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Unified Clinical Archive Version 11.2
DICOM Conformance Statement

Version: 1.3

Date: FEB 27, 2023

REVISION HISTORY

Version	Effective Date (DD/MM /YYYY)	Brief Description of Change	Affected Section(s)	Prepared By	Reviewed By	Approved By
1.0	JUN 15, 2020	Initial Release		MaryAnn Erickson/ Lubna Merchant	Lubna Merchant	Joe Murray
1.1	DEC 10, 2021	Updated branding and copyright to ISO, v11 changes	All	Brian Sullivan	Maryann Erickson	Joe Murray
1.2	AUG 20, 2022	v11.1 changes		Brian Sullivan		
1.3	FEB 27, 2023	v11.2 changes		Brian Sullivan		

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1 Conformance Statement Overview

The Unified Clinical Archive (UCA), is the secure DICOM storage and retrieval system of InsiteOne LLC. UCA is intended to receive patient and image data over the network and store it for retrieval. UCA conforms to the DICOM standard to allow medical information to be shared.

Table 1-1: Network Services

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer		
Computed Radiography Image Storage	Yes	Yes
Digital XRay Image Storage For Presentation	Yes	Yes
Digital XRay Image Storage For Processing	Yes	Yes
Digital Mammography XRay Image Storage For Presentation	Yes	Yes
Digital Mammography XRay Image Storage For Processing	Yes	Yes
Digital Intra Oral XRay Image Storage For Presentation	Yes	Yes
Digital Intra Oral XRay Image Storage For Processing	Yes	Yes
CT Image Storage	Yes	Yes
Enhanced CT Image Storage	Yes	Yes
Ultrasound Multi Frame Image Storage Retired	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
Enhanced MR Color Image Storage	Yes	Yes
Nuclear Medicine Image Storage Retired	Yes	Yes
Ultrasound Image Storage Retired	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
Multi Frame Grayscale Word Secondary Capture Image Storage	Yes	Yes
Multi Frame TrueColor Secondary Capture Image Storage	Yes	Yes
Standalone Overlay Storage	Yes	Yes
Standalone Curve Storage	Yes	Yes
Waveform Storage Trial	Yes	Yes

Table 1-1: Network Services		
SOP Classes	**User of Service (SCU)**	**Provider of Service (SCP)**
Twelve 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
XRay Angiographic Image Storage	Yes	Yes
Enhanced XA Image Storage	Yes	Yes
XRay Radiofluoroscopic Image Storage	Yes	Yes
Enhanced XRF Image Storage	Yes	Yes
XRay 3D Angiographic Image Storage	Yes	Yes
XRay 3D Craniofacial Image Storage	Yes	Yes
Breast Tomosynthesis Image Storage	Yes	Yes
Breast Projection XRay Image Storage For Presentation	Yes	Yes
XRay Angiographic Bi Plane Image Storage	Yes	Yes
Nuclear Medicine Image Storage	Yes	Yes
Raw Data Storage	Yes	Yes
Spatial Registration Storage	Yes	Yes
Spatial Fiducials Storage	Yes	Yes
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

Table 1-1: Network Services		
SOP Classes	**User of Service (SCU)**	**Provider of Service (SCP)**
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
Video Photographic Image Storage	Yes	Yes
Ophthalmic Photography 8Bit Image Storage	Yes	Yes
Ophthalmic Photography 16Bit Image Storage	Yes	Yes
Stereometric Relationship Storage	Yes	Yes
Ophthalmic Tomography Image Storage	Yes	Yes
VL Whole Slide Microscopy Image 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
Macular Grid Thickness And Volume Report Storage	Yes	Yes
Basic Text SR Storage	Yes	Yes
Enhanced SR Storage	Yes	Yes
Comprehensive SR Storage	Yes	Yes
Procedure Log Storage	Yes	Yes
Mammography CAD SR Storage	Yes	Yes
Key Object Selection Document Storage	Yes	Yes
Chest CAD SR Storage	Yes	Yes
XRay Radiation Dose SR Storage	Yes	Yes
Colon CAD SR Storage	Yes	Yes
Encapsulated PDF Storage	Yes	Yes
Encapsulated CDA Storage	Yes	Yes
Encapsulated OBJ Storage	Yes	Yes
Encapsulated MTL 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

Table 1-1: Network Services		
SOP Classes	**User of Service (SCU)**	**Provider of Service (SCP)**
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
Hanging Protocol Storage	Yes	Yes
Color Palette Storage	Yes	Yes
Encapsulated STL Storage	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage For Presentation	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage For Processing	Yes	Yes
Comprehensive 3D SR Storage	Yes	Yes
Extensible SR Storage	Yes	Yes
Radiopharmaceutical Radiation Dose SR Storage	Yes	Yes
Implantation Plan SR Storage	Yes	Yes
Acquisition Context SR Storage	Yes	Yes
Simplified Adult Echo SR Storage	Yes	Yes
Planned Imaging Agent Administration SR Storage	Yes	Yes
Performed Imaging Agent Administration SR Storage	Yes	Yes
Practice Builder Report Text	Yes	Yes
Practice Builder Report Dictation	Yes	Yes
GE Private CT Image Storage	Yes	Yes
GE Private Display Image Storage	Yes	Yes
GE Private MR Image Storage	Yes	Yes
GE Private 3D Model	Yes	Yes
GE Private Nuclear Medicine	Yes	Yes
Philips Private Specialized X-Ray Image Storage	Yes	Yes
Philips Private 3D Presentation State	Yes	Yes
Philips Private Gyroscan MR Series Data	Yes	Yes

Table 1-1: Network Services		
SOP Classes	**User of Service (SCU)**	**Provider of Service (SCP)**
Query/Retrieve		
Patient Root Q/R FIND	Yes	Yes
Study Root Q/R FIND	Yes	Yes
Patient Root Q/R MOVE	Yes	Yes
Study Root Q/R MOVE	Yes	Yes
Patient Root Q/R GET	Yes	Yes
Study Root Q/R GET	Yes	Yes
Workflow Management		
Storage Commitment Push Model	Yes	Yes
Modality Performed Procedure Step	Yes	Yes
Modality Worklist Find	Yes	No

2 Introduction

This chapter provides information about the purpose, scope and contents of the Unified Clinical Archive DICOM Conformance Statement.

2.1 Audience

This document is intended for potential clients, system integrators and software designers interested in acquiring and working with the InsiteOne Unified Clinical Archive (UCA). The document assumes familiarity with the DICOM Standard as defined by ACR-NEMA. It should be interpreted in conjunction with the published standard.

2.2 Remarks

The Unified Clinical Archive is a product of InsiteOne LLC. The DICOM application will evolve in the future to meet user requirements and to incorporate new features and technologies. InsiteOne LLC plans to adapt its software to future versions of the DICOM standard. This may result in changes to the support of the communications features listed in this Conformance Statement. The user should ensure that other devices conform to the evolving standard. Failure to do so could result in the loss of function and/or connectivity.

InsiteOne LLC reserves the right to make changes to its products or to discontinue its delivery. This Conformance Statement by itself does not guarantee successful interconnection. It is the responsibility of the user to carry out additional validation tests to ensure the functionality, performance, accuracy and stability of the transmitted image and patient data.

InsiteOne LLC will make every effort to keep the Unified Clinical Archive Product backwards compatible with previous versions of the product and continue to support retired DICOM capabilities where feasible.

InsiteOne LLC participates in testing sponsored by Integrated Healthcare Enterprise (IHE) and the Unified Clinical Archive Integration Statement can be found on our Website.

2.3 Definitions and Terms

Big Endian: A form of byte ordering where multiple byte binary values are encoded with the most significant byte encoded first; and the remaining bytes encoded in decreasing order of significance.

Data Element Tag: A unique identifier for a Data Element composed of an ordered pair of numbers (a Group Number followed by an Element Number). Sometimes the word “Tag” is used to indicate a Data Element Tag.

Little Endian: A form of byte ordering where multiple byte binary values are encoded with the least significant byte encoded first; and the remaining bytes encoded in increasing order of significance.

Pixel Data: Graphical data (e.g. images or overlays) of variable pixel-depth encoded in the Pixel Data Element.

Presentation Context: A specific SOP Class and a list of Transfer Syntaxes supported by an Application Entity for that SOP Class.

Private Data Element: Additional Data Element, defined by an implementer, to communicate information that is not contained in Standard Data Elements.

Security Profile: A set of mechanisms, such as encryption, user authentication, or digital signatures, used by an Application Entity to ensure confidentiality, integrity, and/or availability of exchanged DICOM data.

Service Class: A collection of SOP Classes which are related in that they are described together to accomplish a single application.

Service Class Provider: The role played by a DICOM Application Entity which performs operations and invokes notifications on a specific Association.

Service Class User: The role played by a DICOM Application Entity which invokes operations and performs notifications on a specific Association.

Service-Object Pair (SOP) Class: The union of a specific set of DIMSE Services and one related Information Object Definition (as specified by a Service Class Definition) which completely defines a precise context for communication.

Service-Object (SOP) Instance: A concrete occurrence of an Information Object and a communication context. The word “Instance” is sometimes used to indicate an SOP Instance. This Conformance Statement sometimes uses the abbreviation IOD to indicate an SOP Instance.

Standard Data Element: A Data Element defined in the DICOM Standard, and therefore listed in the DICOM Data Element Dictionary in PS 3.6.

Transfer Syntax: A set of encoding rules that allow Application Entities to unambiguously negotiate the encoding techniques (e.g. Data Element structure, byte ordering, compression, etc.) they are able to support, thereby allowing these Application Entities to communicate.

Unique Identifier: A string of characters that uniquely identifies a wide variety of items; guaranteeing uniqueness across multiple countries, sites, vendors and equipment

2.4 Abbreviations

ACR: American College of Radiology

AE: Application Entity

AES: Advanced Encryption Standard

AET: Application Entity Title

ASCII: American Standard Code for Information Interchange

CBC: Cipher Block Chaining

DES: Data Encryption Standard

DHCP: Dynamic Host Configuration Protocol

DICOM: Digital Imaging and Communications in Medicine

DIMSE: DICOM Message Service Element

DMWL: DICOM Modality Worklist

DNS: Domain Name System

EDE: Encrypt-Decrypt-Encrypt

HIS: Hospital Information System

HL7: Health Level 7 Standard

IEEE: Institute of Electrical and Electronics Engineers

IETF: Internet Engineering Task Force

IHE: Integrating the Healthcare Enterprise

IOD: Information Object Definition

IPv4: Internet Protocol version 4

IPv6: Internet Protocol version 6

JPEG: Joint Photographic Experts Group

LDAP: Lightweight Directory Access Protocol

MPEG: Motion Picture Experts Group

MPPS: Modality Performed Procedure Step

MWL: Modality Worklist

NEMA: National Electrical Manufacturers Association

PACS: Picture Archiving and Communication System

PDU: Protocol Data Unit

RAID: Redundant Array of Independent Disks

RIDS: Retrieve Information for Display

RLE: Run Length Encoding

RFC: Request For Comment (used by standards issued by the IETF)

RSA: Rivest-Shamir-Adleman

RSNA: Radiological Society of North America

SCP: Service Class Provider

SCU: Service Class User

SHA: Secure Hash Algorithm

SOP: Service Object Pair

SSH: Secure Shell

SSL: Secure Sockets Layer

TCP/IP: Transmission Control Program/Internet Protocol

TLS: Transport Layer Security

UID: Unique Identifier

VM: Value Multiplicity

VR: Value Representation

WADO: Web Access to DICOM Objects

2.5 References

NEMA PS3: Digital Imaging and Communications in Medicine (DICOM) Standard, available free at http://medical.nema.org.

3 Networking

3.1 Implementation Model for the Unified Clinical Archive

The Unified Clinical Archive Stores and Retrieves DICOM instances.

