DICOM Conformance Statement

Quentry®

Version 3.2

March 6, 2024

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2 Introduction

2.1 Audience

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

2.2 Remarks

DICOM, by itself, does not guarantee interoperability. However, the Conformance Statement facilitates a first-level validation for interoperability between different applications supporting the same DICOM functionality. The Conformance Statement should be read and understood in conjunction with the DICOM Standard [1]. However, by itself it is not guaranteed to ensure the desired interoperability and a successful interconnectivity.

The user should be aware of the following important issues:

- The comparison of different Conformance Statements is the first step towards assessing interconnectivity between Brainlab and non–Brainlab equipment.
- This Conformance Statement is not intended to replace validation with other DICOM equipment to ensure proper exchange of information intended.
- The DICOM standard will evolve to meet the users' future requirements. Brainlab reserves the right to make changes to its products or to discontinue its delivery.

2.3 Abbreviations

There are a variety of terms and abbreviations used in the document that are defined in the DICOM Standard. Abbreviations and terms are as follows:

AE	DICOM Application Entity
AET	Application Entity Title
CD	Compact Disk
CD-R	Compact Disk Recordable
DVD	Digital Versatile Disc
FSC	File-Set Creator
FSU	File-Set Updater
FSR	File-Set Reader
HD	Hard Disk
IOD	(DICOM) Information Object Definition
ISO	International Standard Organization
MOD	Magneto Optical Disk
PDU	DICOM Protocol Data Unit
Q/R	Query and Retrieve
SCU	DICOM Service Class User (DICOM client)
SCP	DICOM Service Class Provider (DICOM server)
SOP	DICOM Service-Object Pair
xBrain	Brainlab advanced file format

2.4 References

[1] Digital Imaging and Communications in Medicine (DICOM) 3.0, vol. PS 3, NEMA, 2011.
[2] Digital Imaging and Communications in Medicine (DICOM) 3.0, vol. PS 3, NEMA, 2008.

The table below addresses all supported network services used by the different application entities in Quentry. Applications only consuming data for, e.g., displaying images are marked as SCU. Applications creating data like, e.g., plans are marked as SCP.

Symbol: Meaning:
- ● User of Service (SCU)
- ■ Provider of Service (SCP)
- ●/■ Both (SCU/SCP)

SOP Classes	Quentry Desktop	Quentry Gateway
Transfer		
12-lead ECG Waveform Storage	●/■	●/■
Ambulatory ECG Waveform Storage	●/■	●/■
Arterial Pulse Waveform Storage	●/■	●/■
Autorefraction Measurements Storage	●/■	●/■
Basic Structured Display Storage	●/■	●/■
Basic Text SR Storage	●/■	●/■
Basic Voice Audio Waveform Storage	●/■	●/■
Blending Softcopy Presentation State Storage	●/■	●/■
Breast Tomosynthesis Image Storage	●/■	●/■
Cardiac Electrophysiology Waveform Storage	●/■	●/■
Chest CAD SR Storage	●/■	●/■
Colon CAD SR Storage	●/■	●/■
Color Softcopy Presentation State Storage	●/■	●/■
Comprehensive SR Storage	●/■	●/■
Computed Radiography Image Storage	●/■	●/■
CT Image Storage	●/■	●/■
Deformable Spatial Registration Storage	●/■	●/■

SOP Classes	Quentry Desktop	Quentry Gateway
Digital Intra-oral X-Ray Image Storage - For Presentation	●/■	●/■
Digital Intra-oral X-Ray Image Storage - For Processing	●/■	●/■
Digital Mammography X-Ray Image Storage - For Presentation	●/■	●/■
Digital Mammography X-Ray Image Storage - For Processing	●/■	●/■
Digital X-Ray Image Storage - For Presentation	●/■	●/■
Digital X-Ray Image Storage - For Processing	●/■	●/■
Encapsulated CDA Storage	●/■	●/■
Encapsulated PDF Storage	●/■	●/■
Enhanced CT Image Storage	●/■	●/■
Enhanced MR Color Image Storage	●/■	●/■
Enhanced MR Image Storage	●/■	●/■
Enhanced PET Image Storage	●/■	●/■
Enhanced SR Storage	●/■	●/■
Enhanced US Volume Storage	●/■	●/■
Enhanced XA Image Storage	●/■	●/■
Enhanced XRF Image Storage	●/■	●/■
General Audio Waveform Storage	●/■	●/■
General ECG Waveform Storage	●/■	●/■
Grayscale Softcopy Presentation State Storage	●/■	●/■
Hemodynamic Waveform Storage	●/■	●/■
Implantation Plan SR Storage	●/■	●/■
Intraocular Lens Calculations Storage	●/■	●/■
Intravascular Optical Coherence Tomography Image Storage - For Presentation	●/■	●/■
Intravascular Optical Coherence Tomography Image Storage - For Processing	●/■	●/■
Keratometry Measurements Storage	●/■	●/■
Key Object Selection Document Storage	●/■	●/■
Lensometry Measurements Storage	●/■	●/■
Macular Grid Thickness and Volume Report Storage	●/■	●/■
Mammography CAD SR Storage	●/■	●/■

SOP Classes	Quentry Desktop	Quentry Gateway
MR Image Storage	●/■	●/■
MR Spectroscopy Storage	●/■	●/■
Multi-frame Grayscale Byte Secondary Capture Storage	●/■	●/■
Multi-frame Grayscale Word Secondary Capture Storage	●/■	●/■
Multi-frame Single Bit Secondary Capture Storage	●/■	●/■
Multi-frame True Color Secondary Capture Storage	●/■	●/■
Nuclear Medicine Image Storage	●/■	●/■
Nuclear Medicine Image Storage (Retired)	●/■	●/■
Ophthalmic Axial Measurements Storage	●/■	●/■
Ophthalmic Photography 16 Bit Image Storage	●/■	●/■
Ophthalmic Photography 8 Bit Image Storage	●/■	●/■
Ophthalmic Tomography Image Storage	●/■	●/■
Ophthalmic Visual Field Static Perimetry Measurements Storage	●/■	●/■
Positron Emission Tomography Image Storage	●/■	●/■
Procedure Log Storage	●/■	●/■
Pseudo-Color Softcopy Presentation State Storage	●/■	●/■
Raw Data Storage	●/■	●/■
Real World Value Mapping Storage	●/■	●/■
Respiratory Waveform Storage	●/■	●/■
RT Beams Treatment Record Storage	●/■	●/■
RT Brachy Treatment Record Storage	●/■	●/■
RT Dose Storage	●/■	●/■
RT Image Storage	●/■	●/■
RT Ion Beams Treatment Record Storage	●/■	●/■
RT Ion Plan Storage	●/■	●/■
RT Plan Storage	●/■	●/■
RT Structure Set Storage	●/■	●/■
RT Treatment Summary Record Storage	●/■	●/■
Secondary Capture Image Storage	●/■	●/■
Segmentation Storage	●/■	●/■

