Patient Study Only Information Model - MOVE	1.2.840.10008.5.1.4.1.2.3.2	No	Yes

Table 9: SOP Classes for Q/R-SCP AE

3.2.2.1. Association Policies

3.2.2.1.1. General

The Q/R-SCP AE will never initiate associations; it only accepts association requests from external DICOM AEs. The Q/R-SCP will accept associations for C-FIND and C-MOVE-Requests. In case of a C-MOVE-request, the Q/R-SCP will issue a command to the TORAGE-SCU SOP class to initiate an association with the destination DICOM AE to send composite SOP instances as specified by the originator of the C-MOVE-request.

The DICOM standard application context name for DICOM 3.0 is always accepted:

Application Context Name	1.2.840.10008.3.1.1.1

Table 10: DICOM application context for the Q/R-SCP AE

3.2.2.1.2. Number of associations

The Q/R-SCP AE can support multiple simultaneous associations. Each time the Q/R-SCP AE receives an association, a child process will be spawned to process the query or retrieval request. The maximum number of child processes and thus the number of simultaneous associations that can be processed is only limited by the system resources.

3.2.2.1.3. Asynchronous Nature

The Q/R-SCP AE does not support asynchronous communication (multiple outstanding transactions over a single association).

3.2.2.1.4. Implementation Identifying Information

The implementation information for the Application Entity is:

Implementation Class UID	1.2.840.873300.2.3.1996.1.4.3.5.3
Implementation Version Name	DH_4.0.1.10

Table 11: DICOM Implementation Class and Version for Q/R-SCP AE

NOTE: As stated above, all AEs described in this conformance statement are integrated in one DICOM Interface process. All AEs use the same Implementation Class UID and Implementation Version Name. The version name is updated with each new release of StoragePeak, as the different AE versions are never released independently.

3.2.2.2. Association Initiation Policy

The Q/R-SCP does not initiate associations.

3.2.2.3. Association Acceptance Policy

3.2.2.3.1. Activity – Handling Query and Retrieval Requests

3.2.2.3.1.1. Description and Sequencing of Activity

The Q/R SCP AE accepts associations only if the AETs sent in the association request are valid. “Valid” means that the called AET must be one of the AETs configured for the StoragePeak application entity and calling AET must be configured in the AET table of the Storage Peak configuration database.

If the Q/R-SCP receives a C-FIND request then the response(s) will be sent over the same association used to send the C-FIND-request.

If the Q/R-SCP receives a C-MOVE request then the responses will be sent over the same association used to send the C-MOVE request. The Q/R-SCP AE will invoke the Storage-SCU AE to transfer the requested SOP instances to the C-MOVE destination. The Storage SCU AE notifies the Q/R-SCP of the success or failure of each attempt to send a composite SOP instance to the peer C-MOVE destination. The Q/R-SCP AE then sends a C-MOVE response indicating this status after each attempt. This behaviour applies to composite SOP instances which reside in the online storage of StoragePeak.

If one or more SOP instances that were requested in the C-MOVE request are offline, the Q/R-SCP AE sends a request to the offline storage system to recover (“recall”) the missing SOP instances. For these SOP-instances, no immediate C-MOVE response is sent to the peer Q/R SCU AE. Instead of that, after all SOP instances that were found in the online storage have been transferred, the number of SOP instances that were requested from the offline storage system will be sent in the final C-MOVE response (“number of warning sub-operations”). After that the C-MOVE operation is considered to be completed. When the missing SOP instances have been recovered from the offline storage system, they will be

forwarded to the C-MOVE destination automatically by the Storage-SCU AE. For this operation which is asynchronous to the C-MOVE operation, the autorouting mechanism is used as described in the Storage-SCU AE specification.

