

# **IQPACS IMAGO**

*DICOM 3.0 Conformance Statement*

## Revision history

Revision	Date	Description	Author
1	03-08-2005	Release	S.C. Info World S.R.L.

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# C O N T E N T S

## 1. INTRODUCTION

- 1.1. Purpose of this document
- 1.2. IQPACS Imago overview
- 1.3. General acronyms, abbreviations and definitions
- 1.4. Interoperability
- 1.5. References

## 2. IMPLEMENTATION MODEL

- 2.1. Application data flow diagram
- 2.2. Functional definitions of the AE
  - 2.2.1. Verify – Verification SCU/SCP
  - 2.2.2. Query an external AE – Query/Retrieve SCU
  - 2.2.3. Query database – Query/Retrieve SCP
  - 2.2.4. Image transfer – STORAGE SCU
  - 2.2.5. Receiving and storing images – STORAGE SCP
- 2.3. Sequencing of Real-World Activities

## 3. AE SPECIFICATIONS

- 3.1. SOP Classes
- 3.2. Association Establishment Policies
  - 3.2.1 General
  - 3.2.2 Number of Associations

### **3.2.3 Asynchronous Nature**

## **3.3. Association Initiation Policy**

### **3.3.1. Real World Activity: Request to verify a trusted node**

#### **3.3.1.1. Associated Real World Activity**

#### **3.3.1.2 Presentation Contexts**

### **3.3.2. Real World Activity: Request to query a DICOM node**

#### **3.3.2.1. Associated real-world activity**

#### **3.3.2.2. Presentation Contexts**

### **3.3.3 Real World Activity: Request to move instances**

#### **3.3.3.1. Associated real world activity**

#### **3.3.3.2. Presentation context**

### **3.3.4. Real World Activity: Request to Transfer Images**

#### **3.3.4.1 Associated Real World Activity**

#### **3.3.4.2 Presentation Contexts**

## **3.4. Association Acceptance Policy**

### **3.4.1. Real World Activity: Respond to Verification Request**

#### **3.4.1.1 Associated Real World Activity**

#### **3.4.1.2 Presentation Contexts**

### **3.4.2. Real World Activity: Respond to Query Database Request**

#### **3.4.2.1 Associated Real World Activity**

#### **3.4.2.2. Presentation Context**

#### **3.4.2.3. SOP Specific Conformance**

### **3.4.3. Real World activity: Move instances**

#### **3.4.3.1. Associated Real World Activity**

#### **3.4.3.2. Present Context**

#### **3.4.3.3. SOP Specific Conformance**

### **3.4.4. Real World Activity: Store Images**

#### **3.4.4.1 Associated Real World Activity**

#### **3.4.4.2 Presentation Contexts**

#### **3.4.4.3. SOP Specific Conformance**

## **3.5 Transfer Syntax Selection Policies**

# **4. COMMUNICATION PROFILES**

## **4.1. Supported Communications Stacks (parts 8, 9)**

## **4.2. TCP/IP Stack**

## **5. EXTENSIONS/SPECIALIZATIONS/PRIVATIZATIONS**

**5.1. Storing avi and mpeg data**

**5.2. Diagnosis restriction for types of instances**

## **6. CONFIGURATION**

**6.1. AE Title/Presentation Address Mapping**

**6.2. Configurable Parameters**

## **7. SUPPORT OF EXTENDED CHARACTER SETS**

## **8. CODES AND CONTROLLED TERMINOLOGY**

# 1. INTRODUCTION

## 1.1. Purpose of this document

This document describes the conformance to the DICOM standard, version 3 for the **IQPACS Imago** application and follows the contents and structuring requirements of DICOM PS 3.2. InfoWorld is continually improving and enhancing the functionalities of its products based on customer requirements. This document is updated as appropriate.

## 1.2. IQPACS Imago overview

**IQPACS System** is a completely DICOM compliant picture and archiving system intended for the radiology and imagistic departments. IQPACS connects to any type of modality, processes and stores DICOM images in long and short time archive.

The application is written in Java code and uses Microsoft SQL Server.

**IQPACS Imago** is mainly intended for temporary storage of DICOM images and for viewing the patients' images for diagnosis purposes. The users of the application are usually imaging physicians, the application offering them the possibility to perform graphical operations over the images, for a better diagnose.

The application uses DICOM as the interface to the external world. The IQPACS Imago accepts DICOM association requests for the purpose of storing images and for query and retrieval of images. It also initiates DICOM association requests for the purpose of sending images to an external application entity.

