DICOM Conformance Statement
for
mediCAD 2.50 and MediQR 1.78

0 Introduction

0.1 Purpose

This DICOM Conformance Statement is written according to part PS 3.2 of the DICOM Standard.
This DICOM Conformance Statement describes the DICOM Interface of the Hectec implementation of a mediCAD/MediQR planning station.

0.2 Acronyms and Abbreviations

Acronyms and Abbreviations

ACR:	American College of Radiology
AE:	DICOM Application Entity
ASCII:	American Standard Code for Information Interchange
DICOM:	Digital Imaging and Communications in Medicine
DIMSE:	DICOM Message Service Element
DIMSE-C:	DICOM Message Service Element with Composite information objects
IOD:	DICOM Information Object Definition
ISO:	International Standard Organization
NEMA:	National Electrical Manufacturers Association
O:	Optional Key Attribute
R:	Required Key Attribute
RAE	Remote Application Entity
RWA:	Real-World Activity
PDU:	DICOM Protocol Data Unit
SCU:	DICOM Service Class User (DICOM client)
SCP:	DICOM Service Class Provider (DICOM server)
SOP:	DICOM Service-Object Pair
UID:	Unique Identifier
VR:	Value Representation

1 Implementation Model

MediCAD stores and loads DICOM-Files only from the FileSystem. No DICOM-Communication is build in mediCAD.

Whenever a DICOM-Communication is required MediQR is used as a interface between MediCAD and DICOM-Networks (e.g. PACS).

There are lots of configuration possibilities how queries (C-FIND-SCU) are performed, which tags per level, different specific charset handling options.

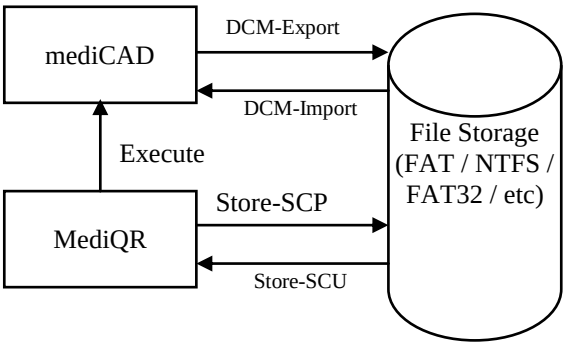
1.1 Data Flow Diagramms

Any Data flow is optional and may be active or inactive in an installation.

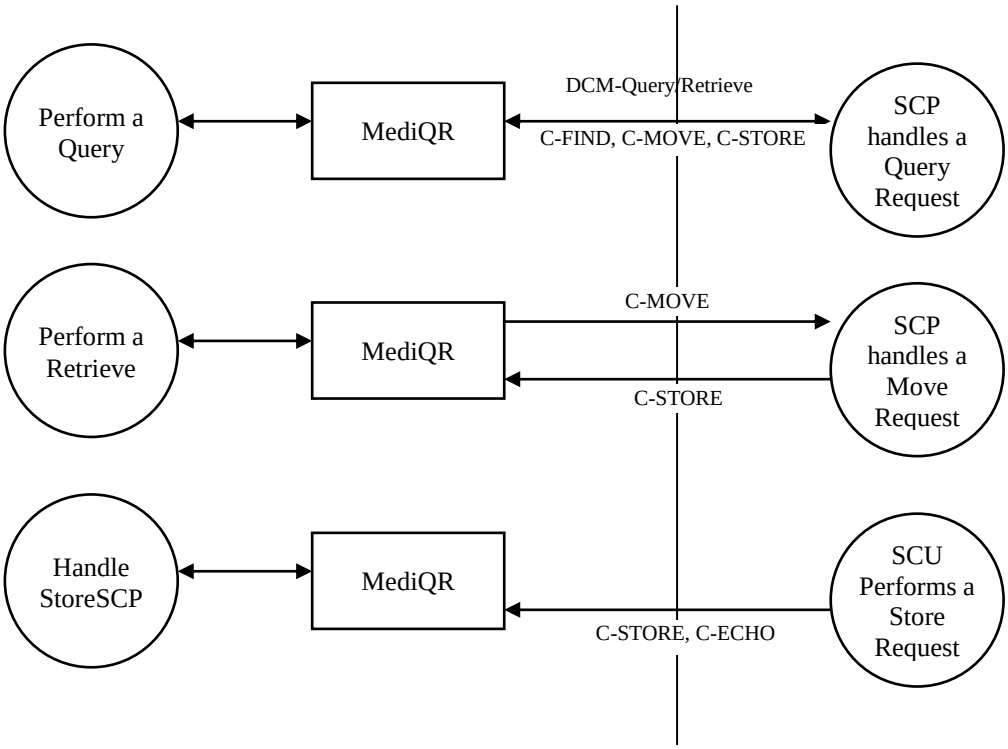
1.1.1 MediCAD-MediQR

MediQR typically stores an image as a locale file during Query/Retrieve action and then starts mediCAD with the retrieved image.