3.1.1 Application Data Flow Diagram

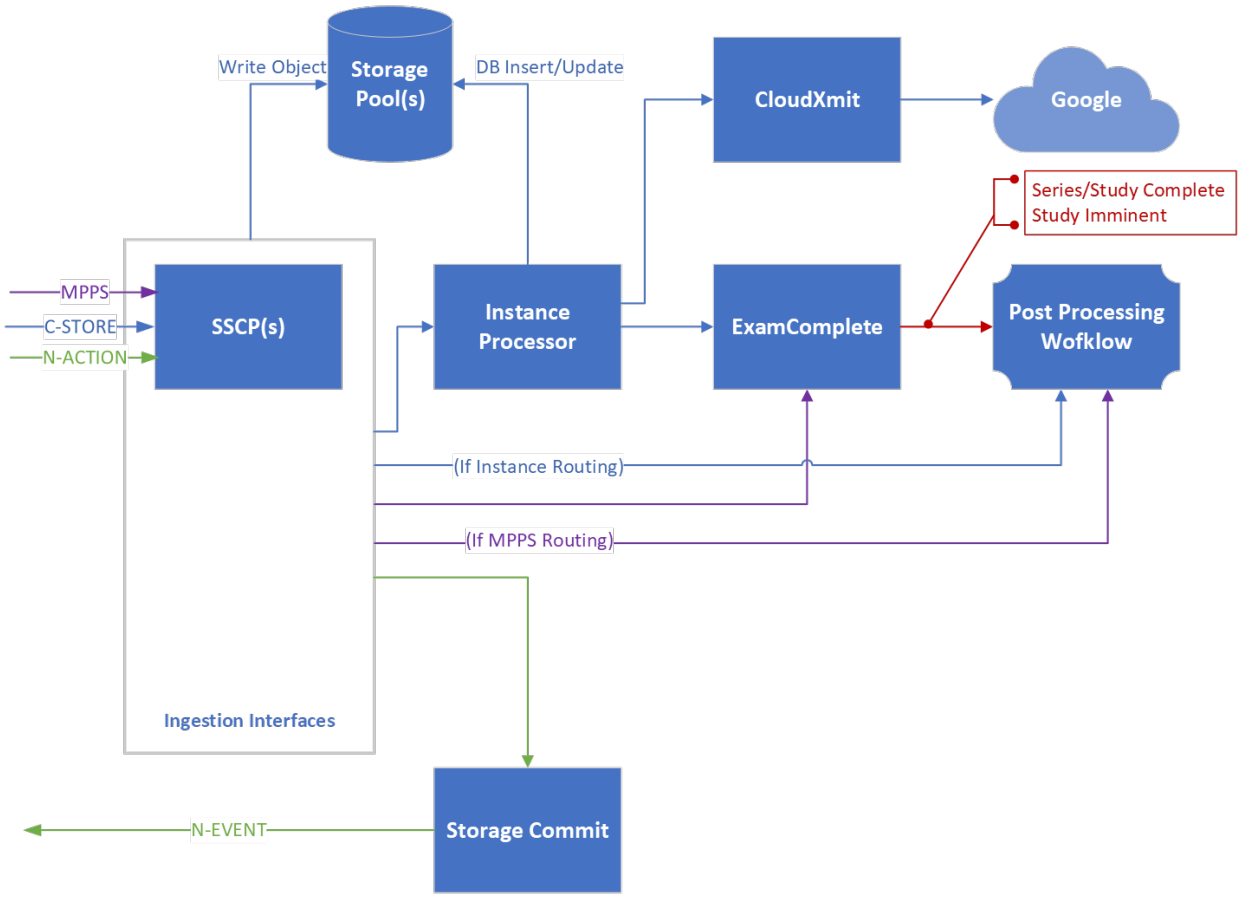

Figure 3-1.1 Unified Clinical Archive Storage Implementation Model Part 1

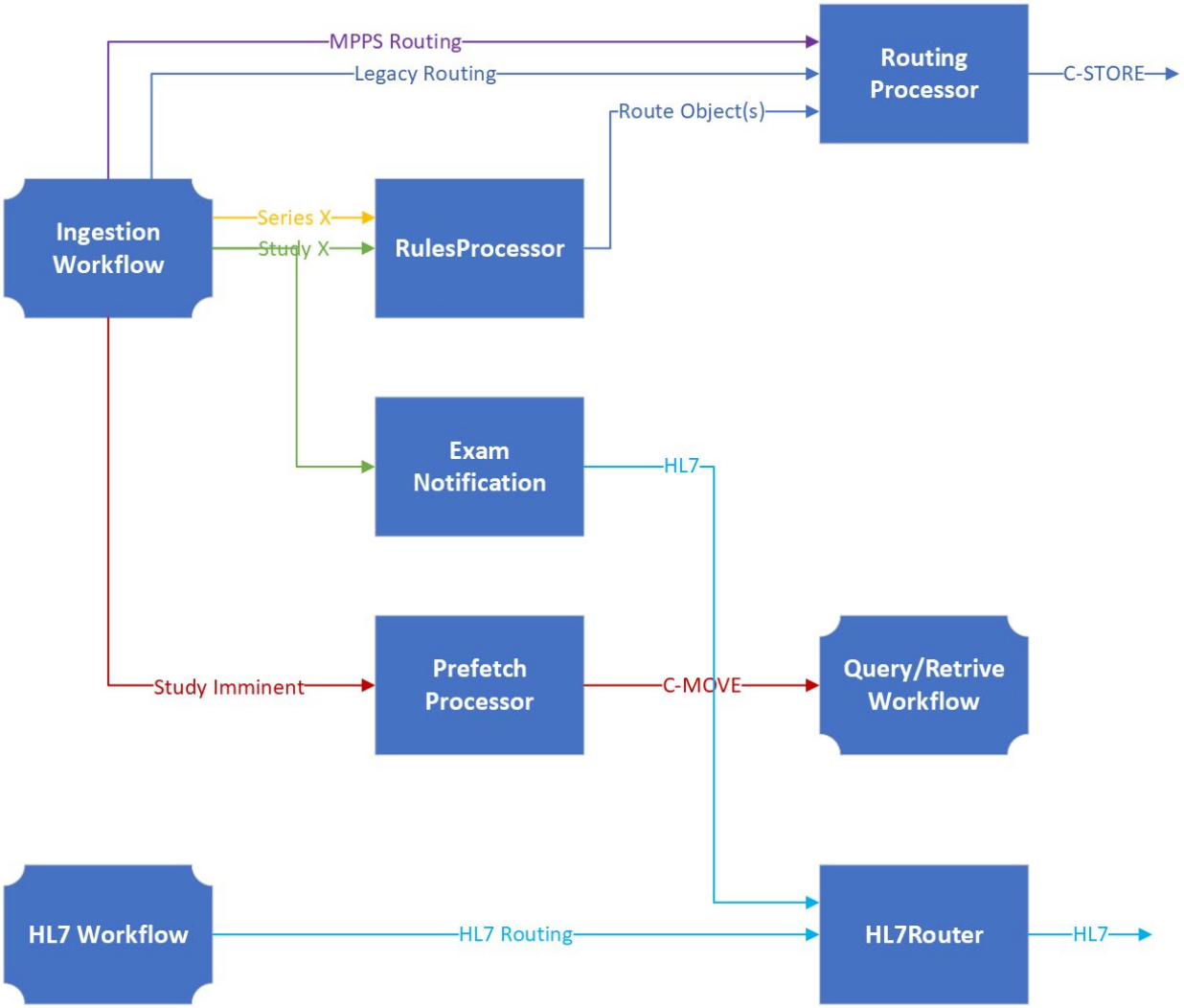

Figure 3-2.2 Unified Clinical Archive Storage Implementation Model Part 2

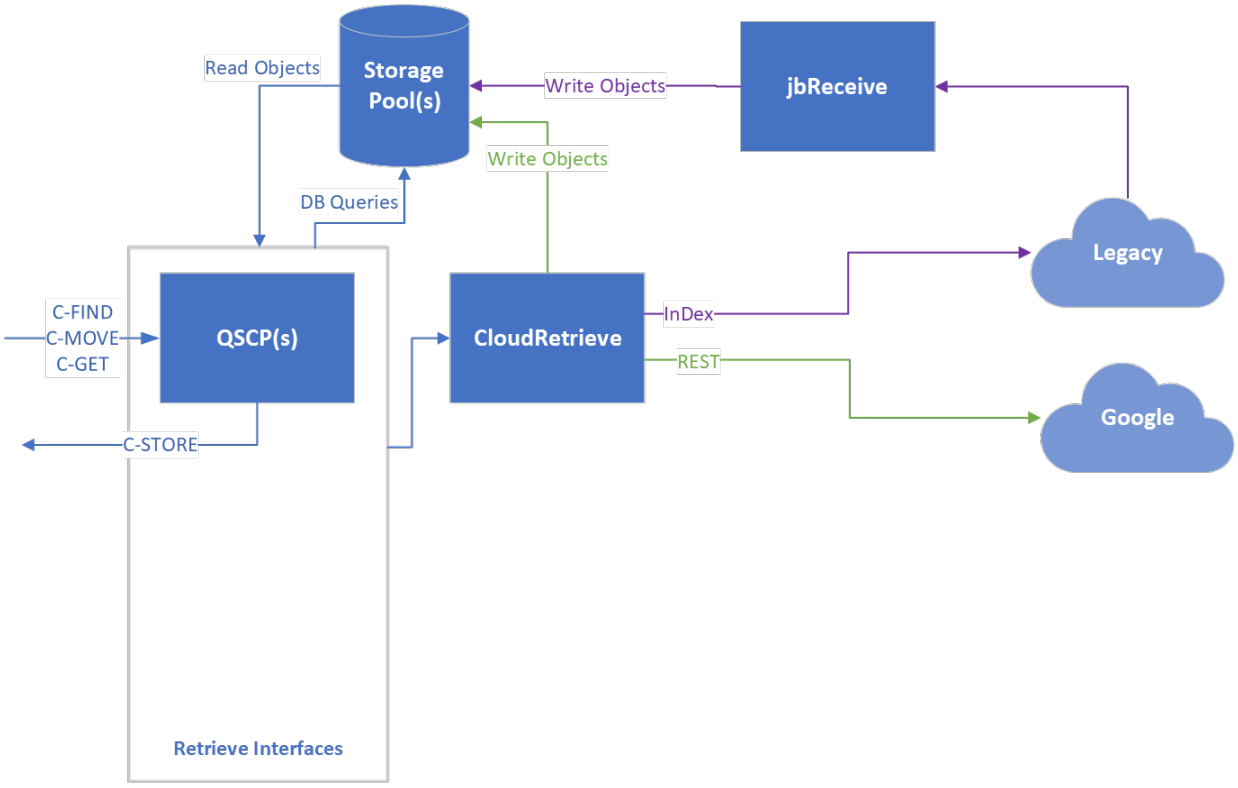

Figure 3-3. Unified Clinical Archive Query/Retrieve Implementation Model

A Remote AE (e.g. a modality such as a CT or a workstation) sends one or more IOD Store Requests (usually a Study) to the ucaSSCP AE. The ucaSSCP AE stores the IOD on its local RAID/SAN and adds an entry to its Database for each IOD. This Database is used by the ucaQSCP AE. In the background, the Unified Clinical Archive will forward IOD's to one of UCA remote Data Centers where they will be transferred to long term storage for near term retrieval by the ucaQSCP AE.

When the ucaSSCP AE receives IOD's it can forward them to other Remote AE's based on configuration parameters using the ucaSSCU AE or ucaSSCU AE.

The Remote AE can send Storage Commitment Requests of those IOD's to the ucaSSCP AE. The ucaSSCP AE will wait for the IOD's to arrive at an UCA Data Center before it takes action on the Storage Commit request. The ucaSSCP AE will then send the results of the Storage Commit Request back to the requesting Remote AE.

A Modality can send MPPS messages to the ucaSSCP AE, which will forward the messages to an Order Filler.

After IOD's have been received and entered into the Database, an AE can send a Query/Retrieve Request to the ucaQSCP AE to examine these IOD's. If the AE requests retrieval of IOD's, the ucaQSCP AE retrieves those IOD's, either locally or from a- UCA Data Center, and sends them to the specified Destination AE in the case of a C-MOVE-RQ or to the requesting AE in the case of a C-GET-RQ using its DICOM Storage Service.

The ucaQSCP AE can be configured to send Modality Worklist Queries to a Modality Worklist Server.

Any Remote AE can verify the operational readiness and capabilities of either the ucaSSCP AE or the ucaQSCP AE by using their DICOM Verification Services.

3.1.2 Functional Definitions of Application Entities

The Unified Clinical Archive has the following Application Entities (AE's) which act as a Storage Service Class Provider and User, a Storage Commitment Provider, a Procedure Step SOP Class Provider and User, a Basic Worklist Management Service Class User and a Query/Retrieval Provider.

3.1.2.1 ucaSSCP Application Entity

The ucaSSCP AE provides the Storage, Storage Commitment, Procedure Step SOP Class and Verification DICOM Services.

3.1.2.2 ucaSSCU Application Entity

The ucaSSCU AE use Storage Services to forward IOD's to Remote AE's (e.g. display stations and workstations) based on the configuration information.

3.1.2.3 ucaQSCP Application Entity

The ucaQSCP AE provides the Query/Retrieval, Basic Worklist Management and Verification DICOM Services to find Patients, Studies, Series and Instances in the Unified Clinical Archive Database and forward the requested IOD's to a Destination AE or the requesting AE using the DICOM Storage Service.

3.1.3 Sequence of Real World Activities

A Storage Commitment Request can be sent on the same Association as the Store Request or later on a separate association.

The ucaSSCP AE will not send a Response to a Storage Commitment Request until the requested IOD's are sent to a UCA Data Center or Cloud location. This normally will occur within a few hours but could take an extended period of time depending on configuration. The N-EVENT-REPORT message will be sent back on a new association.

A Modality Performed Procedure Step message can be sent on the same Association as a Store Request or on a separate Association. The ucaSSCP AE will forward the MPPS message to an Order Filler.

A Query/Retrieve Request cannot retrieve a Study until after it has been entered in the Database which occurs sometime after the Originating AE sends the study and the Association is released.

The ucaQSCU AE can send Modality Worklist queries to a Modality Worklist Server.

3.2 Application Entity Specifications

3.2.1 ucaSSCP Application Entity – Specification

3.2.1.1 SOP Classes

The ucaSSCP AE provides standard conformance to the DICOM V3.0 SOP Classes listed in Table 3 1 as an SCP. See DICOM v3.0 PS 3.4 Appendices A, B, F and J for detailed specifications of the Verification, Storage, Procedure Step SOP Class and Storage Commitment Services.

Table 3-1: SOP Classes Supported by the ucaSSCP AE

SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes
Digital XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
Digital XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Digital Mammography XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
Digital Mammography XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
Digital Intra Oral XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	No	Yes
Digital Intra Oral XRay 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 Retired	1.2.840.10008.5.1.4.1.1.3	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
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	No	Yes
Nuclear Medicine Image Storage Retired	1.2.840.10008.5.1.4.1.1.5	No	Yes
Ultrasound Image Storage Retired	1.2.840.10008.5.1.4.1.1.6	No	Yes
Ultrasound Image Storage	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 TrueColor Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	No	Yes
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	No	Yes
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	No	Yes
Waveform Storage Trial	1.2.840.10008.5.1.4.1.1.9.1	No	Yes
Twelve 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

Table 3-1: SOP Classes Supported by the ucaSSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
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
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
XRay 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
XRay 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
XRay 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	No	Yes
XRay 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
Breast Projection XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	No	Yes
XRay Angiographic Bi Plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	No	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	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 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
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	No	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	No	Yes
Ophthalmic Photography 8Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	No	Yes
Ophthalmic Photography 16Bit 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

Table 3-1: SOP Classes Supported by the ucaSSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	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
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	No	Yes
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	No	Yes
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	No	Yes
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	No	Yes
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	No	Yes
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	No	Yes
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	No	Yes
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	No	Yes
XRay Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	No	Yes
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	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
Encapsulated OBJ Storage	1.2.840.10008.5.1.4.1.1.104.4	No	Yes
Encapsulated MTL Storage	1.2.840.10008.5.1.4.1.1.104.5	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
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
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	No	Yes
Color Palette Storage	1.2.840.10008.5.1.4.39.1	No	Yes
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	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
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	No	Yes

Table 3-1: SOP Classes Supported by the ucaSSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	No	Yes
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	No	Yes
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	No	Yes
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	No	Yes
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	No	Yes
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	No	Yes
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	No	Yes
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	No	Yes
Verification	1.2.840.10008.1.1	No	Yes

The ucaSSCP AE provides standard conformance to the Private SOP Classes listed in Table 3 2 as an SCP.