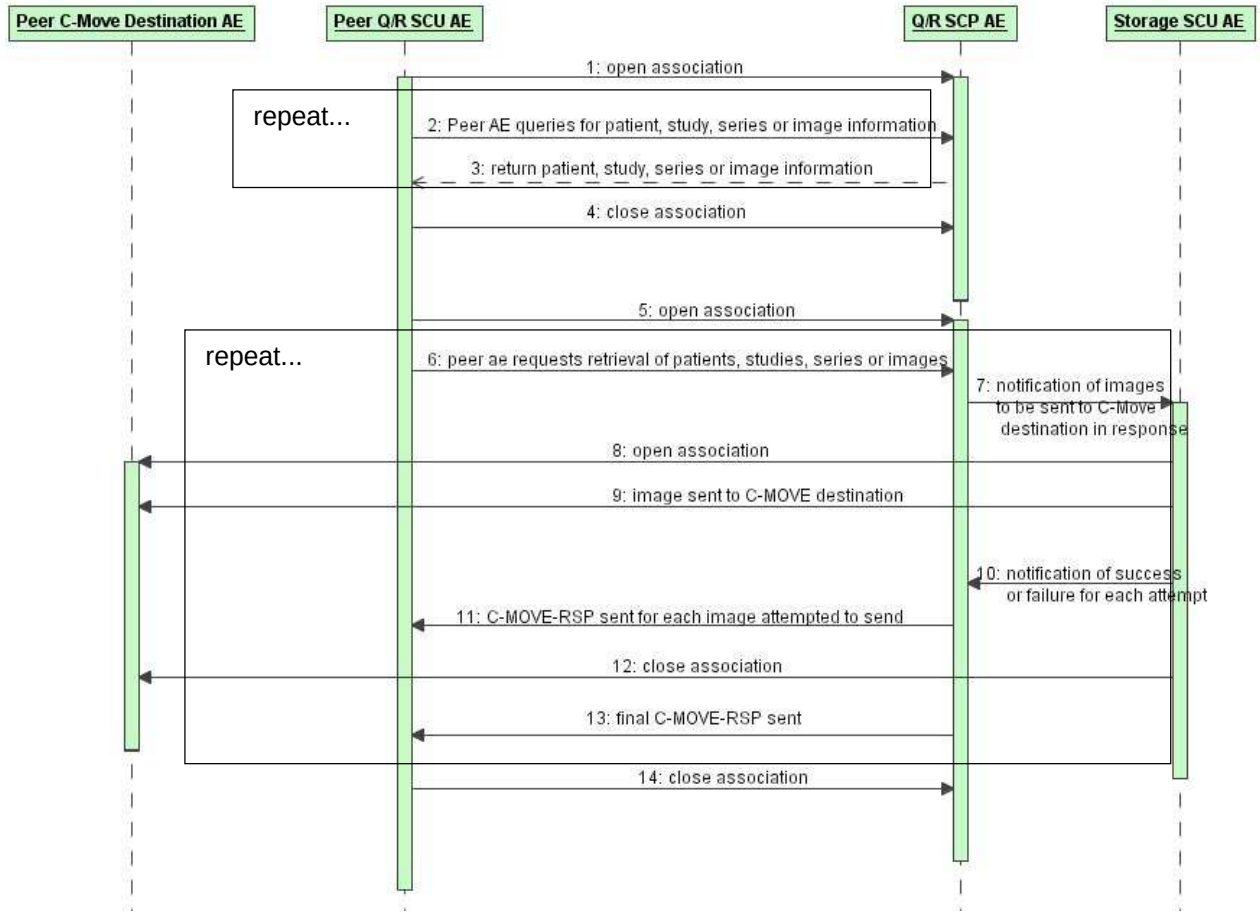

Figure 6: Sequencing of activity – handling query and retrieval requests

The following sequencing constraints illustrated in
Figure 6 apply to the Query-Retrieve-SCP AE for handling queries (C-FIND requests):

1. Peer AE opens an association with the Query-Retrieve-SCP-AE
2. Peer AE sends a C-FIND-RQ message
3. Query-Retrieve-SCP AE returns a C-FIND-RSP message to the peer AE with matching information. A C-FIND-RSP is sent or each entity matching the identifier specified the identifier specified in the C-FIND-RQ. A final C-FIND-RSP is sent indicating that the matching is complete
4. Peer AE closes the association. Note that the peer AE does not have to close the association immediately. Further C-Find or C-Move requests can be sent over the association before it is closed.

The following sequencing constraints illustrated in
Figure 6 apply to the Query-Retrieve-SCP for handling retrievals (C-MOVE-Requests)

1. Peer AE opens an association with the Query-Retrieve-SCP AE
2. Peer AE sends a C-MOVE-RQ Message
3. Query-Retrieve-SCP AE notifies the STORAGE-SCU AE to send the composite SOP instances to the peer C-MOVE Destination AE as indicated in the C-MOVE-RQ
4. After attempting to send a SOP instance, the Storage-SCU AE indicates to the Query-Retrieve-SCP AE whether the transfer succeeded or failed. The Query-Retrieve-SCP AE returns a C-MOVE-RSP indicating this success or failure.
5. Once the Storage-SCU AE has completed all attempts to transfer the SOP instances to the C-MOVE-Destination AE, the Query-Retrieve-SCP AE sends a final C-MOVE-RSP indicating the overall success or failure of the retrieval.
6. Peer AE closes the Association. Note that the peer AE does not have to close the association immediately. Further C-FIND or C-MOVE requests can be sent over the same association before it is closed.

The Query-Retrieve-SCP AE may reject association attempts as shown in the table below. The Result, Source and Reason/Diag columns represent the values returned in the corresponding fields of an ASSOCIATE-RJ PDU (see PS 3.8, Section 9.4.3).

Result	Source	Reason/Diag	Explanation
1 – rejected permanent	SCP	2 - application context name not supported	The association request contained an unsupported application context name
1 – rejected permanent	SCP	7 – called AE title not recognized	The association request contained an unrecognized called AE title.
1 – rejected permanent	SCP	3 – calling AE title not recognized	The association request contained an unrecognized calling AE title
1 – rejected permanent	SCP	1 – no reason given	The association request could not be parsed.

Table 12: Association rejection reasons

3.2.2.3.1.2. Accepted Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg
SOP Class Name	SOP Class UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Q/R Information Model FIND	1.2.840.10008.5.1.4.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Q/R Information Model FIND	1.2.840.10008.5.1.4.2.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Patient Root Q/R	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Information Model MOVE					
Patient Root Q/R Information Model MOVE	1.2.840.10008.5.1.4.1.2.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Study Root Q/R Information Model FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Study Root Q/R Information Model FIND	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Study Root Q/R Information Model MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Study Root Q/R Information Model MOVE	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Table 13: Accepted Presentation Contexts

Note: Patient Root queries are preferred if StoragePeak is used in conjunction with the correction service.

3.2.2.3.1.3. SOP Specific Conformance for Query SOP Class

The Query-Retrieve-SCP AE supports hierarchical queries and relational queries (although relational queries are not negotiated because it does not support extended negotiation). There are no attributes returned by default. Only those attributes requested in the query identifier are returned. Query responses are always return values from the StoragePeak database. Exported SOP instances are always updated with the latest values in the database prior to export. Thus, a change in patient demographic information will be contained in both the C-FIND responses and any composite SOP instances exported to a C-MOVE destination AE.

It is strongly recommended to use the Patient Root Information Model due to the fact that an update to patient information can be applied to parts (i.e. Series, Instances) of a study. To avoid references in other DICOM instances (such as presentation states) to become invalid, the StudyInstanceUID left unchanged by this operation. This means that a single StudyInstanceUID can be assigned to different patients by the correction service.

Patient Root Information Model

All required search keys for each of the four levels are supported.

Level Name Attribute Name	Tag	VR	Types of Matching
SOP Common			
Specific Character Set	0008,0005	CS	NONE
Patient Level			
Patient's	0010,0010	PN	S,*,U
Name Patient	0010,0020	LO	S,*,U
ID	0010,0030	DA	S, U S,
Patient's Birth	0010,0040	CS	U S,U
Date Patient's Sex	0010,1010	AS	S,U
Patient's Age	0010,1020	DS	S,U
Patient's Size	0010,1030	DS	
Patient's Weight			
Study Level			
Study Date	0008,0020	DA	S,R,U
Study Time	0008,0030	TM	R,U
Accession	0008,0050	SH	S,*,U
Number Study ID	0020,0010	SH	S,*,U
Study Instance UID	0020,000D	UI	S,U
Referring	0008,0090	PN	S,*,U
Physicians Name			
Study	0008, 1030	LO	S,*,U
Description			
Admission ID	0038,0010	LO	S,*,U
Series Level			
Modality	0008,0060	CS	S,*,U
Series Number	0020,0011	IS	S,*,U
Series Instance UID	0020,000E	UI	S,U,L
Series Date	0008,0021	DA	S,R,U
Series Time	0008,0030	TM	S,U
Body Part Examined	0018,0015	CS	S,*,U
Image Level			
SOP Class UID	0008,0016	UI	S,U
SOP Instance	0008,0018	UI	S,U
UID	0028,0004	CS	S,*,U
Photometric Interpretation	0020,0013	IS	S,U
Instance	0008,0023	DA	S,R,U
Number Content	0008,0033	TM	S,U
Date Content			
Time			