Optionally you can configure MediQR to watch a folder and send all images to a specific destination.



1.1.2 DICOM Network interface of MediQR



1.2 Functional description

Any of the following real world activities (RWA) can be combined with each other.

1.2.1 RWA I - Query Retrieve handled by 3d party software

In this RWA MediQR isn't required. The user selects an image in ist well known user interface and by a button or menu item (depends on capabilities of the 3d party software) mediCAD will start up with the selected image (by commandline parameter). After planning the result can be exported as DICOM-image into a local directory. The 3d party software is responsible for watching this folder and managing the stored files.

1.2.2 RWA II - Query/Retrieve with MediQR

MediQR is used to Retrieve images and starting mediCAD. PatientRoot or StudyRoot Query/Retrieve Model can both be used to initiate query and move requests. Depending on the implementation of the communication partner Scenario III must be active. Images will be automatically assigned to the queried items.

If the move is processed in a new association RWA III is required for image retrieval.

1.2.3 RWA III – MediQR as StorageSCP

In this case MediQR provides a permanent Storage SCP and an Echo SCP. Images are sent to it from anywhere (by C-STORE). No AET verification is made.

1.2.4 RWA IV – MediQR automatically stores images in an RAE

In this case MediQR watches its incomming folder and sends new images as a Storage-SCU via DICOM-Communication (C-STORE). No Transfersyntaxtranslation is made.

2 AE Specifications

MediCAD never creates Images with UIDs equal to source images. Usually exported images are created within a new serie belonging to the same study as the source image.
Because mediCAD never is part of a DICOM-Communication it has no own AET.