SOP Classes	Quentry Desktop	Quentry Gateway
Spatial Fiducials Storage	●/■	●/■
Spatial Registration Storage	●/■	●/■
Spectacle Prescription Report Storage	●/■	●/■
Standalone Curve Storage (Retired)	●/■	●/■
Standalone Modality LUT Storage (Retired)	●/■	●/■
Standalone Overlay Storage (Retired)	●/■	●/■
Standalone PET Curve Storage (Retired)	●/■	●/■
Standalone VOI LUT Storage (Retired)	●/■	●/■
Stereometric Relationship Storage	●/■	●/■
Subjective Refraction Measurements Storage	●/■	●/■
Surface Segmentation Storage	●/■	●/■
Ultrasound Image Storage	●/■	●/■
Ultrasound Image Storage (Retired)	●/■	●/■
Ultrasound Multi-frame Image Storage	●/■	●/■
Ultrasound Multi-frame Image Storage (Retired)	●/■	●/■
Video Endoscopic Image Storage	●/■	●/■
Video Microscopic Image Storage	●/■	●/■
Video Photographic Image Storage	●/■	●/■
Visual Acuity Measurements Storage	●/■	●/■
VL Endoscopic Image Storage	●/■	●/■
VL Microscopic Image Storage	●/■	●/■
VL Photographic Image Storage	●/■	●/■
VL Slide-Coordinates Microscopic Image Storage	●/■	●/■
VL Whole Slide Microscopy Image Storage	●/■	●/■
XA/XRF Grayscale Softcopy Presentation State Storage	●/■	●/■
X-Ray 3D Angiographic Image Storage	●/■	●/■
X-Ray 3D Craniofacial Image Storage	●/■	●/■
X-Ray Angiographic Bi-Plane Image Storage (Retired)	●/■	●/■
X-Ray Angiographic Image Storage	●/■	●/■
X-Ray Radiation Dose SR Storage	●/■	●/■

SOP Classes	Quentry Desktop	Quentry Gateway
X-Ray Radiofluoroscopic Image Storage	●/■	●/■
Query Retrieve		
Patient Root Query/Retrieve Information Model - FIND	●/■	●/■
Patient Root Query/Retrieve Information Model - MOVE	●/■	●/■
Patient Root Query/Retrieve Information Model - GET	●/■	●/■
Study Root Query/Retrieve Information Model - FIND	●/■	●/■
Study Root Query/Retrieve Information Model - MOVE	●/■	●/■
Study Root Query/Retrieve Information Model - GET	●/■	●/■

Table 2-1: Network services supported by Quentry

The next table addresses all supported Media Storage Application Profiles used by the different application entities in Quentry.

Symbol:	Meaning:
●	Read Files (FSR)
■	Write Files (FSC or FSU)
●/■	Both (FSR/FSC or FSU)

Media Storage Application Profile	Quentry Portal	Quentry Desktop
Brainlab General Purpose Media	●/■	●/■