Table 14: Patient Root C-FIND SCP supported elements

Level Name Attribute Name	Tag	VR	Types of Matching
SOP Common			
Specific Character Set	0008,0005	CS	NONE
Study Level			
Patient's Name	0010,0010	PN	S,*,U

Patient ID	0010,0020	LO	S,*,U
Patient's Birth Date	0010,0030	DA	S, U
Patient's Sex	0010,0040	CS	S, U
Patient's Age	0010,1010	AS	S,U
Patient's Size	0010,1020	DS	S,U
Patient's Weight	0010,1030	DS	S,U
Study Date	0008,0020	DA	S,R,U
Study Time	0008,0030	TM	R,U
Accession Number	0008,0050	SH	S,*,U
Study ID	0020,0010	SH	S,*,U
Study Instance UID	0020,000D	UI	S,U
Referring Physicians Name	0008,0090	PN	S,*,U
Study Description	0008, 1030	LO	S,*,U
Series Level			
Modality	0008,0060	CS	S,*,U
Series Number	0020,0011	IS	S,*,U
Series Instance UID	0020,000E	UI	S,U,L
Series Date	0008,0021	DA	S,R,U
Series Time	0008,0030	TM	S,U
Image Level			
SOP Class UID	0008,0016	UI	S,U
SOP Instance UID	0008,0018	UI	S,U
Photometric Interpretation	0028,0004	CS	S,*,U
Instance Number	0020,0013	IS	S,U
Content Date	0008,0023	DA	S,R,U
Content Time	0008,0033	TM	S,U

Table 15: Study Root C-FIND SCP supported elements

The tables should be read as follows:
Attribute Name:

Attribute Name	Attributes supported for returned C-FIND responses
Tag	Appropriate DICOM tag for this attribute
VR	Appropriate DICOM VR for this attribute
Types of matching	S: Single value matching R: Range matching *: Wildcard matching U: Universal matching

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	Matching is complete. No final identifier is supplied
Cancel	Matching terminated due to Cancel	FE00	The C-FIND SCU sent a Cancel Request. This has been acknowledged and the search for matches has been halted

	Request		
Pending	Matches are continuing and current match is supplied	FF00	Indicates that the search for further matches is continuing.

Table 16: Service Status

3.2.2.3.1.4. SOP Specific Conformance for Retrieval SOP Classes

The Q/R-SCP AE will convey to the Storage-SCU AE that an association with a DICOM application entity title named by the external C-MOVE-SCU (through a MOVE destination AE title) should be established. It will also convey to the Storage-SCU AE to perform C-STORE operations on specific instances requested by the external C-MOVE-SCU. One or more of the Image Storage Presentation Contexts listed in tables 5 and 6 will be negotiated.

The Q/R-SCP AE does not support lists of UIDs in the C-MOVE Request.

An initial C-MOVE Response is always sent after confirming that the C-MOVE-Request itself can be processed. After this, the Q/R-SCP AE will return a response to the C-MOVE-SCU after the Storage SCU AE has attempted to send each image. This response reports the number of remaining SOP Instances to transfer and the number transferred having a successful, failed or warning status. If the composite SOP instances must be retrieved from a long-term archive (Telepaxx Storage Center) prior to the export, they will be sent asynchronously to the C-MOVE destination AE after the C-MOVE-operation has finished. This is indicated in the C-MOVE-response by setting a warning status for each SOP instance that could not be exported from the local cache. The final C-MOVE-Response contains the warning status for all SOP instances that have to be retrieved from a long-term archive. Prior responses just reflect the transfer status of composite SOP instances that reside in the cache.

Service Status	Further Meaning	Error Code	Behavior
Success	Sub-operations complete – No failures	0000	All the Composite SOP Instances that resided in the online cache have been successfully sent to the C-MOVE destination AE, For all SOP instances that have to be retrieved from a long-term archive, a request has been sent to the long-term archive and the request to send them to the C-MOVE destination AE has successfully been stored in the StoragePeak database
Refused	Move destination unknown	A801	The destination AE named in the C-MOVE request is unknown to the Q/R-SCP AE. Error message is output to the service log.
Cancel	Matching terminated doe to	FE00	The C-MOVE-SCU sent a cancel request. This has been acknowledged

	cancel request		and the export of composite SOP instances to the C-MOVE destination AE has been halted.
Pending	Sub-operations are continuing	FF00	A Response with this status code is sent every time a composite SOP instance has been successfully sent to the C-MOVE destination AE
Warning	Sub-operations are complete – one or more failures	B000	The matching is completed, but not all composite SOP instances could be transferred to the C-MOVE destination AE

Table 17: Q/R-SCP AE C-MOVE response status return behavior

3.2.3. Storage-SCP Application Entity Specification

The Storage-SCP AE provides standard conformance to the following DICOM SOP classes.

Image SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Digital Mammography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
Digital Mammography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
Digital Intra-oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	No	Yes
Digital Intra-oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	No	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	No	Yes
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	No	Yes
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	No	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	No	Yes
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	No	Yes
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	No	Yes
MR Spectroscopy Enhanced MR	1.2.840.10008.5.1.4.1.1.4.3	No	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Color Image Storage			
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	No	Yes
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	No	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	No	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	No	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	No	Yes
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	No	Yes
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	No	Yes
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	No	Yes
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	No	Yes
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	No	Yes
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	No	Yes
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	No	Yes
Intravascular Optical Coherence Tomography Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.14.1	No	Yes
Intravascular Optical Coherence Tomography Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.14.2	No	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	No	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	No	Yes
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	No	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	No	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	No	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	No	Yes

SOP Class Name	SOP Class UID	SCU	SCP
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	No	Yes
VL Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	No	Yes
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	No	Yes
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	No	Yes
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	No	Yes
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	No	Yes
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	No	Yes
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	No	Yes
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	No	Yes
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	No	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	No	Yes