## 1.3. General acronyms, abbreviations and definitions

**AE** – Application Entity

**DB** – Database

**DICOM** – Digital Imaging and Communications in Medicine

**DICOM** node = other DICOM compliant application entities with which communication can be established

**DICOMDIR** – DICOM directory

**DIMSE** – DICOM Message Service Element

**DIMSE-C** – DICOM Message Service Element – Composite

**DIMSE-N** – DICOM Message Service Element – Normalized

**ID** – Identifier

**PACS** – Picture Archiving and Communication System

**PDU** – Protocol Data Unit

**SCP** – Service Class Provider

**SCU** – Service Class User

**SOP** – Service-Object Pair

**TCP/IP** – Transmission Control Protocol

**Trusted node** – see DICOM node

**UID** – Unique Identifier

## **1.4. Interoperability**

This Conformance Statement and the DICOM standard do not guarantee interoperability of the IQPACS Imago with other vendors' applications or equipment. The user must compare the relevant DICOM Conformance Statements and if a successful interconnection should be possible, the user is responsible to specify an appropriate test suite and to validate the interoperability, which is required.

## **1.5. References**

American College of Radiology – National Electrical Manufacturers Association (ACR-NEMA) Digital Imaging and Communications in Medicine – DICOM v3.0

## 2. IMPLEMENTATION MODEL

IQPACS Imago contains a single Application Entity that implements the Verification Service Class, the Storage Service Class and the Query/Retrieve Service Class as a Service Class User (SCU) and as a Service Class Provider (SCP).

IQPACS Imago provides the following DICOM 3.0 functions:

- Verification of a link at the application level using the DICOM 3.0 verify service class as a SCP and SCU;
- Short term storage for images using the DICOM 3.0 Storage service class as a SCP;
- Sending images to other DICOM nodes in the network using the DICOM 3.0 Storage service class as a SCU;
- Retrieval/sending of data from or to other AE using the DICOM Query/Retrieve service class as a SCP and SCU.