Table 2-2: Media Services supported by Quentry

3 Networking

3.1 Implementation Model

3.1.1 Application Data Flow Diagram

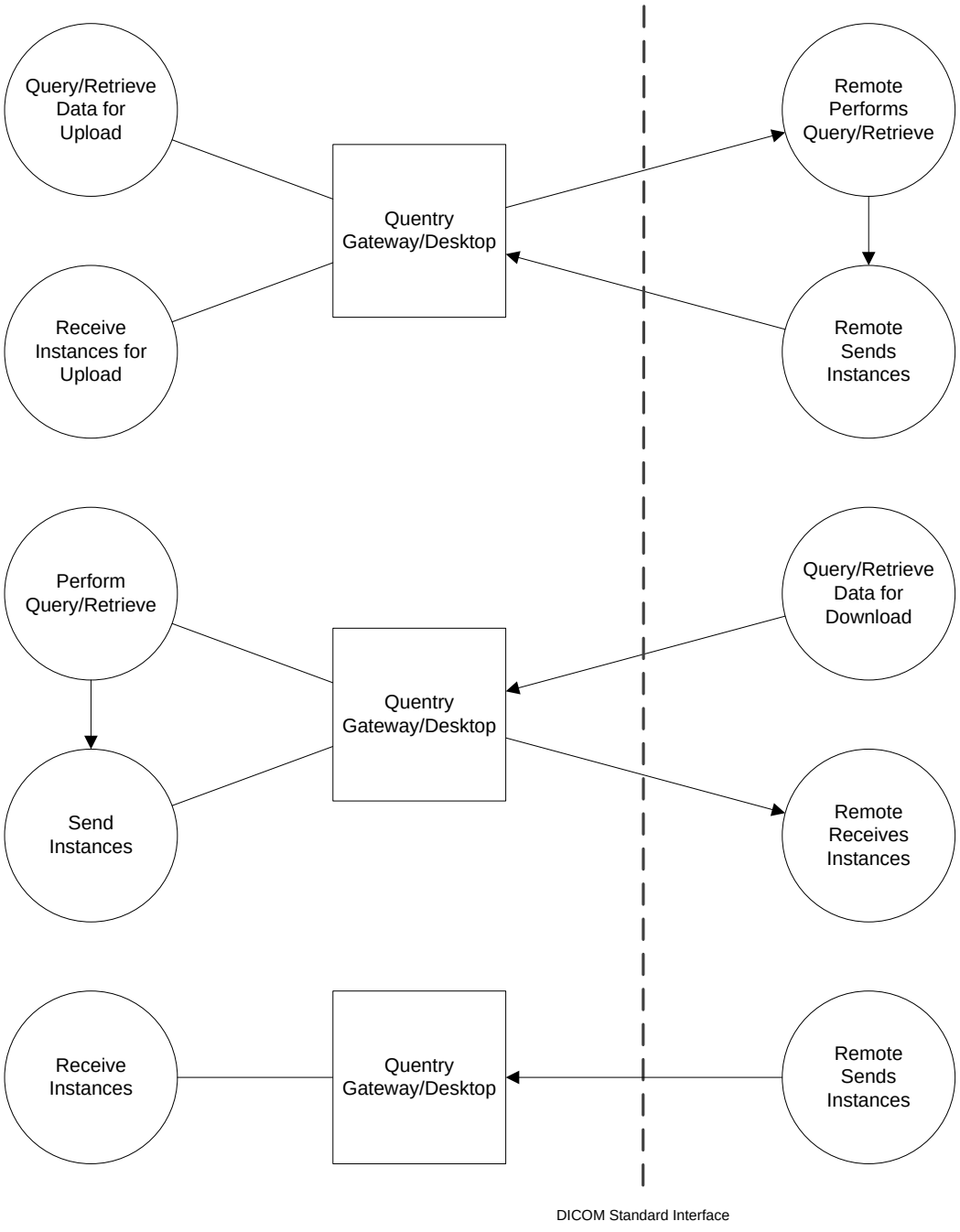

Figure 3-1: Quentry Desktop/Gateway Application Flow Diagram

3.1.2 Functional Definition of Application Entity (AE)

Some communications and data transfer with remote AEs are accomplished utilizing the DICOM protocol over a network using the TCP/IP protocol stack.

- **Quentry Gateway:**
  The Quentry Gateway is a service. It receives DICOM instances via the DICOM Storage Service class and automatically uploads them with a registered account to Quentry. It also allows querying and retrieving the data stored in the registered account with the DICOM Query/Retrieve Service Class.
  Additionally it provides a web interface either to query a registered archive and to upload the selected instances or to download selected instances into the registered archive.

- **Quentry Desktop:**
  The Quentry Desktop provides the same functionality as the Quentry Gateway. Additionally it provides a user interface to query other DICOM nodes, to select series for upload and to upload the retrieved data to Quentry.

3.1.3 Sequencing Of Real World Activities

3.1.3.1 Activity - Query/Retrieve Data for Upload:

(1) The user starts the Quentry Desktop.
(2) The user searches for data.
  (a) Send DICOM Query/Retrieve C-FIND requests to get the matching series
(3) The user selects the series to upload:
  (a) Send DICOM C-MOVE request(s) for the selected series.
  (b) Receive DICOM Storage C-STORE requests with the requested instances.
  (c) Send DICOM Storage C-STORE responses.
  (d) Wait to receive final DICOM C-MOVE response.
(4) The Quentry Desktop uploads the retrieved data to Quentry:

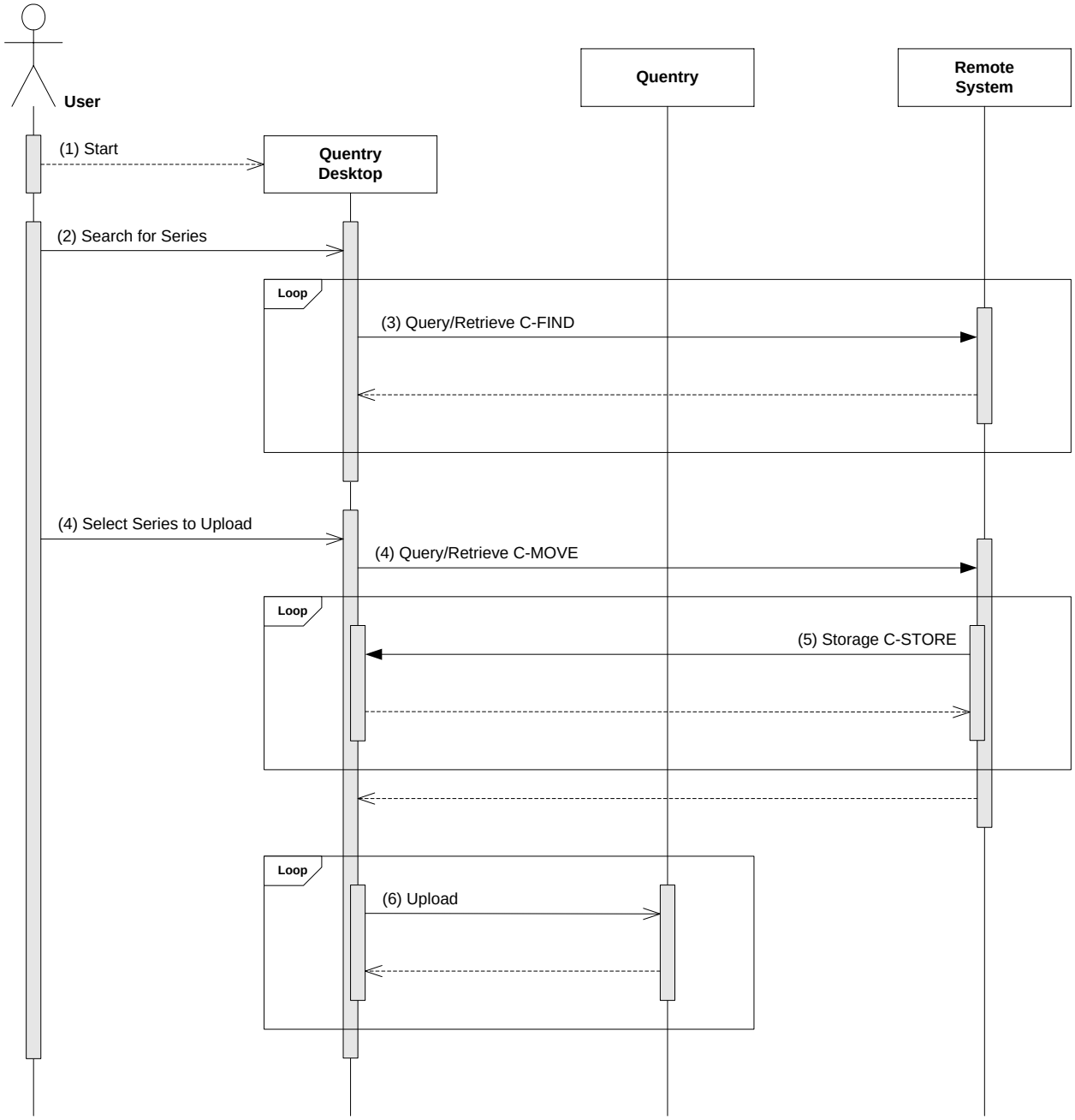

Figure 3-2: Sequencing of Quentry Desktop.