Table 3-2: Private SOP Classes Supported by the ucaSSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Practice Builder Report Text	1.2.826.0.1.3680043.2.93.1.0.1	No	Yes
Practice Builder Report Dictation	1.2.826.0.1.3680043.2.93.1.0.2	No	Yes
GE Private CT Image Storage	1.2.840.113619.4.3	No	Yes
GE Private Display Image Storage	1.2.840.113619.4.4	No	Yes
GE Private MR Image Storage	1.2.840.113619.4.2	No	Yes
GE Private 3D Model	1.2.840.113619.4.26	No	Yes
GE Private Nuclear Medicine	1.2.840.113619.4.27	No	Yes
Philips Private Specialized X-Ray Image Storage	1.3.46.670589.2.3.1.1	No	Yes
Philips Private 3D Presentation State	1.3.46.670589.2.5.1.1	No	Yes
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	No	Yes
Siemens Private Syngo CSA Non-Image Storage	1.3.12.2.1107.5.9.1	No	Yes

3.2.1.2 Association Policies

3.2.1.2.1 General

The maximum number of Presentation Contexts which can be offered is 128. The maximum PDU length offered/accepted is configurable. The default is 524288 bytes.

The DICOM standard application context name for DICOM 3.0 is always proposed

3.2.1.2.2 Number of Associations

The ucaSSCP AE supports multiple Associations at one time. The limit is based on the size of the Unified Clinical Archive and how many Associations the ucaQSCP AE has opened. This limit is typically 25 on a small Unified Clinical Archive Configuration.

The ucaSSCP AE is limited to 5 pending Association Requests. Once an Association is negotiated and accepted it is no longer pending and not counted in this limit.

Table 3-3: Number of Associations Accepted for ucaSSCP AE	
Maximum number of simultaneous connections	25

Table 3-4: Number of Associations Initiated by ucaSSCP AE	
Maximum number of simultaneous connections	25

3.2.1.2.3 Asynchronous Nature

The ucaSSCP AE does not support asynchronous operations and will not perform asynchronous window negotiation.

3.2.1.2.4 Implementation Identifying Information

Table 3-5: DICOM Implementation Class and Version for ucaSSCP AE	
Implementation Class UID	2.16.840.1.114107.1.1.1.x.x
Implementation Version Name	UCA_SSCP

3.2.1.3 Association Initiation Policy

3.2.1.3.1 Storage Commitment Results are Available

3.2.1.3.1.1 Description and Sequencing of Activities

When all the DICOM Files referenced by a pending Storage Commit Request have been forwarded to a UCA Data Center or found not to exist, a response to the Commit Request is formulated and the ucaSSCP AE attempts to send an N-EVENT-REPORT to the requesting Remote AE on a new association. If it is unable to send the results to the Remote AE, it will periodically retry to initiate the Association. It will give up after 7 days (or some other limit as configured).

3.2.1.3.1.2 Proposed Presentation Contexts

Table 3-6: Proposed Presentation Contexts for Storage Commitment SOP Class

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Storage Commitment Push Model	1.2.840.10008.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

3.2.1.3.1.2.1 Conformance to Storage Commit Push Model SOP Class (SCP)

Although the ucaSSCP AE is initiating the Association, it uses Role Negotiation to indicate that it is the Provider (SCP) and not the User (SCU). The results of a Storage Commitment Request will always be sent on a separate Association and not on an Association initiated by a Storage Commitment SCU.

The Storage Media File Set ID attributes (0008,1150) and (0008,1155) are not supported. The Retrieve AE attribute (0008,0054) is not supported. See Section 3.2.1.4 (Association Acceptance Policy) for the remaining conformance issues.

If the ucaSSCP AE is unable to connect to the Originating AE then the ucaSSCP AE will periodically retry to connect to the Originating AE for up to 7 days (a configurable limit).

If an error status is given in the N-EVENT-REPORT-RSP, this error will be logged and no attempt will be made to resend the transaction. This is usually caused by an expired Transaction UID.

The only Failure Reason (0008,1197) ever given by the ucaSSCP AE is 0112H (No Such Object Instance) which indicates the requested SOP Instance UID was not in the Unified Clinical Archive Database and thus never successfully received by the ucaSSCP AE. The recommended action is to resend the IOD with that SOP Instance UID. The ucaSSCP AE does not verify that the SOP class corresponds to the SOP Instance UID (Failure Reason 0119H). A duplicate Transaction UID is reported when the N-ACTION-RQ is sent with an N-ACTION-RSP error status of 0210H (Duplicate Invocation) rather than as failure reason 0131H (Duplicate Transaction UID).

3.2.1.3.2 Forwarding is Specified for the Originating AE

3.2.1.3.2.1 Associated Real World Activity

The ucaSSCP AE will initiate an instance of the ucaSSCU AE to forward the IOD's received from the Originating AE to a Destination AE, as configured. The ucaSSCU AE is initiated with a retry option based on configuration parameters.

The IOD's forwarded will be for one series or one study. There is no guarantee that the IOD's represent a complete study or that they will be delivered in any particular order.

3.2.1.3.3 Forwarding Modality Performed Procedure Step (MPPS) Requests

3.2.1.3.3.1 Associated Real World Activity

When the ucaSSCP AE receives an MPPS Request it will attempt to forward the request to an Order Filler. If ucaSSCP AE is unable to forward the MPPS Request, it will periodically retry to initiate the Association.

3.2.1.3.3.2 Proposed Presentation Contexts

Table 3-7: Proposed Presentation Contexts for MPPS SOP Class

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

3.2.1.4 Association Acceptance Policy

3.2.1.4.1 Remote AE Sends a Verification Request

3.2.1.4.1.1 Associated Real World Activity

A Remote AE sends a Verification Request (C-ECHO-RQ) to the ucaSSCP AE which always responds with a status of zero (0).

3.2.1.4.1.2 Accepted Presentation Context

Table 3-8: Acceptable Presentation Contexts for ucaSSCP and Verification Request

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

The ucaSSCP AE will accept any Presentation Context for the Verification SOP Class which proposes "Explicit VR Little Endian" or "Implicit VR Little Endian" as a Transfer Syntax. Any other Presentation Contexts for the Verification SOP Class will be rejected. If more than one Presentation Context is accepted, the SCU can choose which Presentation Context to use.

3.2.1.4.1.2.1 Conformance to Verification Push Class (SCP)

The Verification Service conforms to the DICOM V3.0 Standard.

Table 3-9: Verification Response Status

Service Status	Further Meaning	Error Code	Reason
Success	Success	0	The status in a C-ECHO-RSP is always 0 (success).

3.2.1.4.2 Remote AE sends an IOD Store Request

3.2.1.4.2.1 Associated Real World Activity

The ucaSSCP AE will give preference to “JPEG Lossless” over “JPEG 2000 Lossless” for a compressed Transfer Syntax and “Explicit VR Little Endian” over “Implicit VR Little Endian” for an uncompressed Transfer Syntax.

A Remote AE (SCU) sends a DICOM Store Request (C-STORE-RQ) to the ucaSSCP AE for one or more IOD’s (e.g. SOP Instances). Usually, all the IOD’s sent in one Association are for a single study, but this is not a requirement. If the IOD is sent using an accepted encoding (e.g. JPEG Lossless, RLE, etc.) then the IOD will be stored unchanged using that encoding. If the IOD is sent uncompressed then it is compressed using JPEG-LS. Prior to saving the file to disk the instance is validated against the DICOM standard and if applicable decompression libraries. The ucaSSCP AE stores the object in a DICOM compatible file with the group 0002 preamble populated on a local RAID/SAN. A success is reported to the Remote AE if the IOD is successfully stored. The Remote AE can also send Storage Commit Requests on the same Association.

After the Remote AE has sent all the IOD’s and released the connection, or after an IOD has arrived with a new Patient Name, then the received IOD’s are added to the Database on the Unified Clinical Archive. A replacement policy is applied to any IOD which has an SOP Instance UID that already exists in the Database.

A configuration parameter determines the replacement policy and can be set the following ways:

1. Keep the first IOD received and discard any subsequent IOD’s with the same SOP Instance UID.
2. If the IOD is a byte-for-byte exact copy of an existing IOD with the same SOP Instance UID then it is discarded. Otherwise, the new IOD is added to the Database, replacing all previous IOD’s that have the same SOP Instance UID. This is the default.
3. The new IOD is added to the Database, replacing all previous IOD’s that have the same SOP Instance UID.

After the IOD’s have been added to the Database, they are queued to be copied to a UCA Data Center or Public Cloud location. The IOD’s are sent encrypted and in a manner which guarantees reliable and accurate delivery. This process is non-DICOM and beyond the scope of this document. All copies are kept on encrypted storage.

The Unified Clinical Archive can be configured to indicate that any IOD received from a given Remote AE (by AE Title) is to be forwarded to one or more other Remote AE's. In this case the ucaSSCP AE will schedule this delivery. See the Association Initiation section 3.2.1.3 for ucaSSCP and the ucaSSCU AE section 3.2.2 for further details of this process.

The Unified Clinical Archive can also be configured to forward IOD's to other Unified Clinical Archives at the same site or other sites. In this case the ucaSSCP AE queues the IOD's metadata for forwarding to these remote Unified Clinical Archives. This forwarding process sends the IOD's metadata in an encrypted format and in a manner which guarantees reliable and accurate delivery. This process is non-DICOM and beyond the scope of this document.

3.2.1.4.2.2 Accepted Presentation Contexts

The Presentation Contexts listed below represent the supported Presentation Contexts. The default Presentation Contexts may differ and can be configured.

Table 3-10: Acceptable Presentation Contexts for ucaSSCP and Store Request

Abstract Syntax		Transfer Syntax (See Reference Key in Table 3-12) Bolded is default setting	Role	Ext. Neg.
SOP Class Name	SOP Class UID			
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Digital XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Digital XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Digital Mammography XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Digital Mammography XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Digital Intra Oral XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Digital Intra Oral XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Ultrasound Multi Frame Image Storage Retired	1.2.840.10008.5.1.4.1.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Ultrasound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	**LE**,LI	SCP	None
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Nuclear Medicine Image Storage Retired	1.2.840.10008.5.1.4.1.1.5	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Ultrasound Image Storage Retired	1.2.840.10008.5.1.4.1.1.6	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None

Table 3-10: Acceptable Presentation Contexts for ucaSSCP and Store Request				
Abstract Syntax		Transfer Syntax (See Reference Key in Table 3-12) Bolded is default setting	Role	Ext. Neg.
SOP Class Name	SOP Class UID			
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	**L,J2KLL,J**,J12,**J2KLY**,R,**LE**,LI	SCP	None
Multi Frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Multi Frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Multi Frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Multi Frame TrueColor Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	**LE**,LI	SCP	None
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	**LE**,LI	SCP	None
Waveform Storage Trial	1.2.840.10008.5.1.4.1.1.9.1	**LE**,LI	SCP	None
Twelve Lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	**LE**,LI	SCP	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	**LE**,LI	SCP	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	**LE**,LI	SCP	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	**LE**,LI	SCP	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	**LE**,LI	SCP	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	**LE**,LI	SCP	None
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	**LE**,LI	SCP	None
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	**LE**,LI	SCP	None
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	**LE**,LI	SCP	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	**LE**,LI	SCP	None
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	**LE**,LI	SCP	None
Pseudo Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	**LE**,LI	SCP	None
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	**LE**,LI	SCP	None
XA XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	**LE**,LI	SCP	None
XRay Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
XRay Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
XRay 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
XRay 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None

Table 3-10: Acceptable Presentation Contexts for ucaSSCP and Store Request				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-12)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Breast Projection XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
XRay Angiographic Bi Plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	**LE**,LI	SCP	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	**LE**,LI	SCP	None
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	**LE**,LI	SCP	None
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	**LE**,LI	SCP	None
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	**LE**,LI	SCP	None
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	**LE**,LI	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	**MPEG20, MPEG42**	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCP	None
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	**MPEG20, MPEG42**	SCP	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCP	None
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	**MPEG20, MPEG42**	SCP	None
Ophthalmic Photography 8Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Ophthalmic Photography 16Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	**LE**,LI	SCP	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCP	None
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	**LE**,LI	SCP	None
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	**LE**,LI	SCP	None
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	**LE**,LI	SCP	None
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	**LE**,LI	SCP	None
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	**LE**,LI	SCP	None
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	**LE**,LI	SCP	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	**LE**,LI	SCP	None

Table 3-10: Acceptable Presentation Contexts for ucaSSCP and Store Request				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-12)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	**LE**,LI	SCP	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	**LE**,LI	SCP	None
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	**LE**,LI	SCP	None
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	**LE**,LI	SCP	None
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	**LE**,LI	SCP	None
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	**LE**,LI	SCP	None
XRay Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	**LE**,LI	SCP	None
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	**LE**,LI	SCP	None
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	**LE**,LI	SCP	None
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	**LE**,LI	SCP	None
Encapsulated OBJ Storage	1.2.840.10008.5.1.4.1.1.104.4	**LE**,LI	SCP	None
Encapsulated MTL Storage	1.2.840.10008.5.1.4.1.1.104.5	**LE**,LI	SCP	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	**LE**,LI	SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	**L,J2KLL**,J,J12,J2KLY,R,**LE**,LI	SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	**LE**,LI	SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	**LE**,LI	SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	**LE**,LI	SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	**LE**,LI	SCP	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	**LE**,LI	SCP	None
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	**LE**,LI	SCP	None
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	**LE**,LI	SCP	None
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	**LE**,LI	SCP	None
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	**LE**,LI	SCP	None
Color Palette Storage	1.2.840.10008.5.1.4.39.1	**LE**,LI	SCP	None
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	**LE**,LI	SCP	None
Intravascular Optical Coherence Tomography Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.14.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Intravascular Optical Coherence Tomography Image Storage For Processing	1.2.840.10008.5.1.4.1.1.14.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCP	None
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	**LE**,LI	SCP	None
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	**LE**,LI	SCP	None
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	**LE**,LI	SCP	None