These rules are applied during export:

```
// PART10 Header
{{DCM_PART10_ITEM_VERSION      , MED_DCM_VR_OB, T1, ttAdd, 0, "\0\1", 2     } // File Meta Information Version
,{DCM_PART10_ITEM_MSSOPCLASSUID, MED_DCM_VR_UI, T1, ttAdd, 0, "1.2.840.10008.5.1.4.1.1.7", ~0u } // Media Storage SOP Class UID
,{DCM_PART10_ITEM_MSSOPINSTUID , MED_DCM_VR_UI, T1, ttGen, 0, 0, 0           } // "Media Storage SOP Instance UID"
,{DCM_PART10_ITEM_IMPLCLASSUID , MED_DCM_VR_UI, T1, ttGlobalIni, _T("AppUID"),0, 0     } // Implementation Class UID
//,{DCM_PART10_ITEM_IMPLVERNAME , MED_DCM_VR_SH, T1, ttAdd, _T("HECTEC"),0, 0     } // ImplementationVersionName

// general
// patient
,{GE(0010,0020), MED_DCM_VR_LO, T1, ttCopyAdd, sPI_PID  , "" , 0   } // PatientID
,{GE(0010,0010), MED_DCM_VR_PN, T2, ttCopyAdd, sPI_PN, "" , 0   } // PatientsName
,{GE(0010,0030), MED_DCM_VR_DA, T2, ttCopyAdd, sPI_BirthD  , "" , 0   } // PatientsBirthDate
,{GE(0010,0040), MED_DCM_VR_CS, T2, ttCopyAdd, sPI_Sex    , "" , 0   } // PatientsSex
,{GE(0010,1020), MED_DCM_VR_DS, T3, ttCopy , sPI_Height    , "" , 0   } // PatientsSize
,{GE(0010,1030), MED_DCM_VR_DS, T3, ttCopy , sPI_Weight , "" , 0   } // PatientsWeight

// study
,{GE(0020,000D), MED_DCM_VR_UI, T1, ttCopyGenFlagged, sSI_StudyUID, 0 , 0  } // StudyInstanceUID
,{GE(0020,0010), MED_DCM_VR_SH, T1, ttCopyAdd , sSI_StudyID , "", ~0u         } // StudyID

,{GE(0008,0020), MED_DCM_VR_DA, T2, ttCopyGenFlagged , sSI_StudyCreationD, 0 , 0   } // StudyDate
,{GE(0008,0030), MED_DCM_VR_TM, T2, ttCopyGenFlagged , sSI_StudyCreationT , 0 , 0   } // StudyTime
,{GE(0008,1030), MED_DCM_VR_LO, T2, ttCopyAdd , _T("#Dcm.StudyDesc"), "", 0     } // StudyDescription
,{GE(0008,0050), MED_DCM_VR_SH, T2, ttCopyAdd , _T("#AccessID"), "", 0         } // Accession Number
,{GE(0008,1050), MED_DCM_VR_PN, T2, ttCopyAdd  ,sPI_Doc, "", ~0u          } // Performing physicans name (=dialog)
,{GE(0008,0090), MED_DCM_VR_PN, T2, ttCopyAdd , _T("#Dcm.RefPhys") , "", 0         } // Rerfering Physicans Name (from source)

// serie
,{GE(0008,0060), MED_DCM_VR_CS, T1, ttAdd  , 0/*_T("Modality")*/ , "OT", 2       } // Modality; also in SC image
,{GE(0008,0021), MED_DCM_VR_DA, T3, ttGen  , 0 , "yyyymmdd",0   } // Series Date
,{GE(0008,0031), MED_DCM_VR_TM, T3, ttGen  , 0 , "hhmmss.frac",0   } // Series Time
,{GE(0020,000E), MED_DCM_VR_UI, T1, ttGen  , 0 , 0, 0          } // SeriesInstanceUID
,{GE(0020,0011), MED_DCM_VR_IS, T1, ttCopyAdd , sRI_SeriesID  , "1", ~0u         } // Series Number
,{GE(0020,0011), MED_DCM_VR_IS, T1|AG, ttAdd , 0  , "2000", ~0u         } // Series Number, agfa wan's a higher sumbber so it must be fixed

,{GE(0008,103E), MED_DCM_VR_LO, T3, ttAppend     , sPI_Desc, 0, ~0u         } // SeriesDescription // not "SeriesDesc"
,{GE(0018,1030), MED_DCM_VR_LO, T3, ttResource, 0, "@30023", ~0u     } // Protocol = series desc
,{GE(0020,0060), MED_DCM_VR_CS, T2, ttAdd  , 0 , "" ,  0,        } // Laterality get =""
// SOP Common
,{GE(0008,0018), MED_DCM_VR_UI, T1, ttGen  , 0 , 0,0           } // SOPInstanceUID
,{GE(0008,0016), MED_DCM_VR_UI, T1, ttAdd  , 0 , "1.2.840.10008.5.1.4.1.1.7", ~0 } // SOPClassUID = SC
,{GE(0008,0005), MED_DCM_VR_CS, T1C, ttCopy , sGI_CHARSET, "ISO_IR 100",  0  } // Specific Character Set  (copy -> cadd)
,{GE(0020,0013), MED_DCM_VR_IS, T1, ttCopyAdd , sII_ImageID , "1", ~0u        } // Image Number (=offset + source image number)