3.2 Application Entity Specifications

3.2.1 Quentry Common Specifications

This section describes the specifications valid for all Quentry application entities.

3.2.1.1 SOP Classes and Transfer Syntaxes

All Quentry applications and performers send or receive a C-ECHO request in order to test the connections to remote AEs. They provide standard conformance to the following SOP Classes:

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

Table 3-1: Quentry commonly supported Verification SOP Classes

In the following table all transfer syntaxes supported by any of the applications are listed:

List Name	List Short Name
Transfer Syntax Name	**Transfer Syntax UID**
Transfer Syntaxes With No Compression	**NOCOMP**
DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1
DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
Transfer Syntaxes With Lossless Compression	**COMP**
DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1
DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14)	1.2.840.10008.1.2.4.70
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
RLE Lossless	1.2.840.10008.1.2.5
Transfer Syntaxes with RLE Compression	**RLE**
RLE Lossless	1.2.840.10008.1.2.5
DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1
DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
Only Implicit Transfer Syntaxes	**IMPL**
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
Transfer Syntaxes With Lossy Compression	**LOSSY**
DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1
DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14)	1.2.840.10008.1.2.4.70
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51

List Name	List Short Name
Transfer Syntax Name	**Transfer Syntax UID**
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91

Table 3-2: Quentry commonly supported Transfer Syntaxes (for association negotiation)

The transfer syntaxes are organized in so-called transfer syntax lists. For each presentation context specified by an application or performer, the name respectively short sign of the transfer syntax list is mentioned instead of repeating all the transfer syntaxes.

Some Quentry applications and performers support a set of Storage SOP Classes. The following table contains all commonly supported Storage SOP Classes with the mapping to the accepted respectively proposed Transfer Syntax list.

SOP Class Name	SOP Class UID	Transfer Syntax
Image Storage SOP Classes		
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	LOSSY
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	LOSSY
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	LOSSY
Digital Intra-oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	LOSSY
Digital Intra-oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	LOSSY
Digital Mammography X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	LOSSY
Digital Mammography X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	LOSSY
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	LOSSY
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	LOSSY
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	LOSSY
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	LOSSY
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	LOSSY
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	LOSSY
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	LOSSY
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	LOSSY
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	LOSSY
Intravascular Optical Coherence Tomography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.14.1	LOSSY
Intravascular Optical Coherence Tomography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.14.2	LOSSY
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	LOSSY
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	LOSSY
Multi-frame Grayscale Byte Secondary Capture Storage	1.2.840.10008.5.1.4.1.1.7.2	LOSSY
Multi-frame Grayscale Word Secondary Capture Storage	1.2.840.10008.5.1.4.1.1.7.3	LOSSY
Multi-frame Single Bit Secondary Capture Storage	1.2.840.10008.5.1.4.1.1.7.1	LOSSY
Multi-frame True Color Secondary Capture Storage	1.2.840.10008.5.1.4.1.1.7.4	LOSSY
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	LOSSY

SOP Class Name	SOP Class UID	Transfer Syntax
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	LOSSY
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	LOSSY
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	LOSSY
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	LOSSY
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	LOSSY
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	COMP
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	LOSSY
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	LOSSY
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	LOSSY
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	LOSSY
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	LOSSY
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	LOSSY
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	LOSSY
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	LOSSY
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	LOSSY
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	LOSSY
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	LOSSY
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	LOSSY
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	LOSSY
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	LOSSY
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	LOSSY
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	LOSSY
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	LOSSY
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	LOSSY
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	LOSSY
Non-Image Storage SOP Classes		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	NOCOMP
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	NOCOMP
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	NOCOMP
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	NOCOMP
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	NOCOMP
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	NOCOMP
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	NOCOMP
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	NOCOMP
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	NOCOMP
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	NOCOMP
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	NOCOMP
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	NOCOMP
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	NOCOMP
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	NOCOMP

SOP Class Name	SOP Class UID	Transfer Syntax
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	NOCOMP
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	NOCOMP
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	NOCOMP
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	NOCOMP
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	NOCOMP
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	NOCOMP
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	NOCOMP
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	NOCOMP
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	NOCOMP
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	NOCOMP
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	NOCOMP
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	NOCOMP
Macular Grid Thickness and Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	NOCOMP
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	NOCOMP
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	NOCOMP
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	NOCOMP
Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	NOCOMP
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	NOCOMP
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	NOCOMP
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	NOCOMP
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	NOCOMP
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	NOCOMP
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	COMP
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	NOCOMP
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	NOCOMP
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	NOCOMP
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	IMPL[1]
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	NOCOMP
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	NOCOMP
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	NOCOMP
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	NOCOMP
Standalone Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.129	NOCOMP
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	NOCOMP
Standalone Overlay Storage (Retired)	1.2.840.10008.5.1.4.1.1.8	NOCOMP
Standalone PET Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.129	NOCOMP
Standalone VOI LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.11	NOCOMP
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	NOCOMP

[1] RT Structure Set Instances contains Contour Data (3006,0050) attributes having a VR of DS and a VM of 1-n. Implicit Little Endian transfer syntax allows to store the contour data with a doubled length in comparison to explicit transfer syntax (4 byte length vs. 2 byte length field).

SOP Class Name	SOP Class UID	Transfer Syntax
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	NOCOMP
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	NOCOMP
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	NOCOMP

Table 3-3: Quentry commonly supported Storage SOP Classes with Transfer Syntax mapping

Some Quentry applications and performers support DICOM Query/Retrieve. The following table contains all commonly supported SOP Classes with the mapping to the accepted respectively proposed Transfer Syntax list.

SOP Class Name	SOP Class UID	Transfer Syntax
FIND SOP Classes		
Patient Root Query/Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	NOCOMP
Study Root Query/Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	NOCOMP
MOVE SOP Classes		
Patient Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	NOCOMP
Study Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	NOCOMP
GET SOP Classes		
Patient Root Query/Retrieve Information Model – GET	1.2.840.10008.5.1.4.1.2.1.3	NOCOMP
Study Root Query/Retrieve Information Model – GET	1.2.840.10008.5.1.4.1.2.2.3	NOCOMP

Table 3-4: Quentry commonly supported Query/Retrieve SOP Classes with Transfer Syntax mapping

The usage of these SOP Classes is specified in the sections with the detailed application specifications.