Table 3-10: Acceptable Presentation Contexts for ucaSSCP and Store Request				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-12)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	**LE**,LI	SCP	None
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	**LE**,LI	SCP	None
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	**LE**,LI	SCP	None
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	**LE**,LI	SCP	None
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	**LE**,LI	SCP	None
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	**LE**,LI	SCP	None
Practice Builder Report Text	1.2.826.0.1.3680043.2.93.1.0.1	**LE**,LI	SCP	None
Practice Builder Report Dictation	1.2.826.0.1.3680043.2.93.1.0.2	**LE**,LI	SCP	None
GE Private CT Image Storage	1.2.840.113619.4.3	**LE**,LI	SCP	None
GE Private Display Image Storage	1.2.840.113619.4.4	**LE**,LI	SCP	None
GE Private MR Image Storage	1.2.840.113619.4.2	**LE**,LI	SCP	None
GE Private 3D Model	1.2.840.113619.4.26	**LE**,LI	SCP	None
GE Private Nuclear Medicine	1.2.840.113619.4.27	**LE**,LI	SCP	None
Philips Private Specialized X-Ray Image Storage	1.3.46.670589.2.3.1.1	**LE**,LI	SCP	None
Philips Private 3D Presentation State	1.3.46.670589.2.5.1.1	**LE**,LI	SCP	None
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	**LE**,LI	SCP	None
Siemens Private Syngo CSA Non-Image Storage	1.3.12.2.1107.5.9.1	**LE**,LI	SCP	None

The ucaSSCP AE will accept any Presentation Context for a Storage SOP Class listed in Table 3 11 which proposes one of the Transfer Syntaxes listed in Table 3 12 as appropriate. Any other Presentation Contexts for Storage SOP Classes will be rejected. If more than one Presentation Context is accepted for a SOP Class, then the SCU can choose which Presentation Context to use. Since the Presentation Contexts can be configured, the defined Presentation Contexts may vary.

When a Presentation Context proposes more than one Transfer Syntax, then the first acceptable proposed Transfer Syntax as specified in Table 3 11 will be accepted. Since the Presentation Contexts can be configured, the default policy may vary.

Table 3-11: Transfer Syntaxes Reference		
SOP Class Name	**Transfer Syntax Name**	**Transfer Syntax UID**
LI	Little Endian Implicit	1.2.840.10008.1.2
LE	Little Endian Explicit	1.2.840.10008.1.2.1
J	JPEG Lossy, Baseline	1.2.840.10008.1.2.4.50
J12	JPEG Extended	1.2.840.10008.1.2.4.51
L	JPEG Lossless, Default	1.2.840.10008.1.2.4.70
R	RLE Lossless	1.2.840.10008.1.2.5
J2KLL	JPEG 2000 Lossless	1.2.840.10008.1.2.4.90
J2KLY	JPEG 2000 Lossy	1.2.840.10008.1.2.4.91
MPEG20	MPEG2 Main Profile/Main Level	1.2.840.10008.1.2.4.100
MPEG42	MPEG-4 AVC/H.264 HP Level 4.1	1.2.840.10008.1.2.4.102

3.2.1.4.2.2.1 Conformance to Storage SOP Class (SCP)

The ucaSSCP AE provides Level 2 (Full) storage of all IOD's received. The Unified Clinical Archive does not support multi-byte encoding for character data. An IOD received using multi-byte encoding may not preserve all character data. Any data received using the "Implicit VR Little Endian" Transfer Syntax will assign a VR of "UN" for all Private Data Tags. It is recommended that Remote AE's always use the "Explicit VR Little Endian" Transfer Syntax or one of the encoded syntaxes (e.g. JPEG or RLE.) which are always "Explicit VR".

The ucaSSCP AE provides Level 1 Digital Signature support.

IOD's sent to the ucaSSCP AE using one of the accepted encoded Transfer Syntaxes (e.g. JPEG, RLE, etc.) are stored unchanged with that encoding. IOD's sent with uncompressed Pixel Data are stored using JPEG-LS encoding, if appropriate. IOD's without Pixel Data are stored uncompressed. If the JPEG Lossy tag is included in the IOD, it is preserved along with the JPEG Lossy Ratio tag.

All IOD's which are sent to the ucaSSCP AE encoded (e.g. JPEG) are uncompressed with the appropriate UCA decoders to verify that they can be decoded by the ucaQSCP AE. If this decoding fails, then an error status of C101H (Cannot Understand) is sent back to the Remote AE and the Instance IOD is saved for further investigation but is not entered into the Database.

All IOD's with Pixel Data which are sent uncompressed are compressed using a configurable set of transfer syntaxes (JPEG Lossless and JPEG2000 Lossless), then uncompressed and verified against the original Pixel Data. If the original Pixel Data does not match the uncompressed Pixel Data, then the original uncompressed Pixel Data is stored as is.

IOD's which are successfully stored on the Unified Clinical Archive and entered into the Database can be accessed through the ucaQSCP AE. The IOD's will be preserved locally and at UCA Data Centers/Public Cloud for the durations specified in the customer

contract. On an ongoing basis, at least two separate permanent copies of each IOD are maintained and are periodically checked for integrity.

Table 3-12: Storage Request Response Status

Service Status	Further Meaning	Error Code	Reason
Internal Failure	JVM Issue	0x0110	• Some internal errors occurred • The operator should contact UCA Technical Support
Out of Resources	Object name limit reached File-system issue Naming system issue	0xA700	• Some internal resources are offline. • The operator should contact UCA Technical Support
File Write Failure	The file was unable to be written to disk	0xA708	• Some storage resources are offline. • The operator should contact UCA Technical Support
Header Write Failure	The DICOM header was unable to be written to disk	0xA710	• Some storage resources are offline. • The operator should contact UCA Technical Support
Messaging Failure	Could not trigger downstream workflow through AMQP	0xA712	• Some AMQP resources are offline. • The operator should contact UCA Technical Support
Data Set Does Not Match	DICOM Validation of the instance failed	0xA900	• The instance does not conform to the DICOM standard • The operator should contact UCA Technical Support to get information about the validation failure
Dataset Read Failure	Network issue	0xC001	• Some storage resources are offline. • The operator should contact UCA Technical Support
SOP Class UID Not Present	Missing the SOP Class UID	0xC002	• The instance does not conform to the DICOM standard • The operator should correct the instance and resend
Decompression Validation Failed	The pixel data is corrupt	0xC003	• The instance does not conform to the DICOM standard • The operator should correct the instance and resend
Compression Validation Failure	The internal compression/decompression failed	0xC005	• Internal processing failure • The operator should contact UCA Technical Support
DICOM Image MD5 Error	Could not generate MD5 signature of the pixel data	0xC005	• Internal processing failure • The operator should contact UCA Technical Support

3.2.1.4.3 Remote AE sends a Storage Commitment Request

3.2.1.4.3.1 Associated Real World Activity

A Remote AE sends a Storage Commit Request (N-ACTION-RQ) for any IOD's which have been successfully stored (C-STORE operation) in the Unified Clinical Archive. This request includes a Transaction UID (0008,1195) which uniquely identifies the Storage Commitment Request along with a list of Instance UID's of the IOD's for which Storage Commitment is requested. This request will be queued on the Unified Clinical Archive until each of the referenced DICOM files is either sent to a UCA Data Center or determined not to exist.

Table 3-13: Acceptable Presentation Contexts for ucaSSCP and Storage Commitment Request

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

The ucaSSCP AE will accept any Presentation Context for the Storage Commitment Push Model SOP Class which proposes "Explicit VR Little Endian" or "Implicit VR Little Endian" as a Transfer Syntax. Any other Presentation Contexts for this SOP Class will be rejected. If more than one Presentation Context is accepted for this SOP Class, then the SCU can choose which Presentation Context to use.

The ucaSSCP AE will give preference to "Explicit VR Little Endian" over "Implicit VR Little Endian" as a Transfer Syntax.

3.2.1.4.3.1.1 Conformance to Storage Commitment Push Model SOP Class (SCP)

Any SOP Instances successfully committed by the ucaSSCP AE will be preserved for the duration as determined by the contract with Unified Clinical Archive.

The IOD's are stored on the local Unified Clinical Archive and sent to a UCA Data Center/Public Cloud shortly after they are received. No SOP Instance is Committed until a copy of it has reached a UCA Data Center/Public Cloud. The Unified Clinical Archive does not wait until the IOD is transferred to permanent storage before replying to a Storage Commit Request since many Storage Commitment Users (SCU's) will only hold a Storage Commitment Transaction for a few days at most.

The Storage Media File Set ID attributes (0088,0130) and (0088,0140) are ignored if present in the request. The Referenced Study Component Sequence Attribute (0008,1111) is ignored if present. The Study Component Sequence has been retired in the 2001 DICOM Standard.

Table 3-14: Storage Commit Response Status			
Service Status	**Further Meaning**	**Error Code**	**Reason**
Resource Limit	Resource Limit	0xA700H	• The ucaSSCP AE was unable to queue the Storage Commit Request. This could be because the Unified Clinical Archive is out of disk space or some other resource. • The operator should notify UCA Technical Services and resend the Storage Commitment Request after the problem has been resolved.

3.2.1.4.3.1.2 Conformance to Storage Commitment Pull Model SOP Class (SCP)

This SOP Class is not supported by the ucaSSCP AE. It has been retired in the 2001 DICOM Standard.

3.2.1.4.4 Remote AE Sends a Modality Performed Procedure Step (MPPS) Request

3.2.1.4.4.1 Associated Real World Activity

A Remote AE, typically a Modality, sends an MPPS N-CREATE Request to indicate that it is performing one or more Requested Procedures. This request includes an Affected SOP Instance UID (0000,1000) which uniquely identifies the instance with an Attribute List. Next, the Remote AE sends MPPS N-SET Requests for the Procedures performed and a final N-SET with a status of COMPLETED. Each MPPS Request (N-CREATE and N-SET) will be forwarded to an Order Filler.

3.2.1.4.4.2 Accepted Presentation Contexts

Table 3-15: Acceptable Presentation Contexts for ucaSSCP and MPPS Request					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

The ucaSSCP AE will accept any Presentation Context for the Modality Performed Procedure Step SOP Class which proposes “Explicit VR Little Endian” or “Implicit VR Little Endian” as a Transfer Syntax. Any other Presentation Contexts for this SOP Class will be rejected. If more than one Presentation Context is accepted for this SOP Class, then the SCU can choose which Presentation Context to use.

The ucaSSCP AE will give preference to “Explicit VR Little Endian” over “Implicit VR Little Endian” as a Transfer Syntax.

3.2.1.4.4.2.1 Conformance for Modality Performed Procedure Step SOP Class (SCP)

Any valid MPPS Request will be forwarded to the configured Order Filler.

Table 3-16: Modality Performed Procedure Step (MPPS) Request Response Status			
Service Status	**Further Meaning**	**Error Code**	**Reason**
N/A			

3.2.2 ucaSSCU Application Entity – Specification

3.2.2.1 SOP Classes

The ucaSSCU AE provides standard conformance to the DICOM V3.0 SOP Classes listed in Table 3 19 as an SCU.

Table 3-17: SOP Classes Supported by the ucaSSCU AE			
SOP Class Name	**SOP Class UID**	**DIMSE**	
		SCU	**SCP**
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	No
Digital XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
Digital XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
Digital Mammography XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	No
Digital Mammography XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	No
Digital Intra Oral XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Yes	No
Digital Intra Oral XRay 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 Retired	1.2.840.10008.5.1.4.1.1.3	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
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	Yes	No
Nuclear Medicine Image Storage Retired	1.2.840.10008.5.1.4.1.1.5	Yes	No
Ultrasound Image Storage Retired	1.2.840.10008.5.1.4.1.1.6	Yes	No
Ultrasound Image Storage	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
Multi Frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Yes	No

Table 3-17: SOP Classes Supported by the ucaSSCU AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Multi Frame TrueColor Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	No
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Yes	No
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Yes	No
Waveform Storage Trial	1.2.840.10008.5.1.4.1.1.9.1	Yes	No
Twelve 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
XRay 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
XRay 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
XRay 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	Yes	No
XRay 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
Breast Projection XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	Yes	No
XRay Angiographic Bi Plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	Yes	No
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	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 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

Table 3-17: SOP Classes Supported by the ucaSSCU AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	No
Ophthalmic Photography 8Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Photography 16Bit 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
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
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	Yes	No
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
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	Yes	No
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Yes	No
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Yes	No
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	Yes	No
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	Yes	No
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	Yes	No
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	Yes	No
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	Yes	No
XRay Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	Yes	No
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	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
Encapsulated OBJ Storage	1.2.840.10008.5.1.4.1.1.104.4	Yes	No
Encapsulated MTL Storage	1.2.840.10008.5.1.4.1.1.104.5	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
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
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
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	Yes	No

Table 3-17: SOP Classes Supported by the ucaSSCU AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Color Palette Storage	1.2.840.10008.5.1.4.39.1	Yes	No
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	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
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	Yes	No
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	Yes	No
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	Yes	No
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	Yes	No
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	Yes	No
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	Yes	No
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	Yes	No
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	Yes	No
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	Yes	No

The ucaSSCU AE provides standard conformance to the Private SOP Classes listed in Table 3 20 as an SCU.