Table 18: STORAGE-SCP Supported Image-Type SOP Classes

Non-ImageType SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	No	Yes
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	No	Yes
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	No	Yes
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	No	Yes
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	No	Yes
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	No	Yes
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	No	Yes
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	No	Yes
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	No	Yes
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	No	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	No	Yes
Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	No	Yes
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	No	Yes
XA/XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	No	Yes
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	No	Yes
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	No	Yes
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	No	Yes
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	No	Yes
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	No	Yes
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	No	Yes
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	No	Yes
VL Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	No	Yes
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	No	Yes
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	No	Yes
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	No	Yes
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	No	Yes
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	No	Yes
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	No	Yes
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	No	Yes
Macular Grid Thickness and Volume Report	1.2.840.10008.5.1.4.1.1.79.1	No	Yes
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	No	Yes
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	No	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	No	Yes
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	No	Yes
Procedure Log	1.2.840.10008.5.1.4.1.1.88.40	No	Yes
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	No	Yes
Key Object Selection	1.2.840.10008.5.1.4.1.1.88.59	No	Yes
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	No	Yes
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	No	Yes
Colon CAD SR	1.2.840.10008.5.1.4.1.1.88.69	No	Yes
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	No	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	No	Yes
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	No	Yes
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	No	Yes
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	No	Yes
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	No	Yes
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	No	Yes
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	No	Yes
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	No	Yes
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	No	Yes
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	No	Yes
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	No	Yes
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	No	Yes
Generic Implant Template Storage	1.2.840.10008.5.1.4.43.1	No	Yes
Implant Assembly Template Storage	1.2.840.10008.5.1.4.44.1	No	Yes
Implant Template Group Storage	1.2.840.10008.5.1.4.45.1	No	Yes

Table 19: STORAGE-SCP Supported Non-Image-Type SOP Classes

Note:

These are the default SOP classes supported. By altering the configuration it is possible to support additional or fewer SOP classes (also private ones). However, one should get in contact with Digithurst and provide some sample data to make sure that these SOP classes can be handled properly

3.2.3.1. Association policies

3.2.3.1.1. General

The Storage-SCP AE can both accept and propose association requests. The Storage SCP AE will accept association requests for the Verification, Storage and Storage Commitment Push Model Services. It will propose Associations only for the Storage Commitment Push Model Service.

The DICOM standard application context name for DICOM 3.0 is always accepted and proposed:

Application Context Name	1.2.840.10008.3.1.1.1

Table20: DICOM Application Context for STORAGE-SCP AE

3.2.3.1.2. Number of associations

The Storage-SCP AE can support multiple simultaneous associations requested by peer AEs. Each time the Storage-SCP AE receives an association, a child process will be spawned to process the Verification, Storage or Storage Commitment Push Model Service requests. The maximum number of simultaneous associations that can be processed is only limited by the system resources.

The Storage-SCP AE initiates associations for sending Storage Commitment Push Model N-EVENT-REPORTs to peer AEs. These associations are established whenever a Storage Commitment Push Model request can be answered (see below). The number of simultaneous associations to a specific Storage-Commitment-Push Model SCU AE can not be limited.

Maximum number of simultaneous associations requested by peer AEs	unlimited
Maximum number of simultaneous associations proposed by Storage-SCP AE	unlimited

Table21: Number of simultaneous associations as an SCP for STORAGE-SCP AE

3.2.3.1.3. Asynchronous nature

The Storage-SCP AE does not support asynchronous communication (multiple outstanding transaction over a single association). The Storage-SCP AE does permit an SCU to send multiple Storage Commitment Push Model requests before it has sent back any N-EVENT-

REPORT notifications. However, the Storage-SCP AE must send an N-ACTION response before permitting another N-ACTION request to be received over the same association.

Maximum number of outstanding asynchronous transactions	1 (not configurable)

Table 22: Asynchronous nature as a SCP for STORAGE-SCP AE

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

Maximum number of outstanding Storage Commitment requests for which no N-EVENT notification has been sent	unlimited

Table23: Outstanding Storage Commitment Push Model Requests for STORAGE-SCP AE

3.2.3.1.4. Implementation Identifying Information

The implementation information for this application entity is:

Implementation Class UID	1.2.826.0.1.3680043.8.297.0.4.0.0
Implementation Version Name	DH_4.0.1.10

Table24: Implementation Identifying Information for STORAGE-SCP

The version name is updated with each new release of StoragePeak, as the different AE versions are never released independently

3.2.3.2. Association Initiation Policy

The Storage Commitment Push Model N-EVENT-REPORT can be issued at three different points of time:

1. Immediately after the N-ACTION-RESPONSE was sent. The N-EVENT-REPORT reflects which of the requested SOP Instances have successfully been received and registered in the StoragePeak database. This mode is referred to as the “Immediate Mode”
2. After successful transfer of all requested SOP Instances to a long-term archive.
3. After receiving a receipt for all the requested SOP Instances from the long-term archive which indicates that the instances have successfully been transferred to a long-term backup media (Tape, optical disc, etc)

The Storage Commitment Push Model SCP AE can be configured to use one of these methods for all Storage Commitment Push Model SCU AEs. For SOP Instances that are contained in the Failed SOP Sequence of the N-EVENT-REPORT, the Storage Commitment Push Model SCU AE can not distinguish whether the SOP Instances are present in the

StoragePeak database but not yet receipted by the long-term archive or not present in the StoragePeak database at all.

3.2.3.2.1. Activity – Send Storage Commitment Notification immediately after receiving the request

3.2.3.2.1.1. Description and Sequencing of Activity

The Storage-SCP AE will always initiate a new association for each Storage Commitment Push Model N-ACTION Request it has received. It will never

- Send the N-EVENT-REPORT over the association that was requested by the Storage Commitment Push Model SCU AE to send Composite SOP Instances and/or Storage Commitment Push Model requests
- Send mutliple N-EVENT-REPORTs over an association that was initiated by the Storage-SCP AE

However, the Storage-SCP AE might send the N-EVENT-REPORT before the Association requested by the Storage Commitment Push Model SCU AE has been closed.