3.2.1.2 Association Initiation Policy

3.2.1.2.1 Activity - Verification

3.2.1.2.1.1 Description and Sequencing of Activities

Quentry applications initiate an association with the intention to use the Verification Service Class.

3.2.1.2.1.2 Proposed Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All SCU SOP Classes as listed in Table 3-1	NOCOMP (see Table 3-2)	SCU	None

Table 3-5: Quentry commonly proposed Presentation Contexts.

3.2.1.2.1.3 SOP Specific Conformance

Quentry applications provide standard conformance to the DICOM Verification Service Class. No extended negotiation is implemented.

3.2.1.3 Association Acceptance Policy

3.2.1.3.1 Activity – Verification

3.2.1.3.1.1 Description and Sequencing of Activities

Quentry applications accept an association with the intention to use the Verification Service Class.

3.2.1.3.1.2 Proposed Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All SCP SOP Classes as listed in Table 3-1	NOCOMP (see Table 3-2)	SCP	None

Table 3-6: Quentry commonly accepted Presentation Contexts.

3.2.1.3.1.3 SOP Specific Conformance

Quentry applications provide standard conformance to the DICOM Verification Service Class. No extended negotiation is implemented.

3.2.1.4 Association Policies

3.2.1.4.1 General

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

Application Context Name	1.2.840.10008.3.1.1.1

Table 3-7: Quentry commonly proposed Application Context Name

3.2.1.4.2 Number of Associations

Maximum number of simultaneous Associations (Initiator)	1
Maximum number of simultaneous Associations (Acceptor)	1

Table 3-8: Quentry commonly supported number of associations

3.2.1.4.3 Asynchronous Nature

Quentry applications by default do not support asynchronous communication (multiple outstanding transactions over a single association).

3.2.1.5 Association Acceptance Policy

3.2.1.5.1.1 Transfer Syntax Selection Policy

The Quentry applications accept transfer syntaxes with no compression (explicit before implicit) before those with lossless compression and at least those with lossless compression.

3.2.2 Quentry Gateway Specification

The Quentry Gateway is a service to upload and to download data to and from Quentry:

- Receives instances via Storage Service Class and automatically uploads them to an account either configured as default or selected by routing rules.
- Allows download of data via DICOM Query/Retrieve.
- Provides a web interface either to query an archive and to upload the selected instances or to download selected instances into an archive.

3.2.2.1 SOP Classes and Transfer Syntaxes

The Quentry Gateway allows query, retrieve and storage of DICOM data. It provides standard conformance to the following SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
All Storage SOP Class Names and UIDs as listed in Table 3-3		Yes	Yes
All Query/Retrieve FIND and MOVE SOP Class Names and UIDs as listed in Table 3-4		Yes	Yes
All Query/Retrieve GET SOP Class Names and UIDs as listed in Table 3-4		No	Yes

Table 3-9: Quentry Gateway supported SOP Classes

3.2.2.2 Association Policies

3.2.2.2.1 Implementation Identifying Information

The implementation information for this Application Entity is:

Implementation Class UID	1.2.276.0.20.4.1.3.3.x.x.x.x
Implementation Version Name	QuentryGateway

3.2.2.3 Association Initiation Policy

The Quentry Gateway initiates an association in this case:

- *Query/Retrieve for Upload*
  A Quentry user wants to upload data stored on a remote DICOM node

- *Send Instances*:
  Quentry Gateway sends requested instances.

3.2.2.3.1 Activity – Query/Retrieve for Upload

3.2.2.3.1.1 Description and Sequencing of Activities

A Quentry user actively queries a remote system for instances he/she wants to upload. After selecting the instances the user initiates a C-MOVE transferring them to the Quentry Gateway. The received instances will be uploaded automatically to Quentry.

3.2.2.3.1.2 Proposed Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Query/Retrieve FIND and MOVE SOP Classes as listed in Table 3-4	NOCOMP (see Table 3-2)	SCU	None

Table 3-10: Quentry Gateway proposed Presentation Contexts – Query/Retrieve for Upload

3.2.2.3.1.3 SOP Specific Conformance

The Quentry Gateway provides standard conformance to the DICOM Query/Retrieve FIND and MOVE SOP Classes. No extended negotiation is implemented.

3.2.2.3.2 Activity – Send Instances

3.2.2.3.2.1 Description and Sequencing of Activities

Due to a DICOM Query/Retrieve C-MOVE request a number of DICOM Storage requests are performed to send the requested instances to the requested move destination.

3.2.2.3.2.2 Proposed Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Storage SOP Classes as listed in Table 3-3	All transfer syntaxes as associated to the Storage SOP Classes in Table 3-3	SCU	None

Table 3-11: Quentry Gateway proposed Presentation Contexts – Send Instances

3.2.2.3.2.3 SOP Specific Conformance

The Quentry Gateway provides standard conformance to the DICOM Storage SOP Classes. No extended negotiation is implemented.

3.2.2.4 Association Acceptance Policy

The Quentry Gateway accepts an association in this case:

- *Query/Retrieve Instances*:
  The Quentry Gateway allows other DICOM nodes to query and retrieve instances.

- *Receive Instances*:
  The Quentry Gateway accepts storage requests from other DICOM nodes for upload to Quentry.

3.2.2.4.1 Activity – Query/Retrieve Instances

3.2.2.4.1.1 Description and Sequencing of Activities

The Quentry Gateway accepts DICOM C-FIND requests to query and DICOM C-MOVE and C-GET requests to retrieve instances stored in Quentry

3.2.2.4.1.2 Accepted Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Query/Retrieve SOP Classes as listed in Table 3-4	NOCOMP (see Table 3-2)	SCP	Yes

Table 3-12: Quentry Gateway accepted Presentation Contexts – Query/Retrieve Instances

3.2.2.4.1.3 SOP Specific Conformance

The Quentry Gateway provides standard conformance to the DICOM Query/Retrieve SOP Classes with extensions to the Standard Patient and Study Root Query/Retrieve Information Model – FIND as outlined in section **Error! Reference source not found.**.

All DICOM Query/Retrieve SCP functionality requires authentication using the Basic User Identity Association Profile, i.e. it uses the User Identity association negotiation sub-item, for User-Identity-Type of 1 or 2.

3.2.2.4.2 Activity – Receive Instances

3.2.2.4.2.1 Description and Sequencing of Activities

The Quentry Gateway accepts DICOM Storage requests from other DICOM nodes to upload the instances to Quentry. Received instances will be either uploaded to a configured default account or to an account selected by a set of routing rules.