Table 3-18: Private SOP Classes Supported by the ucaSSCU AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Practice Builder Report Text	1.2.826.0.1.3680043.2.93.1.0.1	Yes	No
Practice Builder Report Dictation	1.2.826.0.1.3680043.2.93.1.0.2	Yes	No
GE Private CT Image Storage	1.2.840.113619.4.3	Yes	No
GE Private Display Image Storage	1.2.840.113619.4.4	Yes	No
GE Private MR Image Storage	1.2.840.113619.4.2	Yes	No
GE Private 3D Model	1.2.840.113619.4.26	Yes	No
GE Private Nuclear Medicine	1.2.840.113619.4.27	Yes	No
Philips Private Specialized X-Ray Image Storage	1.3.46.670589.2.3.1.1	Yes	No
Philips Private 3D Presentation State	1.3.46.670589.2.5.1.1	Yes	No
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	Yes	No
Siemens Private Syngo CSA Non-Image Storage	1.3.12.2.1107.5.9.1	Yes	No

3.2.2.2 Association Establishment Policy

3.2.2.2.1 General

The maximum number of Presentation Contexts which can be offered is 128. The maximum PDU length offered/accepted is configurable. The default is 524288 bytes

Table 3-19: DICOM Application Context for ucaSSCU AE	
Application Context Name	1.2.840.10008.3.1.1.1

3.2.2.2.2 Number of Associations

Table 3-20: Number of Association Initiated by ucaSSCU AE	
Maximum number of simultaneous connections	1

Multiple instances of the ucaSSCU AE's can be active at any given time to the same or different Remote AE's.

3.2.2.2.3 Asynchronous Nature

The ucaSSCU AE's do not support asynchronous operations and will not perform asynchronous window negotiation.

3.2.2.2.4 Implementation Identifying Information

Table 3-21: DICOM Implementation Class and Version for ucaSSCU AE	
Implementation Class UID	2.16.840.1.114107.1.1.2.x.x
Implementation Version Name	UCA_SSCU

3.2.2.3 Association Initiation Policy

3.2.2.3.1 SOP Instances are to be Forwarded to a Remote AE

3.2.2.3.1.1 Associated Real World Activity

The Unified Clinical Archive can be configured to forward IOD's received from an Originating AE to one or more Destination AE's based on various DICOM tag values.

The ucaSSCU AE is invoked once for each Destination AE and continually scans for new IOD's to process. If the ucaSSCU AE fails to send any IOD, it will periodically retry sending that IOD until it succeeds. Thus, the ucaSSCU AE guarantees delivery of IOD's to the Destination AE.

3.2.2.3.1.2 Proposed Presentation Contexts

The Presentation Contexts listed below represent the supported Presentation Contexts. The default Presentation Contexts may differ and can be configured. Custom configurations of proposed Presentation Contexts can be made based on the Destination AE Title.

Table 3-22: Acceptable Presentation Contexts for ucaSSCU Storage SOP Classes

Abstract Syntax		Transfer Syntax (See Reference Key in Table 3-25) Bolded is default setting	Role	Ext. Neg.
SOP Class Name	SOP Class UID			
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital Mammography XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital Mammography XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital Intra Oral XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital Intra Oral XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Multi Frame Image Storage Retired	1.2.840.10008.5.1.4.1.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	**LE**,LI	SCU	None

Table 3-22: Acceptable Presentation Contexts for ucaSSCU Storage SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Nuclear Medicine Image Storage Retired	1.2.840.10008.5.1.4.1.1.5	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Image Storage Retired	1.2.840.10008.5.1.4.1.1.6	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	**L,J2KLL**,**J**,J12,**J2KLY**,R,**LE**,LI	SCU	None
Multi Frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Multi Frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Multi Frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Multi Frame TrueColor Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	**LE**,LI	SCU	None
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	**LE**,LI	SCU	None
Waveform Storage Trial	1.2.840.10008.5.1.4.1.1.9.1	**LE**,LI	SCU	None
Twelve Lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	**LE**,LI	SCU	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	**LE**,LI	SCU	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	**LE**,LI	SCU	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	**LE**,LI	SCU	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	**LE**,LI	SCU	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	**LE**,LI	SCU	None
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	**LE**,LI	SCU	None
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	**LE**,LI	SCU	None
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	**LE**,LI	SCU	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	**LE**,LI	SCU	None
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	**LE**,LI	SCU	None
Pseudo Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	**LE**,LI	SCU	None
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	**LE**,LI	SCU	None
XA XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	**LE**,LI	SCU	None
XRay Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None

Table 3-22: Acceptable Presentation Contexts for ucaSSCU Storage SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
XRay Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
XRay 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
XRay 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Breast Projection XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
XRay Angiographic Bi Plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	**LE**,LI	SCU	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	**LE**,LI	SCU	None
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	**LE**,LI	SCU	None
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	**LE**,LI	SCU	None
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	**LE**,LI	SCU	None
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	**LE**,LI	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	**MPEG20, MPEG42**	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	**MPEG20, MPEG42**	SCU	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	**MPEG20, MPEG42**	SCU	None
Ophthalmic Photography 8Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ophthalmic Photography 16Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	**LE**,LI	SCU	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	**LE**,LI	SCU	None
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	**LE**,LI	SCU	None

Table 3-22: Acceptable Presentation Contexts for ucaSSCU Storage SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	**LE**,LI	SCU	None
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	**LE**,LI	SCU	None
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	**LE**,LI	SCU	None
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	**LE**,LI	SCU	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	**LE**,LI	SCU	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	**LE**,LI	SCU	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	**LE**,LI	SCU	None
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	**LE**,LI	SCU	None
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	**LE**,LI	SCU	None
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	**LE**,LI	SCU	None
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	**LE**,LI	SCU	None
XRay Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	**LE**,LI	SCU	None
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	**LE**,LI	SCU	None
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	**LE**,LI	SCU	None
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	**LE**,LI	SCU	None
Encapsulated OBJ Storage	1.2.840.10008.5.1.4.1.1.104.4	**LE**,LI	SCU	None
Encapsulated MTL Storage	1.2.840.10008.5.1.4.1.1.104.5	**LE**,LI	SCU	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	**LE**,LI	SCU	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	**L,J2KLL**,J,J12,J2KLY,R,**LE**,LI	SCU	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	**LE**,LI	SCU	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	**LE**,LI	SCU	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	**LE**,LI	SCU	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	**LE**,LI	SCU	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	**LE**,LI	SCU	None
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	**LE**,LI	SCU	None
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	**LE**,LI	SCU	None
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	**LE**,LI	SCU	None
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	**LE**,LI	SCU	None
Color Palette Storage	1.2.840.10008.5.1.4.39.1	**LE**,LI	SCU	None
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	**LE**,LI	SCU	None

Table 3-22: Acceptable Presentation Contexts for ucaSSCU Storage SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Intravascular Optical Coherence Tomography Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.14.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Intravascular Optical Coherence Tomography Image Storage For Processing	1.2.840.10008.5.1.4.1.1.14.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	**LE**,LI	SCU	None
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	**LE**,LI	SCU	None
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	**LE**,LI	SCU	None
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	**LE**,LI	SCU	None
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	**LE**,LI	SCU	None
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	**LE**,LI	SCU	None
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	**LE**,LI	SCU	None
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	**LE**,LI	SCU	None
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	**LE**,LI	SCU	None
Practice Builder Report Text	1.2.826.0.1.3680043.2.93.1.0.1	**LE**,LI	SCU	None
Practice Builder Report Dictation	1.2.826.0.1.3680043.2.93.1.0.2	**LE**,LI	SCU	None
GE Private CT Image Storage	1.2.840.113619.4.3	**LE**,LI	SCU	None
GE Private Display Image Storage	1.2.840.113619.4.4	**LE**,LI	SCU	None
GE Private MR Image Storage	1.2.840.113619.4.2	**LE**,LI	SCU	None
GE Private 3D Model	1.2.840.113619.4.26	**LE**,LI	SCU	None
GE Private Nuclear Medicine	1.2.840.113619.4.27	**LE**,LI	SCU	None
Philips Private Specialized X-Ray Image Storage	1.3.46.670589.2.3.1.1	**LE**,LI	SCU	None
Philips Private 3D Presentation State	1.3.46.670589.2.5.1.1	**LE**,LI	SCU	None
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	**LE**,LI	SCU	None
Siemens Private Syngo CSA Non-Image Storage	1.3.12.2.1107.5.9.1	**LE**,LI	SCU	None

Table 3-23: Transfer Syntaxes Reference		
SOP Class Name	**Transfer Syntax Name**	**Transfer Syntax UID**
LI	Little Endian Implicit	1.2.840.10008.1.2
LE	Little Endian Explicit	1.2.840.10008.1.2.1
J	JPEG Lossy, Baseline	1.2.840.10008.1.2.4.50
J12	JPEG Extended	1.2.840.10008.1.2.4.51

L	JPEG Lossless, Default	1.2.840.10008.1.2.4.70
R	RLE Lossless	1.2.840.10008.1.2.5
J2KLL	JPEG 2000 Lossless	1.2.840.10008.1.2.4.90
J2KLY	JPEG 2000 Lossy	1.2.840.10008.1.2.4.91
MPEG20	MPEG2 Main Profile/Main Level	1.2.840.10008.1.2.4.100[1]
MPEG42	MPEG-4 AVC/H.264 HP Level 4.1	1.2.840.10008.1.2.4.102[2]

3.2.2.3.1.2.1 Conformance to SOP Classes (SCU)

The ucaSSCU AE's forward all elements from each original IOD including all optional and private members, as received by the ucaSSCP AE. In order to assure DICOM compliance, the originating modality of each IOD must be DICOM compliant.

On success of any C-STORE Request, the ucaSSCU AE will go on to the next IOD to process, if any. The ucaSSCU AE will remove the IOD File from its queue and go on to the next queued IOD File.

Some elements of an IOD may be modified if the Pixel Data needs to be encoded (e.g. JPEG Lossy) or decoded. For example, the Photometric Interpretation will be changed to YBR_FULL_422 if JPEG Lossy is used.

The following attributes may be modified or added by the UCA Encoders and Decoders:

- Photometric Interpretation (0028,0004)
- Planar Configuration (0028,0006)
- SOP Instance UID (JPEG Lossy only)
- Lossy Image Compression (0028,2110)
- Lossy Image Compression Ratio (0028,2112)

If a stored JPEG Lossy IOD is forwarded uncompressed then it will be converted to an interleaved RGB image.

If a stored RLE Lossless or JPEG Lossless IOD is forwarded uncompressed then it will be Planar if the Photometric Interpretation is YBR_FULL, otherwise it will be Interleaved.

If the requested Transfer Syntax is JPEG 2000 Lossy and the stored IOD is JPEG 2000 Lossy then the IOD will be forwarded as is, otherwise it will be compressed as JPEG 2000 Lossless and forwarded.

The Lossy Image Compression Attribute and the original Lossy Image Compression Ratio Attribute will always be preserved in an IOD no matter whether it is decoded or re-encoded.

When multiple Presentation Contexts are accepted with the same SOP Class, then any IOD with that SOP Class will use the following criteria for choosing a Transfer Syntax:

1. If the IOD is stored with a compressed Transfer Syntax and that is one of the accepted Transfer Syntaxes, then it will be sent as is.

2. Otherwise, if any of the accepted Transfer Syntaxes support compression, then the first accepted Presentation Context with a compression Transfer Syntax will be selected where the IOD can be successfully converted to that Transfer Syntax.
3. Otherwise, if a Presentation Context with “Explicit VR Little Endian” is accepted for the IOD’s SOP Class, it will be used.
4. Otherwise, the “Implicit VR Little Endian” Transfer Syntax will be used.

3.2.2.4 Association Acceptance Policy

The ucaSSCU AE’s are strictly Storage Service Class Users (SCU’s) and do not accept Associations.

3.2.3 ucaQSCP Application Entity Specification

3.2.3.1 SOP Classes

The ucaQSCP AE provides standard conformance to the DICOM V3.0 SOP Classes listed in Table 3 26 as an SCP.

Table 3-24: SOP Classes Supported by the ucaQSCP AE

SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes
Digital XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
Digital XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Digital Mammography XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
Digital Mammography XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
Digital Intra Oral XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	No	Yes
Digital Intra Oral XRay 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 Retired	1.2.840.10008.5.1.4.1.1.3	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
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	No	Yes
Nuclear Medicine Image Storage Retired	1.2.840.10008.5.1.4.1.1.5	No	Yes
Ultrasound Image Storage Retired	1.2.840.10008.5.1.4.1.1.6	No	Yes
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes

Table 3-24: SOP Classes Supported by the ucaQSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
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 TrueColor Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	No	Yes
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	No	Yes
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	No	Yes
Waveform Storage Trial	1.2.840.10008.5.1.4.1.1.9.1	No	Yes
Twelve 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
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
XRay 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
XRay 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
XRay 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	No	Yes
XRay 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
Breast Projection XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	No	Yes
XRay Angiographic Bi Plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	No	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	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

Table 3-24: SOP Classes Supported by the ucaQSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	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
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	No	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	No	Yes
Ophthalmic Photography 8Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	No	Yes
Ophthalmic Photography 16Bit 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
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
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	No	Yes
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	No	Yes
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	No	Yes
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	No	Yes
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	No	Yes
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	No	Yes
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	No	Yes
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	No	Yes
XRay Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	No	Yes
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	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
Encapsulated OBJ Storage	1.2.840.10008.5.1.4.1.1.104.4	No	Yes
Encapsulated MTL Storage	1.2.840.10008.5.1.4.1.1.104.5	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
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

Table 3-24: SOP Classes Supported by the ucaQSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
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
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	No	Yes
Color Palette Storage	1.2.840.10008.5.1.4.39.1	No	Yes
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	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
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	No	Yes
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	No	Yes
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	No	Yes
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	No	Yes
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	No	Yes
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	No	Yes
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	No	Yes
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	No	Yes
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	No	Yes
Verification	1.2.840.10008.1.1	No	Yes
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
Patient Root Q/R Information Model GET	1.2.840.10008.5.1.4.1.2.1.3	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
Study Root Q/R Information Model GET	1.2.840.10008.5.1.4.1.2.2.3	No	Yes
Modality Worklist Information Model – Find	1.2.840.10008.5.1.4.31	No	Yes

The ucaQSCP AE provides standard conformance to the Private SOP Classes listed in Table 3 27 as an SCP

Table 3-25: Private SOP Classes Supported by the ucaQSCP AE			
SOP Class Name	SOP Class UID	DIMSE	
		SCU	SCP
Practice Builder Report Text	1.2.826.0.1.3680043.2.93.1.0.1	No	Yes
Practice Builder Report Dictation	1.2.826.0.1.3680043.2.93.1.0.2	No	Yes
GE Private CT Image Storage	1.2.840.113619.4.3	No	Yes
GE Private Display Image Storage	1.2.840.113619.4.4	No	Yes
GE Private MR Image Storage	1.2.840.113619.4.2	No	Yes
GE Private 3D Model	1.2.840.113619.4.26	No	Yes
GE Private Nuclear Medicine	1.2.840.113619.4.27	No	Yes
Philips Private Specialized X-Ray Image Storage	1.3.46.670589.2.3.1.1	No	Yes
Philips Private 3D Presentation State	1.3.46.670589.2.5.1.1	No	Yes
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	No	Yes
Siemens Private Syngo CSA Non-Image Storage	1.3.12.2.1107.5.9.1	No	Yes

3.2.3.2 Association Establishment Policy

3.2.3.2.1 General

The maximum number of Presentation Contexts which can be offered is 128. The maximum PDU length offered/accepted is configurable. The default is 524288 bytes.