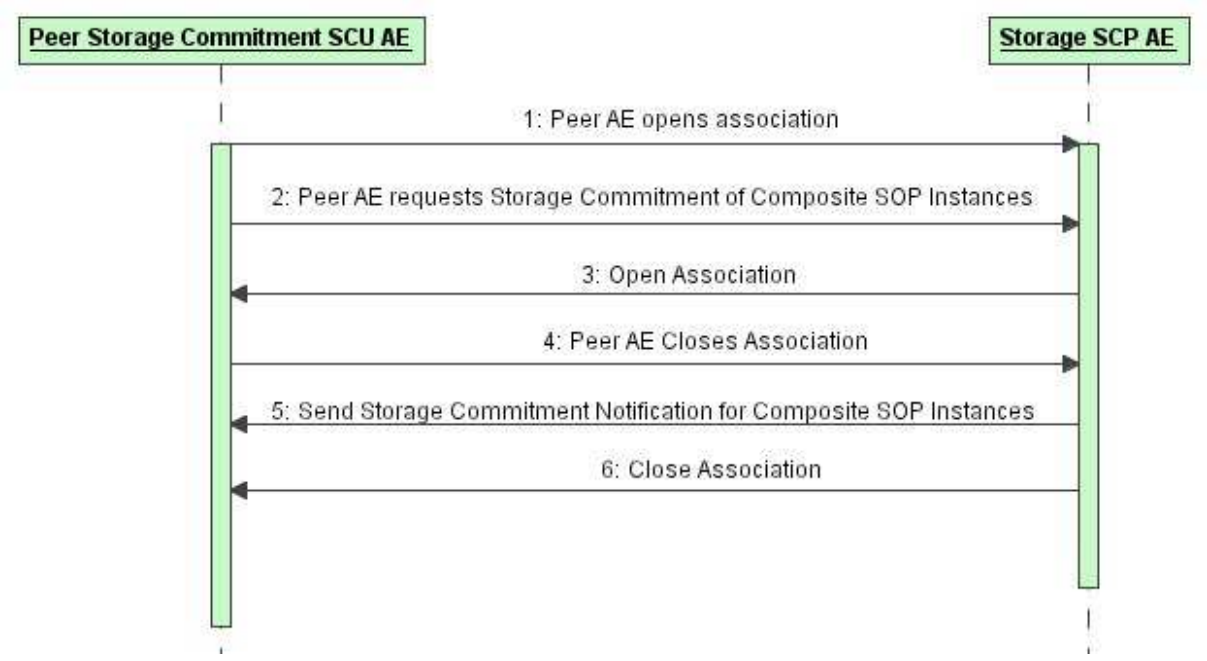

Figure 7: Sequencing of activity - Send Storage Commitment Notification immediately over new association

The following sequencing constraints illustrated in Figure 7 apply to the Storage-SCP AE for handling Storage Commitment Push Model Requests using a new association:

1. Peer AE opens an association with the Storage-SCP AE

2. Peer AE requests Storage Commitment of Composite SOP Instance(s). Peer sends N-ACTION-RQ and Storage-SCP AE responds with N-ACTION-RSP to indicate that it received and processed (i.e. stored in StoragePeak database) the request.
3. Storage SCP AE opens an association with the peer AE
4. Peer AE closes the association.
5. Storage-SCP AE sends Storage Commitment Push model Notification (N-EVENT-REPORT) for the requested composite SOP Instances
6. Storage SCP AE closes association with the peer AE

NOTE: In the “Immediate Mode” the Storage-SCP AE opens the association to the peer AE immediately after sending the N-ACTION-RESPONSE. Thus, it depends on the implementation of the Peer AE when exactly the association initiated by the Peer AE is closed.

3.2.3.2.2. Activity – Send Storage Commitment Push Model Response after successfully transferring the affected SOP Instances to long-term archive / after reception from long-term archive

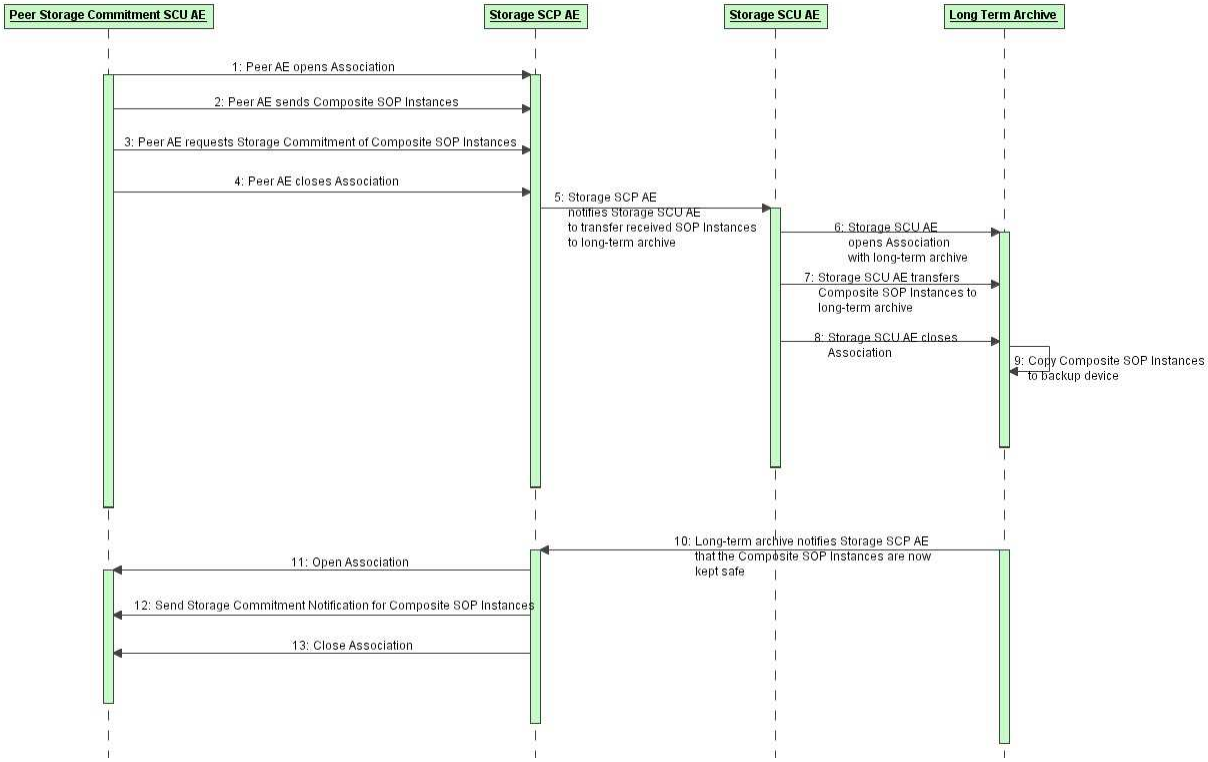

Figure 8: Sequencing of activity - Send Storage Commitment notification after transfer to / reception from long-term archive

The following sequencing constratints illustrated in Figure 8 apply to the Storage-SCP AE for handling Storage Commitment Push Model Requests when configured not to answer immediately