3.2.2.4.2.2 Accepted Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Storage SOP Classes as listed in Table 3-3	All transfer syntaxes as associated to the Storage SOP Classes in Table 3-3	SCP	None

Table 3-13: Quentry Gateway accepted Presentation Contexts – Receive Instances

3.2.2.4.2.3 SOP Specific Conformance

The Quentry Gateway provides standard conformance to the DICOM Storage SOP Classes. No extended negotiation is supported.

3.2.2.5 Configuration

The Quentry Gateway does not allow configuration of C-MOVE destinations. A C-MOVE request will always return the response to the IP of the caller and to the same port that Quentry Gateway is listening on.

3.2.3 Quentry Desktop Specification

The Quentry Desktop is a desktop application to upload and to download data to and from Quentry:

- Allows to query archives and to upload the selected and retrieved instances.
- Allows download of data via DICOM Query/Retrieve
- Receives instances via Storage Service Class. A Quentry user has to log in and manually upload it to a Quentry account.

3.2.3.1 SOP Classes and Transfer Syntaxes

The Quentry Desktop allows query, retrieve and storage of DICOM data. It provides standard conformance to the following SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
All Storage SOP Class Names and UIDs as listed in Table 3-3		Yes	Yes
All Query/Retrieve FIND and MOVE SOP Class Names and UIDs as listed in Table 3-4		Yes	Yes
All Query/Retrieve GET SOP Class Names and UIDs as listed in Table 3-4		No	Yes

Table 3-14: Quentry Desktop supported SOP Classes

3.2.3.2 Association Policies

3.2.3.2.1 Implementation Identifying Information

The implementation information for this Application Entity is:

Implementation Class UID	1.2.276.0.20.4.1.4.3.x.x.x.x
Implementation Version Name	QuentryDesktop

3.2.3.3 Association Initiation Policy

The Quentry Desktop initiates an association in this case:

- *Query/Retrieve for Upload*
  A Quentry user wants to upload data stored on a remote DICOM node

- *Send Instances*:
  The Quentry Gateway sends requested instances.

3.2.3.3.1 Activity – Query/Retrieve for Upload

3.2.3.3.1.1 Description and Sequencing of Activities

A Quentry user actively queries a remote system for instances he/she wants to upload. After selecting the instances the user initiates a C-MOVE transferring them to the Quentry Desktop application. The received instances will be stored in a queue and the user actively has to initiate the upload to Quentry.

3.2.3.3.1.2 Proposed Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Query/Retrieve FIND and MOVE SOP Classes as listed in Table 3-4	NOCOMP (see Table 3-2)	SCU	None

Table 3-15: Quentry Desktop proposed Presentation Contexts – Query/Retrieve for Upload

3.2.3.3.1.3 SOP Specific Conformance

The Quentry Desktop provides standard conformance to the DICOM Query/Retrieve FIND and MOVE SOP Classes. No extended negotiation is implemented.

3.2.3.3.2 Activity – Send Instances

3.2.3.3.2.1 Description and Sequencing of Activities

Due to a DICOM Query/Retrieve C-MOVE request a number of DICOM Storage requests are performed to send the requested instances to the requested move destination.

3.2.3.3.2.2 Proposed Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Storage SOP Classes as listed in Table 3-3	All transfer syntaxes as associated to the Storage SOP Classes listed in Table 3-3	SCU	None

Table 3-16: Quentry Desktop proposed Presentation Contexts – Send Instances

3.2.3.3.2.3 SOP Specific Conformance

The Quentry Desktop provides standard conformance to the DICOM Storage SOP Classes. No extended negotiation is implemented.

3.2.3.4 Association Acceptance Policy

The Quentry Desktop accepts an association in this case:

- *Query/Retrieve Instances*:
  The Quentry Desktop allows other DICOM nodes to query and retrieve instances.

- *Receive Instances*:
  The Quentry Desktop accepts storage requests from other DICOM nodes for upload to Quentry.

3.2.3.4.1 Activity – Query/Retrieve Instances

3.2.3.4.1.1 Description and Sequencing of Activities

The Quentry Desktop accepts DICOM C-FIND requests to query and DICOM C-MOVE and C-GET requests to retrieve instances stored in Quentry

3.2.3.4.1.2 Accepted Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Query/Retrieve SOP Classes as listed in Table 3-4	NOCOMP (see Table 3-2)	SCP	Yes

Table 3-17: Quentry Desktop accepted Presentation Contexts – Query/Retrieve Instances

3.2.3.4.1.3 SOP Specific Conformance

The Quentry Desktop provides standard conformance to the DICOM Query/Retrieve SOP Classes with extensions to the Standard Patient and Study Root Query/Retrieve Information Model – FIND as outlined in section **Error! Reference source not found.**.

3.2.3.4.2 Activity – Receive Instances

3.2.3.4.2.1 Description and Sequencing of Activities

The Quentry Desktop accepts DICOM Storage requests from other DICOM nodes to upload the instances to Quentry. Received instances will be queued and the user has to log in and to upload manually the queued data to Quentry.

3.2.3.4.2.2 Accepted Presentation Contexts

Presentation Context Table			
Abstract Syntax	**Transfer Syntax**	**Role**	**Ext. Neg**
All Storage SOP Classes as listed in Table 3-3	All transfer syntaxes as associated to the Storage SOP Classes listed in Table 3-3	SCP	None

Table 3-18: Quentry Desktop accepted Presentation Contexts – Receive Instances

3.2.3.4.2.3 SOP Specific Conformance

The Quentry Desktop provides standard conformance to the DICOM Storage SOP Classes. No extended negotiation is supported.

3.2.3.5 Configuration

The Quentry Desktop does not allow configuration of C-MOVE destinations. A C-MOVE request will always return the response to the IP of the caller and to the same port that Quentry Desktop is listening on.

4 Media Interchange

4.1.1 Functional Definitions of AE's

4.1.1.1 Functional Definition of Quentry Portal

- *Upload*:
  The Quentry Portal allows the user to select DICOM files[2]. The files will be scanned and all supported and valid DICOM instances will be presented to the user.
  Finally the user can select one or more series and start the upload.

[2] Because Quentry is a browser-based software security restrictions do not allow scanning a file system folder or reading a DICOMDIR and loading the addressed DICOM instances. This is the reason the user has to provide files for upload and a zip file for download.

- *Download*:
  The Quentry Portal allows selecting one or more series for download. All instances will be packed into a single zip file. The user has to specify a destination folder and a zip file name on the file system and can start the download.