// image
,{GE(0008,0008), MED_DCM_VR_CS, T1, ttResource , 0 , "@30022", ~0u } // Image Type // DERIVED\\SECONDARY\\ \\DRAWING\\MEDICAD
,{GE(0008,0023), MED_DCM_VR_DA, T2, ttGen  , 0 , "yyyymmdd",0   } // Image/Content Date
,{GE(0008,0033), MED_DCM_VR_TM, T2, ttGen  , 0 , "hhmmss.frac",0} // Image/Content  Time
,{GE(0008,0022), MED_DCM_VR_DA, T3, ttCopy , sPI_AcquisitionD, 0 , 0   } // Auqisition Date
,{GE(0008,0032), MED_DCM_VR_TM, T3, ttCopy , sPI_AcquisitionT, 0 , 0   } // Auqisition Time
,{GE(0008,0032), MED_DCM_VR_TM, T3, ttCopy , sPI_AcquisitionDT, 0 , 0   } // Auqisition Time
,{GE(0008,2111), MED_DCM_VR_ST, T3, ttResource, 0, "@30023", ~0u         } // Derivation Description
,{GE(0008,2112), MED_DCM_VR_SQ, T3, ttGen  , 0, 0, 0                  } // Source Image Sequence (see TTSourceImageSequence)
,{GE(0020,4000), MED_DCM_VR_LT, T3, ttGen  , 0, "@30023", ~0u } // Image Comments
,{GE(0018,1012), MED_DCM_VR_DA, T3, ttGen  , 0, "yyyymmdd",0   } // DateOfSecondaryCapture soll= ImageDate
,{GE(0018,1014), MED_DCM_VR_TM, T3, ttGen  , 0, "hhmmss.frac",0} // TimeOfSecondaryCapture soll= ImageTime
,{GE(0028,2110), MED_DCM_VR_CS, T3, ttCopyGen, _T("#Dcm.LossyCompression"), "00", 2} // Lossy Image Compression
,{GE(0020,0020), MED_DCM_VR_CS, T2, ttAdd  , 0 , "" ,  0,        } // Patient Orientation =""
// sc image
,{GE(0008,0064), MED_DCM_VR_CS, T1, ttAdd  , 0, "WSD", 3       } // ConversionType
,{GE(0018,1010), MED_DCM_VR_LO, T3, ttRegistry , _T("ComputerName") ,
(LPSTR)_T("HKLM:SYSTEM\\CurrentControlSet\\Control\\ComputerName\\ComputerName"), 0 } // Secondary Capture Device ID
,{GE(0018,1016), MED_DCM_VR_LO, T3, ttResource, 0 , "@4", ~0u } // Sec. Dev Manuf. ?? "Hectec GmbH"
```

```
,{GE(0018,1018), MED_DCM_VR_LO, T3|EM|MX, ttRegistry , _T("V1")          ,
(LPSTR)_T("HKLM:SOFTWARE\\Siemens\\MedCom\\Config\\Modality\\Global\\SOFTWARE_PRODUCT_NAME"), 0 } // SC Manufacturers Model Name
,{GE(0018,1019), MED_DCM_VR_LO, T3, ttResource, 0, "@30031", ~0u    } // sw versions
// general equipment
,{GE(0008,0070), MED_DCM_VR_LO, T2, ttResource, 0 , "@4", ~0u } // Manufacturer
,{GE(0008,0080), MED_DCM_VR_LO, T3|EM|MX, ttRegistry , _T("V1")          ,
(LPSTR)_T("HKLM:SOFTWARE\\Siemens\\MedCom\\Config\\Site\\Global\\HOSPITAL_NAME"), 0 } // Institution Name
,{GE(0008,0081), MED_DCM_VR_ST, T3|EM|MX, ttGen , _T("COUNTRY\0") _T("DISTRICT\0") _T("CITY\0") _T("ZIP_CODE\0") _T("STREET\0")
_T("STREET_NUMBER\0") _T("PHONE_NUMBER\0") _T("\0"), (LPSTR)_T("HKLM:SOFTWARE\\Siemens\\MedCom\\Config\\Site\\Global"), 0  } //
Institution Address
,{GE(0008,1010), MED_DCM_VR_SH, T3, ttRegistry , _T("ComputerName") ,
(LPSTR)_T("HKLM:SYSTEM\\CurrentControlSet\\Control\\ComputerName\\ComputerName"), 0 } // Secondary Capture Device ID
,{GE(0008,1090), MED_DCM_VR_LO, T3|EM|MX, ttRegistry , _T("V1")          ,
(LPSTR)_T("HKLM:SOFTWARE\\Siemens\\MedCom\\Config\\Modality\\Global\\SOFTWARE_PRODUCT_NAME"), 0     } // Manufacturers Model Name
,{GE(0018,1000), MED_DCM_VR_LO, T3|EM|MX, ttRegistry , _T("V1")          ,
(LPSTR)_T("HKLM:SOFTWARE\\Siemens\\MedCom\\Config\\Site\\Global\\SERIAL_NUMBER"),  0 } // Device Serial nr
,{GE(0018,1020), MED_DCM_VR_LO, T3|EM|MX, ttRegistry , _T("V1")          ,
(LPSTR)_T("HKLM:SOFTWARE\\Siemens\\MedCom\\Config\\Modality\\Global\\SOFTWARE_VERSION"), 0 } // Leonardo SW Version
,{0}
```