## 2.1. Application data flow diagram

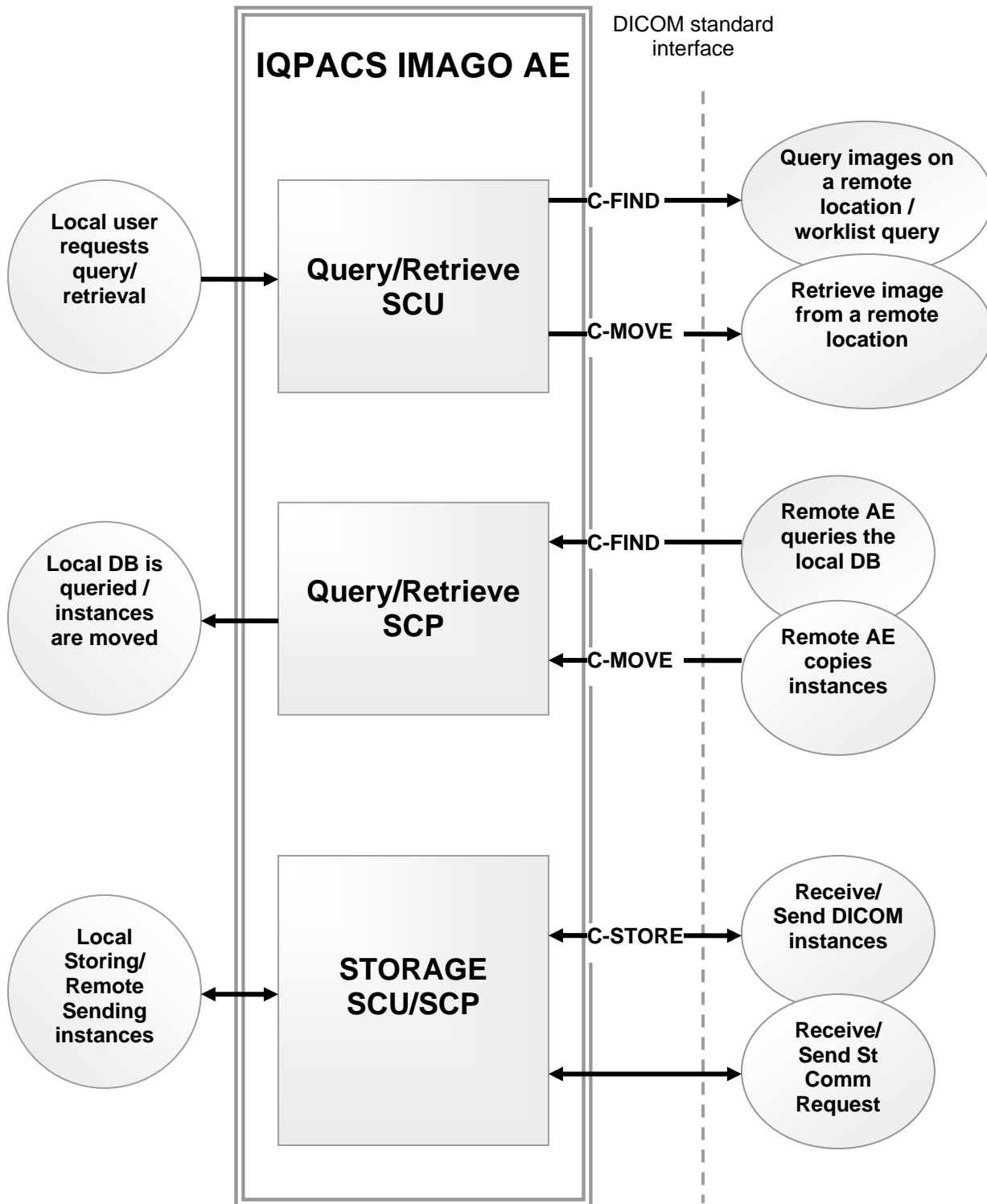


Figure 2.1. Application Data Flow Diagram

## 2.2. Functional definitions of the AE

The IQPACS Imago is an application providing the data storage interface for the IQPACS clients or other vendor diagnosis applications. Each request will be handled by IQPACS Imago as a unique thread.

IQPACS Imago acts as a service class provider (SCP) in the following roles:

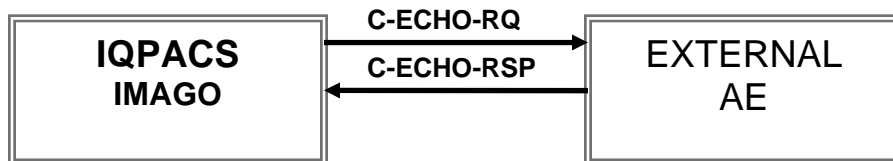
1. SCP for C-Echo operations to Verification service class users
2. SCP for C-Find operations to Query / Retrieve service class users
3. SCP for C-Move operations to Query / Retrieve service class users
4. SCP for C-Store operations to Storage service class users

IQPACS Imago acts as a service class user (SCU) in the following roles:

1. SCU of C-Echo operations from Verification service class providers
2. SCU of C-Find operations from Query / Retrieve service class providers or Basic Worklist Management service class providers
3. SCU of C-Move operations from Query / Retrieve service class providers
4. SCU of C-Store operations from Storage service class providers

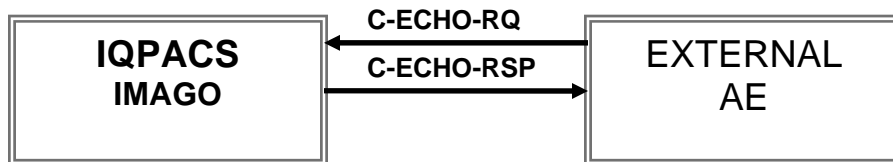
### 2.2.1. Verify – Verification SCU/SCP

In order to test a link to another DICOM AE, the IQPACS Imago requests verification of communication using the C-ECHO request primitive. Upon receipt of the C-ECHO confirmation, IQPACS Imago determines the verification is complete.



*Figure 2.2. Verification SCU*

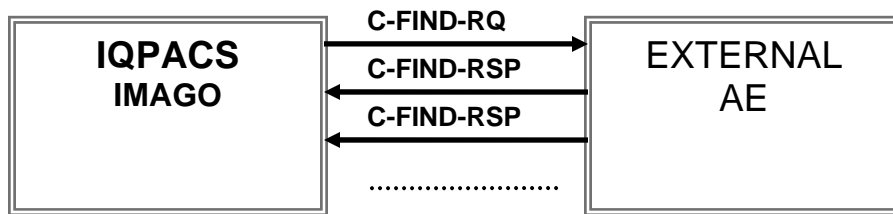
When IQPACS Imago receives a request to verify a current DICOM association (C-ECHO-RQ), it responds with the C-ECHO-RSP primitive.