4.1.1.2 Functional Definition of Quentry Desktop

- *Upload*:
  The Quentry Desktop allows the user to select a DICOM medium, e.g. a CD, a DVD or a folder in the file system. If the medium contains a DICOMDIR it is evaluated and all indexed instances will be scanned and presented to the user.
  If there is no DICOMDIR, the application will scan the files beneath the selected folder and will present to the user all DICOM instances that are supported and valid.
  Finally the user can select one or more series and start the upload.

- *Download*:
  The Quentry Desktop also allows selecting one or more series for download. Then the user needs to specify a destination folder on the file system and can start the download. All DICOM instances will be saved as files to the destination folder.

5 Security Profiles

5.1 Security Profiles

Both Quentry Gateway and Quentry Desktop support the Basic User Identity Association Profile.

5.2 Association Level Security

None supported.

5.3 Application Level Security

Quentry Portal, Quentry Gateway and Quentry Desktop de-identify data according to the DICOM Attribute Confidentiality Profile De-Identifier of the DICOM Standard 2011.
De-identification is done according to BASIC APPLICATION LEVEL CONFIDENTIALITY PROFILE.
Quentry retains the DICOM tags according to the following:

- Clean Descriptors Option (keeping only Series Description (0008,103E))
- Retain Safe Private Option
- Retain Longitudinal Temporal Information Option (*Optional)
- Retain Patient Characteristics Option (*Optional)

*Quentry settings section allows the user to change the default behavior and to avoid the “Retain Longitudinal Temporal Information Option” and the “Retain Patient Characteristics Option” by deselecting the appropriate checkboxes.

Note: the behavior may be further changed by configuration file for specific application. Please make sure to check your deployment setting.

During de-identification all attributes containing UIDs (VR=UI) are replaced with newly generated values, with an exception for standard declared UIDs such as SOP Class UID, Transfer Syntax UID, etc. - which are kept unchanged.

Generation of new values during de-identification, including for UIDs, is done using cryptographic hashing, producing results which are consistent between all files uploaded to the same recipient, thus keeping patient identification and referential integrity across all data uploaded to the same recipient (Quentry user / CareTeam).

The following lists the default de-identification behavior (with both retain options active):

Remove the following tags:
Acquisition Comments (0018,4000)
Acquisition Context Sequence (0040,0555)
Acquisition Protocol Description (0018,9424)
Actual Human Performers Sequence (0040,4035)
Additional Patient's History (0010,21B0)
Admission ID (0038,0010)
Admitting Diagnoses Code Sequence (0008,1084)
Admitting Diagnoses Description (0008,1080)
Affected SOP Instance UID (0000,1000)
Allergies (0010,2110)
Arbitrary (4000,0010)
Author Observer Sequence (0040,A078)
Branch of Service (0010,1081)
Cassette ID (0018,1007)
Comments on Performed Procedure Step (0040,0280)
Confidentiality Constraint on Patient Data Description (0040,3001)
Content Creator's Identification Code Sequence (0070,0086)
Contribution Description (0018,A003)
Country of Residence (0010,2150)
Current Patient Location (0038,0300)
Custodial Organization Sequence (0040,A07C)
Data Set Trailing Padding (FFFC,FFFC)
Derivation Description (0008,2111)
Detector ID (0018,700A)
Digital Signature UID (0400,0100)
Digital Signatures Sequence (FFFA,FFFA)
Discharge Diagnosis Description (0038,0040)
Distribution Address (4008,011A)
Distribution Name (4008,0119)
Ethnic Group (0010,2160)
Frame Comments (0020,9158)
Gantry ID (0018,1008)
Generator ID (0018,1005)
Graphic Annotation Sequence (0070,0001)
Human Performers Name (0040,4037)
Human Performers Organization (0040,4036)
Icon Image Sequence (0088,0200)
Identifying Comments (0008,4000)
Image Comments (0020,4000)
Image Presentation Comments (0028,4000)
Imaging Service Request Comments (0040,2400)
Impressions (4008,0300)
Institution Address (0008,0081)
Institution Code Sequence (0008,0082)
Institutional Department Name (0008,1040)

Insurance Plan Identification (0010,1050)
Intended Recipients of Results Identification Sequence(0040,1011)
Interpretation Approver Sequence (4008,0111)
Interpretation Author (4008,010C)
Interpretation Diagnosis Description (4008,0115)
Interpretation ID Issuer (4008,0202)
Interpretation Recorder (4008,0102)
Interpretation Text (4008,010B)
Interpretation Transcriber (4008,010A)
Issuer of Admission ID (0038,0011)
Issuer of Patient ID (0010,0021)
Issuer of Service Episode ID (0038,0061)
MAC (0400,0404)
Medical Alerts (0010,2000)
Medical Record Locator (0010,1090)
Military Rank (0010,1080)
Modified Attributes Sequence (0400,0550)
Modified Image Description (0020,3406)
Modifying Device ID (0020,3401)
Modifying Device Manufacturer (0020,3404)
Name of Physician {s} Reading Study (0008,1060)
Names of Intended Recipient of Results (0040,1010)
Occupation (0010,2180)
Operators' Identification Sequence (0008,1072)
Original Attributes Sequence (0400,0561)
Order Callback Phone Number (0040,2010)
Order Entered By (0040,2008)
Order Enterer Location (0040,2009)
Other Patient IDs (0010,1000)
Other Patient IDs Sequence (0010,1002)
Other Patient Names (0010,1001)
Participant Sequence (0040,A07A)
Patient Address (0010,1040)
Patient Comments (0010,4000)
Patient State (0038,0500)
Patient Transport Arrangements (0040,1004)
Patient's Birth Name (0010,1005)
Patient's Birth Time (0010,0032)
Patient's Institution Residence (0038,0400)
Patient's Insurance Plan Code Sequence (0010,0050)
Patient's Mother's Birth Name (0010,1060)
Patient's Primary Language Code Sequence (0010,0101)
Patient's Primary Language Modifier Code Sequence (0010,0102)
Patient's Religious Preference (0010,21F0)
Patient's Telephone Number (0010,2154)
Performed Location (0040,0243)
Performed Procedure Step Description (0040,0254)
Performed Procedure Step ID (0040,0253)
Performed Station AE Title (0040,0241)
Performed Station Geographic Location Code Sequence (0040,4030)
Performed Station Name (0040,0242)
Performed Station Name Code Sequence (0040,0248)
Performing Physicians' Identification Sequence (0008,1052)