2.1 MediQR Specification

MediQR provide Standard Conformance to the following Storage SOP-Classes as SCP and SCU (Note: No IOD verification is made):

Storage SOP Class Name	SOP Class UID
UID_AmbulatoryECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.3
UID_BasicTextSR	1.2.840.10008.5.1.4.1.1.88.11
UID_BasicVoiceAudioWaveformStorage	1.2.840.10008.5.1.4.1.1.9.4.1
UID_BlendingSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.4
UID_CTImageStorage	1.2.840.10008.5.1.4.1.1.2
UID_CardiacElectrophysiologyWaveformStorage	1.2.840.10008.5.1.4.1.1.9.3.1
UID_ChestCADSR	1.2.840.10008.5.1.4.1.1.88.65
UID_ColorSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.2
UID_ComprehensiveSR	1.2.840.10008.5.1.4.1.1.88.33
UID_ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1
UID_DRAFT_SRAudioStorage	1.2.840.10008.5.1.4.1.1.88.2
UID_DRAFT_SRComprehensiveStorage	1.2.840.10008.5.1.4.1.1.88.4
UID_DRAFT_SRDetailStorage	1.2.840.10008.5.1.4.1.1.88.3
UID_DRAFT_SRTextStorage	1.2.840.10008.5.1.4.1.1.88.1
UID_DRAFT_WaveformStorage	1.2.840.10008.5.1.4.1.1.9.1
UID_DigitalIntraOralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3
UID_DigitalIntraOralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1
UID_DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2
UID_DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1
UID_DigitalXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.1
UID_DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1
UID_EncapsulatedPDFStorage	1.2.840.10008.5.1.4.1.1.104.1
UID_EnhancedCTImageStorage	1.2.840.10008.5.1.4.1.1.2.1
UID_EnhancedMRImageStorage	1.2.840.10008.5.1.4.1.1.4.1
UID_EnhancedSR	1.2.840.10008.5.1.4.1.1.88.22
UID_EnhancedXAImageStorage	1.2.840.10008.5.1.4.1.1.12.1.1
UID_EnhancedXRFImageStorage	1.2.840.10008.5.1.4.1.1.12.2.1
UID_GeneralECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.2
UID_GrayscaleSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.1
UID_HardcopyColorImageStorage	1.2.840.10008.5.1.1.30
UID_HardcopyGrayscaleImageStorage	1.2.840.10008.5.1.1.29

UID_HemodynamicWaveformStorage	1.2.840.10008.5.1.4.1.1.9.2.1
UID_KeyObjectSelectionDocument	1.2.840.10008.5.1.4.1.1.88.59
UID_MRImageStorage	1.2.840.10008.5.1.4.1.1.4
UID_MRSpectroscopyStorage	1.2.840.10008.5.1.4.1.1.4.2
UID_MammographyCADSR	1.2.840.10008.5.1.4.1.1.88.50
UID_MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2
UID_MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3
UID_MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1
UID_MultiframeTrueColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4
UID_NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20
UID_OphthalmicPhotography16BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.2
UID_OphthalmicPhotography8BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.1
UID_PETCurveStorage	1.2.840.10008.5.1.4.1.1.129
UID_PETImageStorage	1.2.840.10008.5.1.4.1.1.128
UID_ProcedureLogStorage	1.2.840.10008.5.1.4.1.1.88.40
UID_PseudoColorSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.3
UID_RETIRED_NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.5
UID_RETIRED_UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6
UID_RETIRED_UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3
UID_RETIRED_VLImageStorage	1.2.840.10008.5.1.4.1.1.77.1
UID_RETIRED_VLMultiFrameImageStorage	1.2.840.10008.5.1.4.1.1.77.2
UID_RETIRED_XRayAngiographicBiPlaneImageStorage	1.2.840.10008.5.1.4.1.1.12.3
UID_RTBeamsTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.4
UID_RTBrachyTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.6
UID_RTDoseStorage	1.2.840.10008.5.1.4.1.1.481.2
UID_RTImageStorage	1.2.840.10008.5.1.4.1.1.481.1
UID_RTPlanStorage	1.2.840.10008.5.1.4.1.1.481.5
UID_RTStructureSetStorage	1.2.840.10008.5.1.4.1.1.481.3
UID_RTTreatmentSummaryRecordStorage	1.2.840.10008.5.1.4.1.1.481.7
UID_RawDataStorage	1.2.840.10008.5.1.4.1.1.66
UID_RealWorldValueMappingStorage	1.2.840.10008.5.1.4.1.1.67
UID_SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7
UID_SpatialFiducialsStorage	1.2.840.10008.5.1.4.1.1.66.2
UID_SpatialRegistrationStorage	1.2.840.10008.5.1.4.1.1.66.1
UID_StandaloneCurveStorage	1.2.840.10008.5.1.4.1.1.9
UID_StandaloneModalityLUTStorage	1.2.840.10008.5.1.4.1.1.10
UID_StandaloneOverlayStorage	1.2.840.10008.5.1.4.1.1.8
UID_StandaloneVOILUTStorage	1.2.840.10008.5.1.4.1.1.11
UID_StereometricRelationshipStorage	1.2.840.10008.5.1.4.1.1.77.1.5.3
UID_StoredPrintStorage	1.2.840.10008.5.1.1.27
UID_TwelveLeadECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.1
UID_UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6.1
UID_UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1
UID_VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1
UID_VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2
UID_VLPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4
UID_VLSlideCoordinatesMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.3
UID_VideoEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1.1
UID_VideoMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2.1
UID_VideoPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4.1
UID_XRayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1
UID_XRayFluoroscopyImageStorage	1.2.840.10008.5.1.4.1.1.12.2
UID_XRayRadiationDoseSR	1.2.840.10008.5.1.4.1.1.88.67