*Figure 2.3. Verification SCP*

### 2.2.2. Query an external AE – Query/Retrieve SCU

When the IQPACS Imago queries an external database, it sends a C-FIND-RQ with the attributes to be matched. A list of the attributes used for matching is described in the table 3.4.

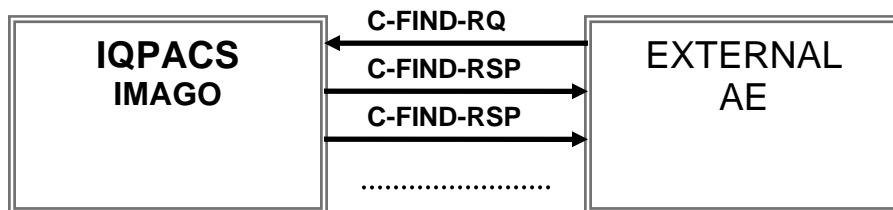


*Figure 2.4. Query/Retrieve SCU*

### 2.2.3. Query database – Query/Retrieve SCP

When the IPACS Imago receives a query request (C-FIND-RQ), the database is queried for matches using the all the attributes supplied by the requesting application entity. The IQPACS Imago searches its database and generates a C-FIND-RSP for each match. A list of the attributes used for matching is described in the table 3.4.

While IQPACS Imago is performing the matching process, C-FIND operations can be interrupted by the calling AE through the use of C-CANCEL-RQ.



*Figure 2.5. Query database*

### 2.2.4. Image transfer – STORAGE SCU

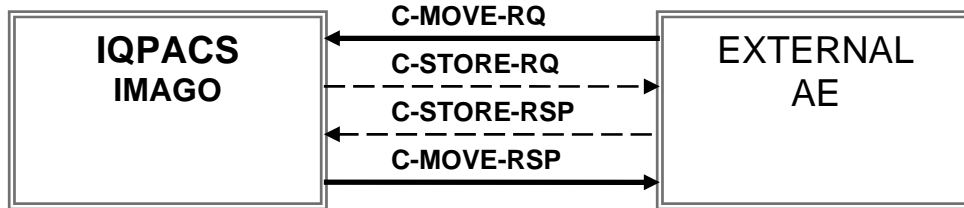
Storage SCU is responsible for transferring DICOM instances to external AEs. The C-STORE DIMSE-C Service is the mechanism used to transfer the instances.

The IQPACS Imago acts as a Storage SCU either when it initiates a C-STORE-RQ, or when it receives a C-MOVE-RQ (also acting as a SCP for C-MOVE operations).



**Figure 2.6. Image Transfer**

When IQPACS Imago receives an image move request (C-MOVE-RQ), the database is queried using the values that uniquely identify the instances. IQPACS Imago initiates C-Store operations through a separate association and transfers images corresponding to the values supplied in the move request.

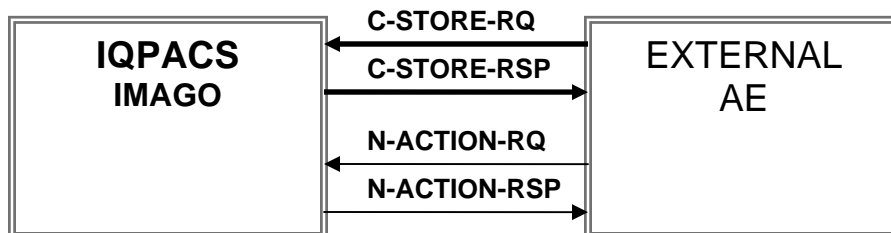


**Figure 2.7. Image Transfer when a moving request received**

### 2.2.5. Receiving and storing images – STORAGE SCP

When IQPACS Imago receives a request to store images (C-STORE-RQ), the received image is stored on the local hard disk and image attributes are extracted and stored in the local database. The images physically stored on the local hard disk will be automatically removed considering some user defined removing policies. The location for storing the instances and the policies for removing the instances are configurable.

However, the Storage SCP does not guarantee that the data will be archived. The remote AE submitting data to the IQPACS Imago should verify the data archiving commitment by sending a Storage Commitment Request – in a separate association. The IQPACS Imago implements the Storage Commitment Push Model SOP Class.



**Figure 2.8. Receiving and storing images**

### **2.3. Sequencing of Real-World Activities**

Not applicable.