Table 3-26: DICOM Application Context for ucaQSCP AE	
Application Context Name	1.2.840.10008.3.1.1.1

3.2.3.2.2 Number of Associations

Table 3-27: Number of Association Accepted by ucaQSCP AE	
Maximum number of simultaneous connections	25

The limit is based on the size of the Unified Clinical Archive and how many Associations the ucaSSCP AE has opened.

The ucaQSCP AE is limited to 5 pending Association Requests. Once an Association is negotiated and accepted it is no longer pending and not counted in this limit.

3.2.3.2.3 Asynchronous Nature

The ucaQSCP AE does not support asynchronous operations and will not perform asynchronous window negotiation.

3.2.3.2.4 Implementation Identifying Information

Table 3-28: DICOM Implementation Class and Version for ucaQSCP AE	
Implementation Class UID	2.16.840.1.114107.1.1.3.x.x
Implementation Version Name	UCA_QSCP

3.2.3.3 Association Initiation Policy

3.2.3.3.1 SOP Instances are Requested for a Destination AE with a C-MOVE Request

3.2.3.3.1.1 Associated Real World Activity

The ucaQSCP AE will look up in the Unified Clinical Archive Database all the IOD's which match the C-MOVE Request criteria. The list of matching IOD's will be sorted by Patient Name, Study Date (most recent study first), Study UID, Series UID and Instance Number.

In processing the C-MOVE Request, the ucaQSCP AE will initiate an Association with the Destination AE as a Storage SCU. Then the ucaQSCP AE will send C-STORE Requests for each matching IOD and send a C-MOVE-RSP to the Originating AE giving the count of successful and failed C-STORE Requests. After the ucaQSCP AE has attempted to store all the IOD's, it will close the Association with the Destination AE and send the final C-MOVE-RSP to the Originating AE with the final status.

3.2.3.2.1.2 Proposed Presentation Contexts

Table 3 31 below shows the Presentation Context for ucaQSCP AE. The ucaQSCP AE proposes the same Presentation Contexts as the ucaSSCU AE's (See Table 3 24). These Presentation Contexts can be configured and custom Presentation Context tables can be used based on the Destination AE Title.

Table 3-29: Acceptable Presentation Contexts for ucaQSCP SOP Classes SOP Classes				
Abstract Syntax		Transfer Syntax (See Reference Key in Table 3-25) Bolded is default setting	Role	Ext. Neg.
SOP Class Name	SOP Class UID			
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital Mammography XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital Mammography XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Digital Intra Oral XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None

Table 3-29: Acceptable Presentation Contexts for ucaQSCP SOP Classes SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Digital Intra Oral XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Multi Frame Image Storage Retired	1.2.840.10008.5.1.4.1.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	**LE**,LI	SCU	None
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Nuclear Medicine Image Storage Retired	1.2.840.10008.5.1.4.1.1.5	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Image Storage Retired	1.2.840.10008.5.1.4.1.1.6	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	**L,J2KLL,J,**J12**,J2KLY**,R,**LE**,LI	SCU	None
Multi Frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Multi Frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Multi Frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Multi Frame TrueColor Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	**LE**,LI	SCU	None
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	**LE**,LI	SCU	None
Waveform Storage Trial	1.2.840.10008.5.1.4.1.1.9.1	**LE**,LI	SCU	None
Twelve Lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	**LE**,LI	SCU	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	**LE**,LI	SCU	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	**LE**,LI	SCU	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	**LE**,LI	SCU	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	**LE**,LI	SCU	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	**LE**,LI	SCU	None
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	**LE**,LI	SCU	None
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	**LE**,LI	SCU	None
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	**LE**,LI	SCU	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	**LE**,LI	SCU	None

Table 3-29: Acceptable Presentation Contexts for ucaQSCP SOP Classes SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	**LE**,LI	SCU	None
Pseudo Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	**LE**,LI	SCU	None
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	**LE**,LI	SCU	None
XA XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	**LE**,LI	SCU	None
XRay Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
XRay Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
XRay 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
XRay 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Breast Projection XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
XRay Angiographic Bi Plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	**LE**,LI	SCU	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	**LE**,LI	SCU	None
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	**LE**,LI	SCU	None
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	**LE**,LI	SCU	None
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	**LE**,LI	SCU	None
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	**LE**,LI	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	**MPEG20, MPEG42**	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	**MPEG20, MPEG42**	SCU	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	**MPEG20, MPEG42**	SCU	None
Ophthalmic Photography 8Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Ophthalmic Photography 16Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None

Table 3-29: Acceptable Presentation Contexts for ucaQSCP SOP Classes SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	**LE**,LI	SCU	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	**L,J2KLL**,**J**,J12,**J2KLY**,R,LE,LI	SCU	None
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	**LE**,LI	SCU	None
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	**LE**,LI	SCU	None
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	**LE**,LI	SCU	None
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	**LE**,LI	SCU	None
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	**LE**,LI	SCU	None
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	**LE**,LI	SCU	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	**LE**,LI	SCU	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	**LE**,LI	SCU	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	**LE**,LI	SCU	None
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	**LE**,LI	SCU	None
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	**LE**,LI	SCU	None
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	**LE**,LI	SCU	None
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	**LE**,LI	SCU	None
XRay Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	**LE**,LI	SCU	None
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	**LE**,LI	SCU	None
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	**LE**,LI	SCU	None
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	**LE**,LI	SCU	None
Encapsulated OBJ Storage	1.2.840.10008.5.1.4.1.1.104.4	**LE**,LI	SCU	None
Encapsulated MTL Storage	1.2.840.10008.5.1.4.1.1.104.5	**LE**,LI	SCU	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	**LE**,LI	SCU	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	**L,J2KLL**,J,J12,J2KLY,R,**LE**,LI	SCU	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	**LE**,LI	SCU	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	**LE**,LI	SCU	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	**LE**,LI	SCU	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	**LE**,LI	SCU	None

Table 3-29: Acceptable Presentation Contexts for ucaQSCP SOP Classes SOP Classes				
Abstract Syntax		**Transfer Syntax (See Reference Key in Table 3-25)** Bolded is default setting	**Role**	**Ext. Neg.**
SOP Class Name	**SOP Class UID**			
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	**LE**,LI	SCU	None
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	**LE**,LI	SCU	None
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	**LE**,LI	SCU	None
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	**LE**,LI	SCU	None
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	**LE**,LI	SCU	None
Color Palette Storage	1.2.840.10008.5.1.4.39.1	**LE**,LI	SCU	None
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	**LE**,LI	SCU	None
Intravascular Optical Coherence Tomography Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.14.1	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Intravascular Optical Coherence Tomography Image Storage For Processing	1.2.840.10008.5.1.4.1.1.14.2	**L,J2KLL**,J,J12,J2KLY,R,LE,LI	SCU	None
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	**LE**,LI	SCU	None
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	**LE**,LI	SCU	None
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	**LE**,LI	SCU	None
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	**LE**,LI	SCU	None
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	**LE**,LI	SCU	None
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	**LE**,LI	SCU	None
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	**LE**,LI	SCU	None
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	**LE**,LI	SCU	None
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	**LE**,LI	SCU	None
Practice Builder Report Text	1.2.826.0.1.3680043.2.93.1.0.1	**LE**,LI	SCU	None
Practice Builder Report Dictation	1.2.826.0.1.3680043.2.93.1.0.2	**LE**,LI	SCU	None
GE Private CT Image Storage	1.2.840.113619.4.3	**LE**,LI	SCU	None
GE Private Display Image Storage	1.2.840.113619.4.4	**LE**,LI	SCU	None
GE Private MR Image Storage	1.2.840.113619.4.2	**LE**,LI	SCU	None
GE Private 3D Model	1.2.840.113619.4.26	**LE**,LI	SCU	None
GE Private Nuclear Medicine	1.2.840.113619.4.27	**LE**,LI	SCU	None
Philips Private Specialized X-Ray Image Storage	1.3.46.670589.2.3.1.1	**LE**,LI	SCU	None
Philips Private 3D Presentation State	1.3.46.670589.2.5.1.1	**LE**,LI	SCU	None
Philips Private Gyroscan MR Series Data	1.3.46.670589.11.0.0.12.2	**LE**,LI	SCU	None
Siemens Private Syngo CSA Non-Image Storage	1.3.12.2.1107.5.9.1	**LE**,LI	SCU	None

3.2.3.2.1.2.1 Conformance to Storage SOP Classes (SCU)

The ucaQSCP AE sends all elements from each original IOD including all optional and private members, as received by the ucaSSCP AE. In order to assure DICOM compliance, the originating modality of each IOD must be DICOM compliant.

On success of any C-STORE-RQ, the ucaQSCP AE will send a C-MOVE-RSP to the Originating AE with a pending status (FF00H) and the completed sub-operations (0000,1021) will be incremented.

If any failure status occurs from a C-STORE-RQ the ucaQSCP AE will send a C-MOVE-RSP to the Originating AE with a pending status (FF00H) and the failed sub-operations (0000,1022) will be incremented.

All elements in the original IOD will be forwarded including all optional and private members.

Some elements may be modified if the Pixel Data needs to be encoded (e.g. JPEG Lossy) or decoded.

The ucaQSCP AE has the same Storage SCU Selection Policy as do the ucaSSCU AE's.

3.2.3.2.2 Modality Worklist Request

3.2.3.2.3.1 Associated Real World Activity

The ucaQSCP AE can be configured to send Modality Worklist C-FIND Requests to a configured Modality Worklist Server. Upon Association Acceptance, ucaQSCP AE will send a wait for Worklist responses.

3.2.3.2.3.2 Proposed Presentation Contexts

Table 3-30: Acceptable Presentation Contexts for MWL SOP Class

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

The ucaQSCP AE will give preference to "Explicit VR Little Endian" over "Implicit VR Little Endian" as a Transfer Syntax.

3.2.3.4 Association Acceptance Policy

3.2.3.4.1 Modality Worklist Request

3.2.3.4.1.1 Associated Real World Activity

A Remote AE sends a Verification Request (C-ECHO-RQ) to the ucaQSCP AE which always responds with a status of zero (0).

3.2.3.4.1.2 Presentation Context Table

Table 3-31: Acceptable Presentation Contexts for Verification SOP Class

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

3.2.3.4.1.2.1 Conformance to the Verification SOP Class

The Verification Service conforms to the DICOM V3.0 Standard.

The ucaQSCP AE always sends a Verification Response (C-ECHO-RSP) with the status of zero (0), success.

3.2.3.4.1.3 Presentation Context Acceptance Criterion

The ucaQSCP AE will accept any Presentation Context for the Verification SOP Class which proposes “Explicit VR Little Endian” or “Implicit VR Little Endian” as a Transfer Syntax. Any other Presentation Contexts for the Verification SOP Class will be rejected. If more than one Presentation Context is accepted, the SCU can choose which Presentation Context to use.

The ucaQSCP AE will give preference to “Explicit VR Little Endian” over “Implicit VR Little Endian” as a Transfer Syntax.

3.2.3.4.2 Remote AE Requests Query/Retrieve Find Services

3.2.3.4.2.1 Associated Real World Activity

A Remote AE (e.g. display station) sends a C-FIND Request at the Patient, Study, Series or Instance Level. The ucaQSCP AE will search the Database for all matching instances. The Database has primary indexes for the following DICOM attributes:

- Patient ID (0010,0020)

- Patient Name (0010,0010)
- Accession Number (0008,0050)
- Study ID (0020,0010)
- Study Instance UID (0020,000D)
- Study Date (0008,0020)
- Series Instance UID (0020,000E)

If no value is given for any of these primary index attributes then the query search will be limited to a configurable number of most recent days. This limit does not apply to the Patient Query Level.

If more than a maximum number of matches are found then an “Out of Resources” error status is returned to the Remote AE and no further action is taken. The maximum number of matches is configurable.

The matches are sorted by Patient Name, Study Date (most recent first), Study UID, Series UID and Instance Number (Image Number).

Each of the resulting matches is sent back to the Remote AE with all the requested attributes which are available for the given query level (see Section 3.2.3.3.2.2).

3.2.3.4.2.2 Presentation Context Table

Table 3-32: Acceptable Presentation Contexts for ucaQSCP FIND SOP Class

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Patient Root Q/R FIND	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Study Root Q/R FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

3.2.3.4.2.2.1 Conformance to the Query/Retrieve Find SOP Class (SCP)

The ucaQSCP AE conforms to the DICOM V3.0 standard as a Query/Retrieve Service Class Provider (SCP).