MediQR provide Standard Conformance to the following Query/Retrieve SOP-Classes as SCU:

SOP Class Name	SOP Class UID
FINDPatientRootQueryRetrieveInformationModel	1.2.840.10008.5.1.4.1.2.1.1
MOVEPatientRootQueryRetrieveInformationModel	1.2.840.10008.5.1.4.1.2.1.2
FINDStudyRootQueryRetrieveInformationModel	1.2.840.10008.5.1.4.1.2.2.1
MOVEStudyRootQueryRetrieveInformationModel	1.2.840.10008.5.1.4.1.2.2.2

MediQR provide Standard Conformance to the following SOP-Classes:

SOP Class Name	SOP Class UID	Role
VerificationSOPClass	1.2.840.10008.1.1	SCP (RWA III)

Supported Transfersyntaxes: (Note: MediQR provides no transfersyntax conversion)

Transfersyntax	Abbreviation
LittleEndianExplicitTransferSyntax	LE
LittleEndianImplicitTransferSyntax	LEI
BigEndianExplicitTransferSyntax	BE
JPEGProcess1TransferSyntax	JPEG
JPEGProcess3_5TransferSyntax	JPEG8
JPEGProcess2_4TransferSyntax	JPEG12
JPEGProcess6_8TransferSyntax	J6
JPEGProcess7_9TransferSyntax	J7
JPEGProcess10_12TransferSyntax	J10
JPEGProcess11_13TransferSyntax}	J11
JPEGProcess14TransferSyntax	LL8
JPEGProcess15TransferSyntax	LL12
JPEGProcess16_18TransferSyntax	J16
JPEGProcess17_19TransferSyntax	J17
JPEGProcess20_22TransferSyntax	J20
JPEGProcess21_23TransferSyntax	J21
JPEGProcess24_26TransferSyntax	J24
JPEGProcess25_27TransferSyntax	J25
JPEGProcess28TransferSyntax	J28
JPEGProcess29TransferSyntax	J29
JPEGProcess14SV1TransferSyntax	LL1
RLELossless	RLE

The number of accepted tranfersyntaxes can be restricted by configuration. LEI is always incuded.

2.1.1 Association Establishment Policies

2.1.1.1 General

The configuration of MediQR defines Application Entity Title, Port numbers and acceptable Tansfersyntaxes (first fit order).

On Receive MediQR accepts accocciations based on a first fit strategy, where the first accptable transfersyntax is used.

No validation of dataset against IODs is made by MediQR.
Max. PDU Size is 16384 Bytes.

2.1.1.2 Number of Associations

MediQR uses one connection per Role (StoreSCU/StoreSCP/QuerySCU/MoveSCU/...).

2.1.1.3 Asynchronous Nature

Not applicable

2.1.1.4 Implementation Identifying Information

MediQR uses Offis DCMTK 3.54 with patches of 2007-09-24, therefore it exposes that info:

Implementation Class UID: 1.2.276.0.7230010.3.0.3.5.4
Implementation Version Name: OFFIS_DCMTK_354

2.1.2 Association Initiation Policy

MediQR initiates a new association on each file it has to transfer.