1. Peer opens an association with the Storage-SCP AE
2. Peer AE sends zero or more Composite SOP Instances
3. Peer AE requests Storage Commitment of Composite SOP Instance(s).
4. Peer AE closes association
5. Storage-SCP AE notifies Storage-SCU AE of the Composite SOP Instances received
6. Storage-SCU AE opens an association with the long-term archive
7. Storage-SCU AE forwards Composite SOP Instances to the long-term archive
8. Storage-SCU AE closes association with the long-term archive
9. Long-term archive copies the Composite SOP Instances received to a backup device (tape, optical disk)
10. Long-term archive notifies Storage SCP AE that the Composite SOP Instances are now kept safe
11. Storage SCP AE opens a new association with the Peer Storage Commitment SCU AE
12. Storage SCP AE sends Storage Commitment Push Model Notification request (N-EVENT-REPORT-RQ) and successfully receives Notification response (E-EVENT-REPORT-RSP) from peer AE
13. Storage-SCP AE closes association

Relating to the models explained in 3.2.3.2, Figure 8 illustrates method 3, i.e. sending the Storage Commitment response after receiving a receipt from the long-term archive. Steps 11-13 may take place immediately after step 8 (method 2).

Result	Source	Reason/Diag	Explanation
1 – rejected permanent	SCP	2 - application context name not supported	The association request contained an unsupported application context name
1 – rejected permanent	SCU	7 – called AE title not recognized	The association request contained an unrecognized called AE title.
1 – rejected permanent	SCU	3 – calling AE title not recognized	The association request contained an unrecognized calling AE title
1 – rejected permanent	SCP	1 – no reason given	The association request could not be parsed.

Table 25: Association rejection reasons

3.2.3.2.2.1. Proposed Presentation Contexts

Storage-SCP AE will propose the Presentation Contexts as shown in the following table:

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

Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Q/R Information Model FIND	1.2.840.10008.5.1.4.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Q/R Information Model FIND	1.2.840.10008.5.1.4.2.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Table 26: Proposed Presentation Contexts by the Storage-SCP AE

3.2.3.2.2.2. Accepted Presentation Contexts

The default behaviour of the Storage-SCP AE supports the Implicit VR Little Endian and Explicit VR Little Endian transfer syntaxes for all associations.

The Storage-SCP AE can be configured to accept a subset of these transfer syntaxes, with the inclusion of Implicit VR Little Endian being mandatory.

In addition to that all JPEG transfer syntaxes can be accepted except for JPEG 2000.

If multiple transfer syntaxes are proposed per presentation context then only the most preferable transfer syntax is accepted. The order of transfer syntax preference for the Storage-SCP AE is configurable.

The default preference order (top-down) if multiple transfer syntaxes are proposed in a single presentation context is:

For Image-Type SOP Classes:

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Digital Mammography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Digital Mammography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.1.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Digital Intra-oral	1.2.840.10008.5.1.4.1.1.1.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Digital Intra-oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.1.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.4.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.4.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.4.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
MR Spectroscopy Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.4.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.4.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.6.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.6.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.7.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.7.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.7.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.7.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.7.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.7.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.7.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.7.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.12.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.12.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.12.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.12.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.13.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.13.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.13.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.13.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.13.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.13.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Intravascular Optical Coherence Tomography Image Storage – For	1.2.840.10008.5.1.4.1.1.14.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.14.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.14.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Presentation					
Intravascular Optical Coherence Tomography Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.14.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.14.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.14.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.20	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Video Microscopic Image	1.2.840.10008.5.1.4.1.1.77.1.2.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.2.1	Implicit VR	1.2.840.10008.1.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Storage		Little Endian			
	1.2.840.10008.5.1.4.1.1.77.1.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.4.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.5.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.5.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.5.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	Non
Stereometric Relationshi	1.2.840.10008.5.1.4.1.1.77.1.5.3	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.5.3	Implicit VR	1.2.840.10008.1.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
p Storage		Little Endian			
	1.2.840.10008.5.1.4.1.1.77.1.5.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.5.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.5.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.77.1.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.128	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.128	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.130	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.130	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.131	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.131	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	JPEG Lossless	1.2.840.10008.1.2.4.70	SCP	None
	1.2.840.10008.5.1.4.1.1.481.1	Implicit VR	1.2.840.10008.1.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
		Little Endian			
	1.2.840.10008.5.1.4.1.1.481.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Table 27: Accepted Presentation Contexts for Image-Type SOP Classes

For Non-Image-Type SOP Classes:

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Basic Voice Audio Waveform	1.2.840.10008.5.1.4.1.1.9.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.4.1	Explicit VR	1.2.840.10008.1.2.1	SCP	None

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.Neg**
SOP Class Name	**SOP Class UID**	**Name**	**UID**		
Storage		Little Endian			
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.4.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.5.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.9.6.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.11.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.11.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.11.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
XA/XRF Grayscale Softcopy Presentation State	1.2.840.10008.5.1.4.1.1.11.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.11.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Storage					
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.66	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.66.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.66.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.66.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.66.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.66.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.67	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.78.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Autorefracti	1.2.840.10008.5.1.4.1.1.78.2	Implicit VR	1.2.840.10008.1.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
on		Little Endian			
Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.78.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.78.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.78.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.78.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.78.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.78.8	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Macular Grid Thickness and Volume Report	1.2.840.10008.5.1.4.1.1.79.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.79.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Ophthalmic	1.2.840.10008.5.1.4.1.1.80.1	Implicit VR	1.2.840.10008.1.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Visual Field Static Perimetry Measurements Storage		Little Endian			
	1.2.840.10008.5.1.4.1.1.80.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.11	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.22	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Procedure Log	1.2.840.10008.5.1.4.1.1.88.40	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.40	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.50	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Key Object Selection	1.2.840.10008.5.1.4.1.1.88.59	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.59	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.65	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
X-Ray Radiation	1.2.840.10008.5.1.4.1.1.88.67	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Colon CAD SR	1.2.840.10008.5.1.4.1.1.88.69	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.69	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.88.70	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.104.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.104.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.131	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.481.2	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.481.3	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.481.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext.Neg
SOP Class Name	SOP Class UID	Name	UID		
	1.2.840.10008.5.1.4.1.1.481.5	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.481.6	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.481.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.481.8	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.1.1.481.9	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.34.7	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Generic Implant Template Storage	1.2.840.10008.5.1.4.43.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.43.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Implant Assembly Template Storage	1.2.840.10008.5.1.4.44.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.44.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Implant Template Group Storage	1.2.840.10008.5.1.4.45.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
	1.2.840.10008.5.1.4.45.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

Table 28: Accepted Presentation Contexts for Non-Image-Type SOP Classes

3.2.3.2.2.3. SOP Specific Conformance for Verification SOP Class

The Storage-SCP AE provides standard conformance to the Verification SOP Class as an SCP

3.2.3.2.2.4. SOP Specific Conformance for Storage SOP Classes

The associated activity with the storage service is the storage of medical image data received over the network on a designated partition (usually a RAID system or HSM). The Storage-SCP AE will return a failure status if it is unable to store the images on to the hard disk.