The ucaQSCP AE does not support Extended Negotiation and therefore does not negotiate Relational Queries. However, the ucaQSCP AE will accept wildcards, date ranges and UID list matching for any of the DICOM keys above the specified Query/Retrieve Level.

The ucaQSCP AE is case insensitive when matching all supported “PN” VR attributes. It is also case insensitive for “Body Part (0018,0015)”, “Modality” (0008,0060) and “Modality in Studies” (0008,0061) attributes. The following fields are case sensitive: “Study Description” (0008, 1030), “Institution Name” (0008, 0080), and “Occupation” (0010, 2180).

If no value is given for any of these primary index attributes then the query search will be limited to a configurable number of most recent days. This is used to force a limit on the Database

search. This limit can be overridden by specifying any study date or date range including "19800101-". This limit does not apply to the Patient Query Level.

If more than a maximum number of matches are found then an "Out of Resources" error status is returned to the Remote AE and no further action is taken. If this occurs the operator should refine the query criteria to reduce the number of matches and resend the query request. The maximum number of matches is configurable.

To process a C-FIND-RQ, each matching instance is sent as a C-FIND-RSP to the Originating AE with a pending status (FF00H), and the requested attributes for that instance are populated. Only those attributes listed in Table 3 36 through Table 3 42 are returned.

The following error status can be given in a C-FIND-RSP:

Table 3-33: ucaQSCP Request Response Status

Service Status	Further Meaning	Error Code	Reason
Out of Resources	Unable to calculate number of matches	A700H	• The ucaQSCP AE found more than the maximum number of matches. No results will be sent back to the Originating AE. The "Error Comment" (0000,0902) will indicate the limit. The limit is configurable; the default is 10,000 • The operator should refine the Query criteria to reduce the number of matches and resend the request
Unable to Process	Generic error message	0xC000H	• The message is invalid • The operator should correct the message and try again

3.2.3.4.2.2.2 Conformance to the Patient Root Query/Retrieve FIND SOP Class (SCP)

Table 3-34: Patient Level Attributes for C-FIND

Description	Tag	Type	Q/R
Patient Name	(0010,0010)	R	Q/R
Patient ID	(0010,0020)	U	Q/R
Issuer of Patient ID	(0010,0021)	O	Q/R
Patient Birth Date	(0010,0030)	O	Q/R
Patient Birth Time	(0010,0032)	O	Q/R
Patient's Sex	(0010,0040)	O	Q/R
Other Patient IDs Sequence	(0010,1002)	O	R
Ethnic Group	(0010,2160)	O	Q/R
Number of Patient Related Studies	(0020,1200)	O	R
Number of Patient Related Series	(0020,1202)	O	R
Number of Patient Related Instances	(0020,1204)	O	R

Table 3-35: Study Level Attributes for C-FIND			
Description	**Tag**	**Type**	**Q/R**
Study Date	(0008,0020)	R	Q/R
Study Time	(0008,0030)	R	Q/R
Accession Number	(0008,0050)	R	Q/R
Study ID	(0020,0010)	R	Q/R
Study Instance UID	(0020,000D)	U	Q/R
Study Status ID	(0032,000A)	O	Q/R
Referring Physician Name	(0008,0090)	O	Q/R
Interpretation Author	(4008,010C)	O	Q/R
Study Description	(0008,1030)	O	Q/R
Patient's Age	(0010,1010)	O	R
Patient's Size	(0010,1020)	O	R
Patient's Weight	(0010,1030)	O	R
Occupation	(0010,2180)	O	Q/R
Number of Study Related Series	(0020,1206)	O	R
Number of Study Related Instances	(0020,1208)	O	R
Modalities in Study	(0008,0061)	O	Q/R
Institution Name	(0008,0080)	O	Q/R
Institution Code Sequence	(0008,0082)	O	R
Issuer of Accession Number Sequence	(0008,0051)	O	R

Table 3-36: Series Level Attributes for C-FIND			
Description	**Tag**	**Type**	**Q/R**
Modality	(0008,0060)	R	Q/R
Series Number	(0020,0011)	R	Q/R
Series Instance UID	(0020,000E)	U	Q/R
Number of series related Instance	(0020,1209)	O	R
Request Attribute Sequence	(0040,0275)	O	Q/R
> Requested Procedure ID	(0040,1001)	O	Q/R
> Scheduled Procedure Step ID	(0040,0009)	O	Q/R
Performed Procedure Step Start Date	(0040,0244)	O	Q/R
Performed Procedure Step Start Time	(0040,0245)	O	Q/R
Body Part	(0018,0015)	O	Q/R

Table 3-37: Instance Level Attributes for C-FIND			
Description	**Tag**	**Type**	**Q/R**
Instance Number	(0020,0013)	R	Q/R

Table 3-37: Instance Level Attributes for C-FIND			
Description	**Tag**	**Type**	**Q/R**
SOP Instance UID	(0008,0018)	U	Q/R
SOP Class UID	(0008,0016)	O	Q/R
Overlay Number	(0020,2022)	O	R
Curve Number	(0020,0024)	O	R
LUT Number	(0020,0026)	O	R
Slice Location	(0020,1041)	O	R
Samples Per Pixel	(0028,0002)	O	R
Photometric Interpretation	(0028,0004)	O	R
Planar Configuration	(0028,0006)	O	R
Number of Frames	(0028,0008)	O	R
Rows	(0028,0010)	O	R
Columns	(0028,0011)	O	R
Bits Allocated	(0028,0100)	O	R
Pixel Representation	(0028,0103)	O	R
Lossy Image Compression	(0028,2110)	O	R
Lossy Image Compression Ratio	(0028,2112)	O	R

Table 3-38: Instance Level Attributes for C-FIND Presentation State (“PR”)			
Description	**Tag**	**Type**	**Q/R**
Presentation Label	(0070,0080)	O	R
Presentation Description	(0070,0081)	O	R
Presentation Creation Date	(0070,0082)	O	R
Presentation Creation Time	(0070,0083)	O	R
Presentation Creator’s Name	(0070,0084)	O	R
Referenced Series Sequence	(0008,1115)	O	R
> Series Instance UID	(0020,000E)	O	R
> Referenced Image Sequence	(0008,1140)	O	R
>> Referenced SOP Class UID	(0008,1150)	O	R
>> Referenced SOP Instance UID	(0008,1155)	O	R
> Coding Scheme Version	(0008,0103)	O	R
> Code Meaning	(0008,0104)	O	R

Table 3-39: Instance Level Attributes for C-FIND Key Object Selection (“KY”) and Structured Reports (“SR”)			
Description	**Tag**	**Type**	**Q/R**
Content Date	(0008,0023)	O	R
Content Time	(0008,0033)	O	R
Observation Date Time	(0040,A032)	O	R
Referenced Request Sequence	(0040,A370)	O	R
> Study Instance UID	(0020,000D)	O	R
> Accession Number	(0008,0050)	O	R
> Requested Procedure ID	(0040,1000)	O	R
> Requested Procedure Code Sequence	(0032,1064)	O	R
>> Code Value	(0008,0100)	O	R
>> Coding Scheme Designator	(0008,0102)	O	R
>> Coding Scheme Version	(0008,0103)	O	R
>> Code Meaning	(0008,0104)	O	R
Concept Name Code Sequence	(0040,A043)	O	Q/R
> Code Value	(0008,0100)	O	Q/R
> Coding Scheme Designator	(0008,0102)	O	Q/R
> Coding Scheme Version	(0008,0103)	O	R
> Code Meaning	(0008,0104)	O	R

Table 3-40: Instance Level Attributes for C-FIND Structured Reports (“SR”)			
Description	**Tag**	**Type**	**Q/R**
Completion Flag	(0040,A491)	O	Q/R
Verification Flag	(0040,A493)	O	Q/R
Verifying Observer Sequence	(0040,A073)	O	Q/R
> Verifying Organization	(0040,A027)	O	R
> Verification Date Time	(0040,A030)	O	Q/R
> Verifying Observer Name	(0040,A075)	O	Q/R
> Verifying Observer Identification Code Sequence	(0040,A088)	O	R

3.2.3.4.2.2.2 Conformance to the Study Root Query/Retrieve FIND SOP Class (SCP)

This SOP Class supports the attributes described in Table 3 36 through Table 3 42.

3.2.3.4.2.3 Presentation Context Acceptance Criterion

The ucaQSCP AE will accept any Presentation Context for the Query/Retrieve Find SOP Classes listed in Section 3.2.3.2.1.2 which proposes “Explicit VR Little Endian” or “Implicit VR Little

Endian" as a Transfer Syntax. Any other Presentation Contexts for a Query/Retrieve Find SOP Class will be rejected. If more than one Presentation Context is accepted for the same SOP Class, the SCU can choose which Presentation Context to use.

The ucaQSCP AE will give preference to "Explicit VR Little Endian" over "Implicit VR Little Endian" as a Transfer Syntax.

3.2.3.4.3 Remote AE Requests Query/Retrieve Move/Get Services

3.2.3.4.3.1 Associated Real World Activity

A Remote AE (e.g. display station) sends a C-MOVE/C-GET Request at the Patient, Study, Series or Instance Level. A C-MOVE Request will give an AE Title for the Destination AE (0000,0600). A C-GET Request expects the IOD's to be transferred on the same socket as the Request. The ucaQSCP AE will search the Database for all matching instances. The Database has primary indexes for the following DICOM attributes:

- Patient ID (0010,0020)
- Patient Name (0010,0010)
- Accession Number (0008,0050)
- Study ID (0020,0010)
- Study Instance UID (0020,000D)
- Study Date (0008,0020)
- Series Instance UID (0020,000E)

If no value is given for any of these primary index attributes then the query search will be limited to a configurable number of most recent days. This limit does not apply to the Patient Query Level.

If more than a maximum number of matches are found then an "Out of Resources" error status is returned to the Requester and no further action is taken. The maximum number of matches is configurable; the default is 10,000 instances.

The matches are sorted by Patient Name, Study Date (most recent first), Study UID, Series UID and Instance Number (Image Number).

The matching files are retrieved, either locally or from a UCA Data Center, and delivered to the Destination as determined by the C-MOVE/C-GET Request.

The latency for Study retrieval from local RAID is a factor of the size of the Study and the availability and speed of the local network. The latency for Study retrieval from a UCA Data Center is a factor of the access speed of the near line storage media and the availability and speed of the network connection between the customer site and the UCA Data Center.

3.2.3.4.3.2 Presentation Context Table

Table 3-41: Acceptable Presentation Contexts for ucaQSCP MOVE SOP Class					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Patient Root Q/R MOVE	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Patient Root Q/R GET	1.2.840.10008.5.1.4.1.2.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Study Root Q/R MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Study Root Q/R GET	1.2.840.10008.5.1.4.1.2.2.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

3.2.3.3.5.2.1 Conformance to the Query/Retrieve SOP Classes (SCP)

The ucaQSCP AE conforms to the DICOM V3.0 standard as a Query/Retrieve Service Class Provider (SCP).

The ucaQSCP AE does not support Extended Negotiation and therefore does not negotiate Relational Queries.

The ucaQSCP AE is case insensitive when matching all supported “PN” VR attributes.

In support of C-GET Requests the ucaQSCP AE accepts the same Presentations as the ucaSSCU AE given in Table 3 24 as a Storage Service Class User (SCU) by accepting the requestors Role Negotiation to act as an SCP for these SOP Classes.

The ucaQSCP AE proposes the same Presentation Contexts as the ucaSSCU AE given in Table 3 24 when acting as a Storage Service Class User (SCU) for C-MOVE Requests.

For each IOD that the ucaQSCP AE attempts to send to the Destination, a C-MOVE-RSP or C-GET-RSP will be sent to the Originating AE with a pending status (FF00H) and either the number of completed sub-operations (0000,1021) or the number of failed sub-operations (0000,1022) is incremented and the number of remaining sub-operations (0000,1020) is decremented.

The following error statuses can be given in the final C-MOVE-RSP/C-GET-RSP:

Table 3-42: Move/Get Request Response Status			
Service Status	**Further Meaning**	**Error Code**	**Reason**
Out of Resources	Unable to calculate number of matches	0xA700H	• The ucaQSCP AE found more than the maximum number of matches. No results will be sent back to the Originating AE. The “Error Comment” (0000,0902) will indicate the limit.

Table 3-42: Move/Get Request Response Status			
Service Status	**Further Meaning**	**Error Code**	**Reason**
			The limit is configurable; the default is 10,000 • The operator should refine the Query criteria to reduce the number of matches and resend the request
Unable to perform sub-operations	Could not negotiate or open association the destination	0xA702H	• The Unified Clinical Archive does not have the specified Destination AE Title in its configuration • The operator can try sending the request with a different Destination AE. • The operator can contact UCA Technical Services to have this Destination AE Title added. Then the operator can resend the C-MOVE Request.
Move Destination Unknown	C-MOVE-RQ cannot complete	0xA801H	• The Unified Clinical Archive does not have the specified Destination AE Title in its configuration • The operator can try sending the request with a different Destination AE. • The operator can contact UCA Technical Services to have this Destination AE Title added. Then the operator can resend the C-MOVE Request.
No Move Destination	C-MOVE-RQ cannot complete	0xA900H	• The request is missing the destination • The operator should correct the message and add the destination
Unable to Process	C-MOVE-RQ cannot complete	0xC000H	• The system encountered an internal error

3.2.3.3.5.2.2 Conformance to the Patient Root Query/Retrieve SOP Classes (SCP)

Table 3-43: Patient Level Attributes for C-MOVE/C-GET		
Description	**Tag**	**Type**
Patient ID	(0010,0020)	U

Table 3-44: Study Level Attributes for C-MOVE/C-GET		
Description	**Tag**	**Type**
Study Instance UID	(0020,000D)	U

Table 3-45: Series Level Attributes for C-MOVE/C-GET		
Description	**Tag**	**Type**
Series Instance UID	(0020,000E)	U

Table 3-46: Instance Level Attributes for C-MOVE/C-GET		
Description	**Tag**	**Type**
SOP Instance UID	(0008,0018)	U

3.2.3.5.5.2.3 Presentation Context Acceptance Criterion

The ucaQSCP AE will accept any Presentation Context for the Query/Retrieve Move/Get SOP Classes listed in Section 3.2.3.2.1.2 which proposes the “Explicit VR Little Endian” or “Implicit VR Little Endian” Transfer Syntaxes. Any other Presentation Contexts for a Query/Retrieve Move/Get SOP Class will be rejected. If more than one Presentation Context is accepted for the same SOP Class, the SCU can choose which Presentation Context to use.