## 3. AE SPECIFICATIONS

### 3.1. SOP Classes

IQPACS Imago Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU:

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
AmbulatoryECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.3
BasicTextSR	1.2.840.10008.5.1.4.1.1.88.11
BasicVoiceAudioWaveformStorage	1.2.840.10008.5.1.4.1.1.9.4.1
CardiacElectrophysiologyWaveformStorage	1.2.840.10008.5.1.4.1.1.9.3.1
ComprehensiveSR	1.2.840.10008.5.1.4.1.1.88.33
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1
CTImageStorage	1.2.840.10008.5.1.4.1.1.2
DigitalIntraoralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3
DigitalIntraoralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1
DigitalXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.1
DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1
EnhancedMRImageStorage	1.2.840.10008.5.1.4.1.1.4.1
EnhancedSR	1.2.840.10008.5.1.4.1.1.88.22
GeneralECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.2
GrayscaleSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.1
HemodynamicWaveformStorage	1.2.840.10008.5.1.4.1.1.9.2.1
KeyObjectSelectionDocument	1.2.840.10008.5.1.4.1.1.88.59
MammographyCADSR	1.2.840.10008.5.1.4.1.1.88.50
MRImageStorage	1.2.840.10008.5.1.4.1.1.4
MRSpectroscopyStorage	1.2.840.10008.5.1.4.1.1.4.2
MultiframeColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20
NuclearMedicineImageStorageRetired	1.2.840.10008.5.1.4.1.1.5
PositronEmissionTomographyImageStorage	1.2.840.10008.5.1.4.1.1.128
RawDataStorage	1.2.840.10008.5.1.4.1.1.66
RTBeamsTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.4
RTBrachyTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.6
RTDoseStorage	1.2.840.10008.5.1.4.1.1.481.2
RTImageStorage	1.2.840.10008.5.1.4.1.1.481.1
RTPlanStorage	1.2.840.10008.5.1.4.1.1.481.5
RTStructureSetStorage	1.2.840.10008.5.1.4.1.1.481.3
RTTreatmentSummaryRecordStorage	1.2.840.10008.5.1.4.1.1.481.7
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7
StandaloneCurveStorage	1.2.840.10008.5.1.4.1.1.9
StandaloneModalityLUTStorage	1.2.840.10008.5.1.4.1.1.10
StandaloneOverlayStorage	1.2.840.10008.5.1.4.1.1.8

StandalonePETCurveStorage	1.2.840.10008.5.1.4.1.1.129
StandaloneVOILUTStorage	1.2.840.10008.5.1.4.1.1.11
TwelveLeadECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.1
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6.1
UltrasoundImageStorageRetired	1.2.840.10008.5.1.4.1.1.6
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1
UltrasoundMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.3
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1
VImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.1
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2
VMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.2
VLPotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4
VLSlideCoordinatesMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.3
XRyAngiographicBiPlaneImageStorageRetired	1.2.840.10008.5.1.4.1.1.12.3
XRyAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1
XRyRadiofluoroscopicImageStorage	1.2.840.10008.5.1.4.1.1.12.2
PatientRootQueryRetrieveInformationModelFIND	1.2.840.10008.5.1.4.1.2.1.1
StudyRootQueryRetrieveInformationModelFIND	1.2.840.10008.5.1.4.1.2.2.1
PatientStudyOnlyQueryRetrieveInformationModelFIND	1.2.840.10008.5.1.4.1.2.3.1
PatientRootQueryRetrieveInformationModelMOVE	1.2.840.10008.5.1.4.1.2.1.2
StudyRootQueryRetrieveInformationModelMOVE	1.2.840.10008.5.1.4.1.2.2.2
PatientStudyOnlyQueryRetrieveInformationModelMOVE	1.2.840.10008.5.1.4.1.2.3.2
StorageCommitmentPushModel	1.2.840.10008.1.20.1

**Table 3.1. Supported SOP Classes in the SCU role**

And to the following DICOM V3.0 SOP Classes as an SCP:

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
AmbulatoryECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.3
BasicTextSR	1.2.840.10008.5.1.4.1.1.88.11
BasicVoiceAudioWaveformStorage	1.2.840.10008.5.1.4.1.1.9.4.1
CardiacElectrophysiologyWaveformStorage	1.2.840.10008.5.1.4.1.1.9.3.1
ComprehensiveSR	1.2.840.10008.5.1.4.1.1.88.33
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1
CTImageStorage	1.2.840.10008.5.1.4.1.1.2
DigitalIntraoralXRyImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3
DigitalIntraoralXRyImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1
DigitalMammographyXRyImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2
DigitalMammographyXRyImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1
DigitalXRyImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.1
DigitalXRyImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1
EnhancedMRIImageStorage	1.2.840.10008.5.1.4.1.1.4.1
EnhancedSR	1.2.840.10008.5.1.4.1.1.88.22
GeneralECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.2
GrayscaleSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.1
HemodynamicWaveformStorage	1.2.840.10008.5.1.4.1.1.9.2.1
KeyObjectSelectionDocument	1.2.840.10008.5.1.4.1.1.88.59
MammographyCADSR	1.2.840.10008.5.1.4.1.1.88.50