The Storage-SCP AE does not have any dependencies on the number of associations used to send images to it. Images belonging to more than one patient, study or series can be sent over a single or multiple associations. Images belonging to a single study or series can also be sent over different associations. There is no limit on either the number of SOP instances or the maximum amount of total SOP instance data that can be transferred over a single association. There is no limit on either the number of SOP instances or the maximum amount of total SOP instance data that can be transferred over a single association.

The Storage-SCP AE is configured to retain the original DICOM data in DICOM part 10 compliant format. The Storage-SCP AE is Level 2 (full) conformant as a Storage SCP. In addition, all private and SOP Class extended elements are maintained in the DICOM format files. In addition to saving all elements in files, a subset of the elements are stored in the StoragePeak-Database to support query and retrieval requests and also allow updating of patient, study or series information by user input, or demographic and study related messages. Refer to the annex for the list of elements that are checked and/or processed upon receiving a composite SOP instance.
The configuration of the Storage-SCP AE offers a modification of DICOM attributes upon reception and before Storage to the filesystem which is dependent on the destination Application Entity Title. By default, no modifications will be performed.

If the Storage-SCP AE receives a duplicate SOP instance, it discards the file just received.

Service Status	Further Meaning	Error Code	Behaviour
Success	Success	0000	The composite SOP instance was successfully received, verified and stored in the StoragePeak database
Refused	Out of Resources	A700	Indicates that there was not enough disk space to store the image or the StoragePeak database was unavailable for registering the image
Refused	Cannot Understand	C000	The composite SOP instance contained attributes that are stored in the database

			and are not encoded in a DICOM conformant way (e.g. BodyPart exceeds 16 characters)
Error	Data Set does not match SOP class	A900	Indicates that the presentation context specified by the Storage-SCU AE clashes with the SOP Class of the DICOM object received. Error message is output to the service log.

Table 29: Storage-SCP AE C-Store Response Status Return Reasons

Exception	Reason
Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. the Storage-SCP AE is waiting for the next C-STORE-RQ on an open association but the timer expires	The association is aborted by issuing a DICOM A-ABORT. Error Message is output to the service log and to the user interface. If some composite SOP instances have been successfully received, then they are maintained in the database
Association aborted by the SCU or the network layers indicate communication loss (i.e. low-level TCP/IP socket closure)	Error message is output to the service log and user interface. If some composite SOP instances have been successfully received, then they are maintained in the database

Table 30: Storage-SCP AE Service Communication Failure Reasons

3.2.3.2.2.5. SOP Specific Conformance for Storage Commitment SOP Class

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

As described in 3.2.3.2 there are different levels of safekeeping that can be expressed by a Storage Commitment Notification issued by the STORAGE-SCP AE. It is recommended to use the default method, which is sending the N-EVENT-REPORT-RQ after the composite SOP instances have been exported to a long-term archive. However this depends on the maximum amount of time that the Storage-Commitment Push Model SCU can wait for the N-EVENT-Report-RQ after the N-ACTION-RQ has been sent and acknowledged by the Storage-SCP AE.

The Storage-Commitment-Push-Model Requests are stored in the StoragePeak database, so it is possible to transfer the Composite SOP Instances after sending the related Storage Commitment request. However, this cannot work with the Immediate Mode for obvious reasons.

In addition to the Transaction UID and the referenced SOP Instances taken from the N-ACTION-RQ, the Date/Time and Status (Success or Failure) of the last attempt to send the N-EVENT-REPORT-RQ are stored in the StoragePeak database. This enables to retry sending the N-EVENT-REPORT-RQ at later time if the transmission failed.

StoragePeak will automatically delete Composite SOP Instances for which it has got a receipt from the long-term archive if it is short of online-space. It will never delete unreceipted images but rather refuse storage of new Composite SOP Instances.

The supported Referenced SOP Classes in Storage Commitment Push Model N-ACTION and N-EVENT-REPORT messages depend on the configuration of the Storage-SCP AE. All SOP Classes that are accepted by the Storage-SCP AE can also be referenced in DIMSE messages related to a Storage Commitment Push Model transaction.

The Storage-SCP AE will return the following status code values in N-ACTION-Responses:

Service Status	Further Meaning	Error Code	Behaviour
Success	Success	0000	The SCP has successfully received and stored the Storage Commitment Push Model N-ACTION-RQ
Error	Processing Failure	0110	Indicates that the Storage Commitment Push Model N-ACTION-RQ cannot be parsed or stored due to a database or system failure

Table 31: Storage-SCP N-EVENT-Report Status Handling Behaviour

The Storage-SCP AE will exhibit the following behaviour according to the Status Code returned in an N-EVENT-REPORT-Rsp from a destination Storage Commitment Push Model SCU:

Service Status	Further Meaning	Error Code	Behaviour
Success	Success	0000	The SCU has successfully received the Storage Commitment Push Model N-EVENT-REPORT-RQ. Success indication message is output to the service logs
Warning	Attribute Error List	0107	Tramsission of Storage Commitment Push Model N-EVENT-REPORT-RQ is considered successful.
*	*	Any other Status Code	This is treated as a transient failure. Error indication message is output to the Service Logs. No message is posted to the User interface. Date and Time for the unsuccessful response are stored in the StoragePeak Database, so the Storage Commitment Push Model N-EVENT-REPORT-RQ may be sent again later.

Table 32 : Storage-SCP AE N-EVENT-REPORT Status Handling Behaviour

Exception	Behaviour
Timeout Expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. the Storage-SCP AE is waiting for the next N-ACTION-RQ on an open association but the timer expires	The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been received over the same association via the Storage Service they are maintained in the database. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the service logs and to the user interface
Timeout expiry for an expected DICOM Message Response (DIMSE level timeout). I.e. the Storage SCP AE is waiting for the next N-EVENT-REPORT response on an open association but the timer expires	The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been received over the same association via the Storage Service they are maintained in the database. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the service logs and to the user interface
Association A-ABORTed by the SCU or the network layers indicate communication loss (low level TPC/IP socket closure)	The TCP/IP socket is closed. If some Composite SOP Instances have been received over the same association via the Storage Service they are maintained in the database. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the service logs and to the user interface

Table 33 : Exception Handling

3.3. Network Interfaces

3.3.1. Physical Network Interfaces

StoragePeak supports multiple network interfaces and multiple IP addresses assigned to one network interface.