The ucaQSCP AE will accept the same Presentation as specified for the ucaSSCU AE’s in Table 3 24 with the transfer syntaxes in Table 3 25 through Table 3 28 where the requester negotiates a role as an SCP. These storage classes are accepted for use in C-GET Requests.

The ucaQSCP AE will give preference to “Explicit VR Little Endian” over “Implicit VR Little Endian” as a Transfer Syntax.

3.2.4 UCA QIDO Origin Server

The UCA QIDO Origin Server is a native implementation of DICOMweb's QIDO specification.

3.2.4.1 QIDO Resources

Table 3-47: QIDO Resources

Resource	URI Template
All Patients	/patients{search}
All Studies	/studies{search}
All Series	/series{search}
A Study's Series	/studies/<Study Instance UID>/series{search}
All Instances	/instances{search}
A Study's Instances	/studies/<Study Instance UID>/instances{search}
A Series Instances	/studies<Study Instance UID>/series/<Series Instance UID/instances{search}

The search criteria, designated by {search} above, is a list of one or more of the following:

- Matching
  - <DICOM Tag>=<Value>
  - <DICOM Keyword=<Value>
- Include in results
  - includefield=<DICOM Tag>
  - includefield=<DICOM Keyword>

If desired the search criteria can be terminated with these options:

- Offset –To skip over the first n results, defaults to 0 if not specified
  - offset=<value>
- Limit – To return only the first n results from the query's offset
  - limit=<value>

Please note that fuzzy matching is not supported.

3.2.4.2 QIDO Media Types

The following media types may be specified in the HTTP request's "Accept" header:

- application/dicom+json (default)
- application/dicom+xml
- application/json
- application/xml

3.2.4.3 QIDO HTTP Response Codes

Table 3-48: QIDO HTTP Response Codes

Status	Code	Meaning
Success	200	OK – Search completed successfully and results are contained in the payload
Success	204	No Content – The search completed successfully but there were no results
Failure	400	Bad Request – There was a problem parsing the request
Failure	404	Not Found – The AE Title in the request was not found
Failure	413	Payload Too Large - The search was too broad and the body of the response will contain additional information about the failure

3.2.4.4 QIDO Attribute Matching

The table below specifies attributes available for the “patients” resource:

Table 3-491: Patient Resource Attributes

Keyword	Tag	Matching	Return	Notes
PatientName	00100010	Y	Y	
PatientID	00100020	Y	Y	
IssuerOfPatientID	00100021	Y	Y	
PatientBirthDate	00100030	Y	Y	
PatientBirthTime	00100032	Y	Y	
PatientSex	00100040	Y	Y	
MedicalRecordLocator	00101090	Y	Y	
EthnicGroup	00102160	Y	Y	

The table below specifies attributes available for the “studies” resource:

Table 3-502: Study Resource Attributes

Keyword	Tag	Matching	Return	Notes
<All Patient Attributes>		Y	Y	See Table 3-51
StudyDate	00080020	Y	Y	Supports range matching
StudyTime	00080030	Y	Y	Supports range matching
AccessionNumber	00080050	Y	Y	
StudyID	00200010	Y	Y	
StudyInstanceUID	0020000D	Y	Y	
StudyStatusID	0032000A	Y	Y	
ReferringPhysicianName	00080090	Y	Y	
InterpretationAuthor	4008010C	Y	Y	
StudyDescription	00081030	Y	Y	
PatientAge	00101010	Y	Y	
PatientSize	00101020	Y	Y	
PatientWeight	00101030	Y	Y	
Occupation	00102180	Y	Y	
PregnancyStatus	001021C0	N	Y	

The table below specifies attributes available for the “series” resource:

Table 3-513: Series Resource Attributes

Keyword	Tag	Matching	Return	Notes
<All Patient Attributes>		Y	Y	See Table 3-51
<All Study Attributes>		Y	Y	See Table 3-52
Modality	00080060	Y	Y	
InstitutionName	00080080	Y	Y	
StationName	00081010	Y	Y	
SeriesDescription	0008103E	Y	Y	
BodyPartExamined	00180015	Y	Y	
SeriesNumber	00200011	Y	Y	
SeriesInstanceUID	0020000E	Y	Y	
Laterality	00200060	N	Y	
InstitutionalDepartmentName	00081040	N	Y	
PerformedProcedureStepStartDate	00400244	N	Y	
PerformedPrecodureStepStartTime	00400245	N	Y	
PerformedProcedureStepEndDate	00400250	N	Y	
PerformedProcedureStepEndTime	00400251	N	Y	
PerformedProcedureStepID	00400253	N	Y	
PerformedProcedureStepDescription	00400254	N	Y	

Table 3-524: Instance Resource Attributes				
Keyword	**Tag**	**Matching**	**Return**	**Notes**
<All Patient Attributes>		Y	Y	See Table 3-51
<All Study Attributes>		Y	Y	See Table 3-52
<All Series Attributes>		Y	Y	See Table 3-53
InstanceNumber	00200013	Y	Y	
OverlayNumber	00200022	Y	Y	
CurveNumber	00200024	Y	Y	
LUTNumber	00200026	Y	Y	
SOPInstanceUID	00080018	Y	Y	
ContentDate	00080023	Y	Y	
ContentTime	00080033	Y	Y	
SliceLocation	00201041	Y	Y	
NumberOfFrames	00280008	Y	Y	
Rows	00280010	Y	Y	
Columns	00280011	Y	Y	
LossyImageCompression	00282110	Y	Y	
LossyImageCompressionRatio	00282112	Y	Y	
DocumentTitle	00420010	Y	Y	
SamplesPerPixel	00280002	N	Y	
PhotometricInterpretation	00280004	N	Y	
PlanarConfiguration	00280006	N	Y	
PixelRepresentation	00280103	N	Y	
BitsAllocated	00280100	N	Y	

3.2.5 UCA WADO Origin Server

The UCA WADO Origin Server is a native implementation of DICOMweb's WADO specification.

3.2.5.1 WADO Resources

Table 3-53: QIDO Resources

Resource	URI Template
Study	/studies/<Study Instance UID>
Series	/studies/<Study Instance UID>/series/<Series Instance UID>
Instance	/studies/<Study Instance UID>/series/<Series Instance UID>/instance/<SOP Instance UID>
Frame	/studies/<Study Instance UID>/series/<Series Instance UID>/instance/<SOP Instance UID>/frames/<Frame List>

The Origin Server supports the following options to be suffixed on all URI's above:

- "/rendered" – To retrieve a rendering of the pixel data
  - Supports the "quality", "viewport", "window", and "iccprofile" options
- "/thumbnail" – To generate and retrieve a thumbnail for that resource
  - Supports the "viewport" option

The Origin Server supports the following options to be suffixed on the Study, Series, and Instance URI's above:

- "/metadata" – To retrieve just the metadata

The Origin Server supports the following options to be suffixed on the Instance URI above:

- "/bulkdata/<AttributePath>" – To retrieve a bulk data tag

3.2.5.2 WADO Media Types

The media types supported vary based on the requested payload.

- DICOM Instance Resources
  - multipart/related; type=application/dicom (Default)
  - multipart/related; type=application/octet-stream
  - application/zip (For studies and series resources only)
  - Single Frame
    - multipart/related; type=image/jpeg
    - multipart/related; type=image/gif
    - multipart/related; type=image/png
  - Multi Frame
    - multipart/related; type=image/gif
  - Video
    - multipart/related; type=video/mpeg
    - multipart/related; type=video/mp4
  - Text
    - ~~multipart/related; type=text/html~~
    - ~~multipart/related; type=text/plain~~
    - ~~multipart/related; type=text/xml~~
- Metadata Resources
  - application/dicom+json (Default)
  - multipart/related; type=application/dicom+xml
- Bulkdata + Pixel Data Resources
  - multipart/related; type=application/octet-stream (Default)
  - Single Frame
    - multipart/related; type=image/jpeg
    - multipart/related; type=image/gif
    - multipart/related; type=image/png
  - Multi Frame
    - multipart/related; type=image/gif
  - Video
    - multipart/related; type=video/mpeg
    - multipart/related; type=video/mp4
  - Text
    - multipart/related; type=text/html
    - multipart/related; type=text/plain
    - multipart/related; type=application/pdf
    - ~~multipart/related; type=text/xml~~

- Rendered Resources
  - Single Frame
    - image/jpeg | multipart/related; type=image/jpeg (Default)
    - image/gif | multipart/related; type=image/gif
    - image/png | multipart/related; type=image/png
  - Multi Frame
    - multipart/related; type=image/gif (Default)
  - Video
    - multipart/related; type=video/mpeg (Default)
    - multipart/related; type=video/mp4
  - Text
    - multipart/related; type=text/html (Default)
    - multipart/related; type=text/plain
    - multipart/related; type=application/pdf
    - ~~multipart/related; type=text/xml~~
- Thumbnail Resources
  - image/jpeg

3.2.5.3 WADO HTTP Response Codes

Table 3-54: QIDO HTTP Response Codes

Status	Code	Meaning
Success	200	OK – Response payload contains representations for all of the target resources
Success	206	Partial Content - Response payload contains representations for some of the target resources
Failure	400	Bad Request – There was a problem parsing the request
Failure	404	Not Found – The target resource does not exist
Failure	406	Not Acceptable – The server does not support any of the acceptable media types
Failure	413	Payload Too Large - The search was too broad and the body of the response will contain additional information about the failure

3.3 Network Interfaces

3.3.1 Physical Network Interfaces

The Unified Clinical Archive Intelligent Management Gateway device can support multiple network interfaces. One of the following physical network interfaces will be available on installed hardware:

Table 3-55: Supported Physical Network Interfaces
Ethernet 1000baseT
Ethernet 100baseT
Ethernet 10baseT

3.3.2 Additional Protocols

The Unified Clinical Archive requires a static IP address, therefore DHCP is not supported.

DNS can be configured, but it is not used by the Unified Clinical Archive applications, all AE Titles must be configured with static IP address and port.

3.3.3 IPv4 and IPv6 Support

The Unified Clinical Archive will support for both IPv4 and IPv6, but does not use optional configuration identification or security features of IPv6.

3.4 Configuration

3.4.1 AE Title Presentation Address Mapping

3.4.1.1 Local AE Titles

The Unified Clinical Archive DICOM configuration file has sections that provide a mapping of an AE Title to a presentation address. A presentation address consists of an AE Title, IP Address and Port Number (SCP only).

Table 3-568: AE Title Configuration Table		
Application Entity	**AE Title**	**TCP/IP Port**
Store	ucaSSCP-Pxxx	Port: 10104
Query	ucaQSCP-Pxxx	Port: 14444
Forward/Push	ucaSSCU-Pxxx	N/A

3.4.1.2 Remote AE Title/Presentation Address

The configuration file also defines Remote DICOM Application Entities which interact with the Unified Clinical Archive as SCP's or SCU's. The AE's are defined in terms of AE Title, IP Address, and Port

Table 3-57: Remote AE Title/Presentation Address Examples		
AE Title: RADWORKS-1	IP: 10.1.0.14	Port: 104
AE Title: ER1-DICOMEYE	IP: 10.4.1.3	Port: 1377
AE Title: EFILM-3	IP: 10.2.1.6	Port: 10276

3.4.1.3 Parameters

Table 3-58: Configuration Parameters Table		
Parameter	**Configurable (Yes/No)**	**Default Value**
AE Specific Parameters		
Association Time-out	Yes	15
SCP read/write Time-out Values for the ucaSSCP AE and the ucaQSCP AE	Yes	45/15
SCU read/write Time-out Values for the ucaSSCU AE	Yes	3600
Maximum PDU Length	Yes	32KB
Replacement Policy	Yes	If the IOD is exact byte-for-byte copy of existing with same SOP Instance UID, then discard. Otherwise new IOD is added replacing previous IOD with same SOP Instance UID.
Maximum Matches on C-FIND/C-MOVE/C-GET	Yes	10,000
Maximum number of recent days to search for a C-FIND-RQ if no value is given for any of the primary index attributes	Yes	2
Maximum number of days that the ucaSSCP AE will try to send results of a Storage Commitment Request back to the requester	Yes	7

In addition, the allowed Transfer Syntaxes for each SOP Class supported by the Unified Clinical Archive can be configured on a system wide basis. Furthermore, the allowed Transfer Syntaxes can be overridden for specific Destination AE Titles. This applies to forwarding by the ucaSSCU AE's and C-MOVE operations by the ucaQSCP AE.

4 Media Interchange

The Unified Clinical Archive does not support Media Interchange.

5 Support of Extended Character Sets

The Unified Clinical Archive has support for Extended Character Sets.

Table 5-1: Character Sets Supported	
DICOM Name	**Description**
ISO_IR 6	US ASCII
ISO_IR 192	ISO 10646-1/2 (Unicode)
ISO_IR 100	ISO 8859-1 (Latin 1)

6 Security

6.1 Security Profiles

6.1.1 Basic TLS Secure Transport Profile

For future consideration

6.1.2 AES TLS Secure Transport Profile

For future consideration

6.1.3 Audit Trail Message Format Profile

For future consideration

6.1.4 Audit Trail Message Transmission Profile

For future consideration

6.2 Application Level Security

All Remote AE titles must be configured in the Unified Clinical application to request an Association.