Unencapsulated (little/big endian, implicit/explicit VR) Transfersyntaxes are automatically recoded.
Encapsulated transfers are rejected if the receiver doesn't accept it.

MediQR may initiate associations for C-FIND, C-MOVE or C-STORE operations.

2.1.2.1 RWA I - Query Retrieve handled by 3d party software

This section is not applicable for this RWA.

2.1.2.2 RWA II - Query/Retrieve with MediQR – C-FIND

2.1.2.2.1 Associated RWA

The associated Real-World activity is a C-Find request initiated by the user. The user specifies some attributes, the remote Application should use to query the database. After an successfully established association to the remote Application Entity, it will send one C-Find request (according to the query model) and will then display the results in MediQR.

2.1.2.2.2 Proposed Presentation Contexts

All configured transfersyntax are combined with selected query/retrieve model and SCU role. No extended negotiation.

2.1.2.2.3 SOP Specific Conformance Statement

Subsequent queries are used to retrieve level information starting from study/patient downto image level.

Supported attributes at root level:
- Patient's Name (0010,0010)
- Patient's Id (0010,0020)
- Patient's Birthday (0010,0030)

Other required/unique attributes are empty. Optional attributes are part of the C-FIND request if configured.

2.1.2.3 RWA II - Query/Retrieve with MediQR – C-MOVE

2.1.2.3.1 Associated RWA

The associated Real-World activity is a C-Move request initiated by the user.The user selects an image from a result of a previous C-Find operation. After an successfully established association to the remote Application Entity, it will cause the calling application via a C-Move request to transfer the images to the local Application Entity. The transfer of the images will be done by a subsequent C-Store and will return the results of the store operation to the calling application.

2.1.2.3.2 Proposed Presentation Contexts

All configured transfersyntax are combined with selected query/retrieve model and SCU role. No extended negotiation.

2.1.2.3.3 SOP Specific Conformance Statement

None.

2.1.2.4 RWA IV – MediQR automatically stores images in an RAE

2.1.2.4.1 Associated RWA

The associated Real-World activity is a C-Move request initiated after the user has stored a valid DICOM image in the export folder. After an successfully established association to the remote Application Entity, it will cause the calling application via a C-Store request to transfer the images to the local Application Entity. The transfer of the images will be done by a subsequent C-Store and will return the results of the store operation to the calling application.

2.1.2.4.2 Proposed Presentation Contexts

Only the Storage SOP class and transfersyntax of the image is proposed. No extended negotiation.

2.1.2.4.3 SOP Specific Conformance Statement

No IOD validation is applied.

2.1.3 Association Acceptance Policy

2.1.3.1 RWA III – MediQR as StorageSCP – C-STORE Request

2.1.3.1.1 Associated RWA

The associated Real-World activity is a C-Store request by an RAE. After accepting an association from a remote DICOM AE, the SCP thread receives the images via the open association.
After the association is closed by the sender, the display is updated to indicate the received image.

2.1.3.1.2 Proposed Presentation Contexts

All configured transfersyntax are combined with selected query/retrieve model and SCU role. No extended negotiation.

2.1.3.1.3 SOP Specific Conformance Statement

No IOD verification is applied.
The image is received into the incomming folder. If there is a open query at this image it is moved to the temporary folder and during close of mediQR, mediQR deletees the image.

2.1.3.2 RWA III – MediQR as StorageSCP – C-ECHO Request

2.1.3.2.1 Associated RWA

The associated RWA is a C-Echo request by an RAE.

2.1.3.2.2 Proposed Presentation Contexts

All configured transfersyntax are combined with VerificationSOPClass model and SCP role. No extended negotiation.

SOP Class Name	SOP Class UID	Role
VerificationSOPClass	1.2.840.10008.1.1	SCP (RWA III)

2.1.3.2.3 SOP Specific Conformance Statement

None.

2.1.4 Transfersyntax Selection

3 Communication Profiles

3.1 Supported Communication Stacks

The only supported communication is TCP/IP Stack.

3.1.1 TCP/IP Stack

MediQR uses the TCP/IP stack provided by the operating system (Win2000/WinNT/etc.)

4 Extensions/Privatisations/Specialisations

None.

5 Configuration

AETs and Ports are configurable.
Optional Query Attributes are configurable.

6 Extended Character sets

Unsupported.

7 Codes and Controlled Terminology

No Codes and Controlled Terminology are supported.