Performing Physicians' Name (0008,1050)
Person Address (0040,1102)
Person Identification Code Sequence (0040,1101)
Person Telephone Numbers (0040,1103)
Physician Approving Interpretation (4008,0114)
Physician Reading Study Identification Sequence (0008,1062)
Physician(s) of Record (0008,1048)
Physician(s) of Record Identification Sequence (0008,1049)
Plate ID (0018,1004)
Pre-Medication (0040,0012)
Reason for Imaging Service Request (0040,2001)
Reason for Study (0032,1030)
Referenced Digital Signature Sequence (0400,0402)
Referenced Patient Alias Sequence (0038,1234)
Referenced Patient Sequence (0008,1120)
Referenced Performed Procedure Step Sequence (0008,1111)
Referenced SOP Instance MAC Sequence (0400,0403)
Referring Physician's Address (0008,0092)
Referring Physician's Identification Sequence (0008,0096)
Referring Physician's Telephone Numbers (0008,0094)
Region of Residence (0010,2152)
Request Attributes Sequence (0040,0275)
Requested Contrast Agent (0032,1070)
Requested Procedure Comments (0040,1400)
Requested Procedure ID (0040,1001)
Procedure Location (0040,1005)
Requesting Physician (0032,1032)
Requesting Service (0032,1033)
Responsible Organization (0010,2299)
Responsible Person (0010,2297)
Results Comments (4008,4000)
Results Distribution List Sequence (4008,0118)
Results ID Issuer (4008,0042)
Scheduled Human Performers Sequence (0040,4034)
Scheduled Patient Institution Residence (0038,001E)
Scheduled Performing Physician Identification Sequence (0040,000B)
Scheduled Performing Physician Name (0040,0006)
Scheduled Station AE Title (0040,0001)
Scheduled Station Geographic Location Code Sequence (0040,4027)
Scheduled Station Name (0040,0010)
Scheduled Station Name Code Sequence (0040,4025)
Scheduled Study Location (0032,1020)
Scheduled Study Location AE Title (0032,1021)
Service Episode Description (0038,0062)
Service Episode ID (0038,0060)
Special Needs (0038,0050)
Study Comments (0032,4000)
Study Description (0008,1030)
Study ID Issuer (0032,0012)
Text Comments (4000,4000)
Text String (2030,0020)
Time zone Offset From UTC (0008,0201)
Topic Author (0088,0910)

Topic Key Words (0088,0912)
Topic Subject (0088,0906)
Topic Title (0088,0904)
Verifying Observer Sequence (0040,A073)
Verifying Organization (0040,A027)
Visit Comments (0038,4000)
DocumentTitle (0042,0010)
EncapsulatedDocument (0042,0011)
MIMETypeOfEncapsulatedDocument (0042,0012)

Empty the following tags:
Accession Number (0008,0050)
Content Creator's Name (0070,0084)
Filler Order Number of Imaging Service Request (0040,2017)
Patient Sex Neutered (0010,2203)
Placer Order Number of Imaging Service Request (0040,2016)
Referenced Study Sequence (0008,1110)
Referring Physician's Name (0008,0090)
Requested Procedure Description (0032,1060)
Reviewer Name (300E,0008)
Scheduled Procedure Step Description (0040,0007)
Scheduled Procedure Step Location (0040,0011)
Study ID (0020,0010)
Verifying Observer Identification Code Sequence (0040,A088)

Keep original value for the following tags:
Acquisition Date (0008,0022)
Acquisition DateTime (0008,002A)
Acquisition Time (0008,0032)
Admitting Date (0038,0020)
Admitting Time (0038,0021)
Content Date (0008,0023)
Content Time (0008,0033)
Curve Date (0008,0025)
Curve Time (0008,0035)
Last Menstrual Date (0010,21D0)
Overlay Date (0008,0024)
Overlay Time (0008,0034)
Patient's Age (0010,1010)
Patient's Size (0010,1020)
Patient's Weight (0010,1030)
Performed Procedure Step Start Date (0040,0244)
Performed Procedure Step Start Time (0040,0245)
Pregnancy Status (0010,21C0)
Scheduled Procedure Step End Date (0040,0004)
Scheduled Procedure Step End Time (0040,0005)
Scheduled Procedure Step Start Date (0040,0002)
Scheduled Procedure Step Start Time (0040,0003)
Series Date (0008,0021)
Series Time (0008,0031)
Series Description (0008,103E)

Smoking Status (0010,21A0)
Study Date (0008,0020)
Study Time (0008,0030)

Generate new value for the following tags:
Acquisition Device Processing Description (0018,1400)
Contrast Bolus Agent (0018,0010)
Device Serial Number (0018,1000)
Institution Name (0008,0080)
Operators' Name (0008,1070)
Patient ID (0010,0020)
Patient's Name (0010,0010)
Patient's Birth Date (0010,0030)
Patient's Sex (0010,0040)
Person Name (0040,A123)
Protocol Name (0018,1030)
Station Name (0008,1010)
Verifying Observer Name (0040,A075)

When “Retain Longitudinal Temporal Information Option” is not active, The following attributes behavior is changed:

Remove the following tags:
Acquisition Date (0008,0022)
Acquisition DateTime (0008,002A)
Acquisition Time (0008,0032)
Admitting Date (0038,0020)
Admitting Time (0038,0021)
Curve Date (0008,0025)
Curve Time (0008,0035)
Last Menstrual Date (0010,21D0)
Overlay Date (0008,0024)
Overlay Time (0008,0034)
Performed Procedure Step Start Date (0040,0244)
Performed Procedure Step Start Time (0040,0245)
Scheduled Procedure Step End Date (0040,0004)
Scheduled Procedure Step Start Date (0040,0002)
Scheduled Procedure Step Start Time (0040,0003)
Series Date (0008,0021)
Series Time (0008,0031)

Empty the following tags:
Content Date (0008,0023)
Content Time (0008,0033)
Scheduled Procedure Step End Time (0040,0005)
Study Date (0008,0020)
Study Time (0008,0030)

When “Retain Patient Characteristics Option” is not active, The following attributes behavior is changed:

Remove the following tags:
Patient's Age (0010,1010)
Patient's Size (0010,1020)
Patient's Weight (0010,1030)
Pregnancy Status (0010,21C0)
Smoking Status (0010,21A0)