Ethernet 1000baseT
Ethernet 100baseT

Table 34 : Supported Physical Network Interfaces

StoragePeak conforms to the System Management Profiles listed in

Table . All requested transactions for the listed profiles and actors are supported it does not support any optional transactions.

Profile Name	Actor	Protocols Used	Optional Transactions	Security Support
Network Address Management	DHCP Client	DHCP	N/A	
	DNS Client	DNS	N/A	

Table 35: Supported System Management Profiles

3.3.1.1. DHCP

DHCP can be used to obtain TCP/IP network configuration information. The network parameters obtainable via DHCP are shown in the table.

DHCP Parameter	Default Value
IP Address	None
Hostname	Requested machine name
List of DNS servers	empty list
Domain name	none
Subnet mask	none
Broadcast address	none

Table 36: Supported DHCP Parameters

If no DHCP server is available, the parameters listed above can be configured with the standard tools provided by the operating system.

3.3.1.2. DNS

DNS can be used for address resolution. If DHCP is not in use or the DHCP server does not return any DHN server address, the identity of a DNS server can be configured with the standard tools provided by the operating system.

3.4. Configuration

3.4.1. AE Title/Presentation Address Mapping

3.4.1.1. Local AE Titles

All AE titles are valid for all TCP/IP addresses and ports. It is not possible to restrict a specific AE title to a specific TCP/IP address or port.

In conjunction with a Telepaxx long-term archive, at least one AE title has to follow a coding scheme containing a character sequence that uniquely identifies this specific instance of StoragePeak.

3.4.1.2. Remote AE Title / Presentation Address Mapping

The mapping of external AE titles to TCP/IP addresses and ports is configurable. This mapping is necessary for resolving the IP address and port of C-MOVE Destination

application entity titles and must be correctly configured for the QUERY-RETRIEVE-SCP AE to correctly function as a C-MOVE-SCP

3.4.2. Parameters

Parameter	Configurable	Default Value
General Parameters		
Maximum PDU size StoragePeak can receive	Yes	16 kBytes
Maximum PDU size StoragePeak can send	Yes	16 kBytes
Timeout waiting for response to TCP/IP connect request (low level timeout)	Yes	30 seconds
Timeout waiting for A-Associate-RQ-PDU on open TCP/IP connection	Yes	30 seconds
Timeout waiting for acceptance or rejection response to an association open request	Yes	30 seconds
Timeout for waiting for data between TCP/IP packets	No	unlimited
STORAGE-SCU AE Parameters		
Maximum number of simultaneous Associations for a specific remote STORAGE-SCP AE	Yes	unlimited
Storage-SCU AE time-out waiting for a response to a C-STORE-RQ (DIMSE timeout)	Yes	unlimited
Storage-SCU AE number of times a failed send job to a C-MOVE destination is automatically retried	No	0
STORAGE-SCP AE Parameters		
Maximum PDU size	Yes	16 kBytes
Maximum number of simultaneous associations	No	unlimited
STORAGE-SCP AE time-out waiting on an open association for the next request message (C-STORE-RQ, A-RELEASE-RQ, etc.)	Yes	unlimited
Always open a new association to send a Storage Commitment Push Model Notification Request (N-EVENT-REPORT-RQ)	No	true
Maximum number of times to attempt sending a Storage Commitment Push Model N-EVENT-REPORT Request when an error status is returned or communication failure occurs	No	unlimited

QUERY-RETRIEVE-SCP AE Parameters		
Maximum PDU Size	Yes	16 kBytes
Maximum number of simultaneous associations	No	unlimited
STORAGE-SCP AE time-out waiting on an open association for the next request message (C-MOVE-RQ, A-RELEASE-RQ, etc.)	Yes	30 seconds

Table 37: Configuration Parameters

4. Annex A – Changing Demographic data in the database

This annex describes attributes can be changed either by the Web Interface or by HL7 messaging (PIR). Please refer to the Storage Peak HL7 Interface Specification for further information about the StoragePeak HL7 Interface. When patient demographic information is changed or studies/series are assigned to different patients/studies, the SOP instances stored on the local file system or in the long-term-archive are not touched. Instead of this, only the database information is changed. The Storage SCU AE uses these information when sending SOP instances to a remote Storage SCP AE and applies them “on-the-fly” before sending the instances.

4.1. Re-assignments

Studies can be re-assigned to other patients and series can be re-assigned to other studies (and thus to other patients) in order to correct failures that have been made during image acquisition. To avoid reference documents (e.g. SR) losing their references, the UIDs are never changed. As a result of this, in case of changing a series-to-study assignment it is possible to split a series into two different studies belonging to two different patients although they still have the same Study Instance UID.

4.2. Changing DICOM Attributes

The following DICOM attributes can be changed in the database, and these changes are applied to the SOP instances by the Storage SCU AE before sending them to a remote Storage SCP AE:

Table 38: Attributes that can be changed in the database

5. Annex B – Information retrieved from the DICOM headers and maintained in the database

Level Name **Attribute Name**	**Tag**	**VR**
SOP Common Specific Character Set	0008,0005	CS
Patient Level Patient's Name Patient ID Patient's Birth Date Patient's Sex Patient's Age Patient's Size Patient's Weight	 0010,0010 0010,0020 0010,0030 0010,0040 0010,1010 0010,1020 0010,1030	 PN LO DA CS AS DS DS
Study Level Study Date Study Time	 0008,0020 0008,0030	 DA TM

Accession Number	0008,0050	SH
Study ID	0020,0010	SH
Study Instance UID	0020,000D	UI
Referring Physicians Name	0008,0090	PN
Study Description	0008,1030	LO
Admission ID	0038,0010	LO
Series Level		
Modality	0008,0060	CS
Series Number	0020,0011	IS
Series Instance UID	0020,000E	UI
Series Date	0008,0021	DA
Series Time	0008,0030	TM
Body Part Examined	0018,0015	CS
Image Level		
SOP Class UID	0008,0016	UI
SOP Instance UID	0008,0018	UI
Photometric Interpretation	0028,0004	CS
Instance Number	0020,0013	IS
Content Date	0008,0023	DA
Content Time	0008,0033	TM

Table 39: Information retrieved from DICOM headers for Database registration