MRImageStorage	1.2.840.10008.5.1.4.1.1.4
MRSpectroscopyStorage	1.2.840.10008.5.1.4.1.1.4.2
MultiframeColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20
NuclearMedicineImageStorageRetired	1.2.840.10008.5.1.4.1.1.5
PositronEmissionTomographyImageStorage	1.2.840.10008.5.1.4.1.1.128
RawDataStorage	1.2.840.10008.5.1.4.1.1.66
RTBeamsTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.4
RTBrachyTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.6
RTDoseStorage	1.2.840.10008.5.1.4.1.1.481.2
RTImageStorage	1.2.840.10008.5.1.4.1.1.481.1
RTPlanStorage	1.2.840.10008.5.1.4.1.1.481.5
RTStructureSetStorage	1.2.840.10008.5.1.4.1.1.481.3
RTTreatmentSummaryRecordStorage	1.2.840.10008.5.1.4.1.1.481.7
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7
StandaloneCurveStorage	1.2.840.10008.5.1.4.1.1.9
StandaloneModalityLUTStorage	1.2.840.10008.5.1.4.1.1.10
StandaloneOverlayStorage	1.2.840.10008.5.1.4.1.1.8
StandalonePETCurveStorage	1.2.840.10008.5.1.4.1.1.129
StandaloneVOILUTStorage	1.2.840.10008.5.1.4.1.1.11
TwelveLeadECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.1
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6.1
UltrasoundImageStorageRetired	1.2.840.10008.5.1.4.1.1.6
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1
UltrasoundMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.3
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1
VLImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.1
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2
VLMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.2
VLPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4
VLSlideCoordinatesMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.3
XRayAngiographicBiPlaneImageStorageRetired	1.2.840.10008.5.1.4.1.1.12.3
XRayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1
XRayRadiofluoroscopicImageStorage	1.2.840.10008.5.1.4.1.1.12.2
PatientRootQueryRetrieveInformationModelFIND	1.2.840.10008.5.1.4.1.2.1.1
StudyRootQueryRetrieveInformationModelFIND	1.2.840.10008.5.1.4.1.2.2.1
PatientStudyOnlyQueryRetrieveInformationModelFIND	1.2.840.10008.5.1.4.1.2.3.1
PatientRootQueryRetrieveInformationModelMOVE	1.2.840.10008.5.1.4.1.2.1.2
StudyRootQueryRetrieveInformationModelMOVE	1.2.840.10008.5.1.4.1.2.2.2
PatientStudyOnlyQueryRetrieveInformationModelMOVE	1.2.840.10008.5.1.4.1.2.3.2
StorageCommitmentPushModel	1.2.840.10008.1.20.1

**Table 3.2. Supported SOP Classes in the SCP role**



## **3.2. Association Establishment Policies**

### **3.2.1 General**

All associations with IQPACS Image Server are established using the DICOM 3.0 Standard application context. All the parameters regarding association initiation or acceptance can be modified at the configuration level. These parameters are:

- the connection timeout
- the acceptance timeout (with a default value of 5000 ms)
- the dimse timeout
- the maximum length Protocol Data Unit (with a default value of 16352 bytes)
- the maximum number of operations invoked (with a default value of 500)
- the close delay (with a default value of 5000 ms)

### **3.2.2 Number of Associations**

The number of permitted associations can be set at the configuration level in an interval between 1 and unlimited, depending on the available resources.

### **3.2.3 Asynchronous Nature**

Not supported.

## **3.3. Association Initiation Policy**

The IQPACS Imago initiates associations for:

- testing a trusted node (C-ECHO)
- query another DICOM node (C-FIND)
- moving instances (C-MOVE)
- image acquisition from another DICOM node (C-STORE)

### **3.3.1. Real World Activity: Request to verify a trusted node**

#### **3.3.1.1. Associated Real World Activity**

The IQPACS Imago initiates an association to verify application level communication with a peer DICOM application entity.

This request is performed using the C-ECHO request primitive. The remote DICOM AE, supporting the Verification SOP Class SCP role, issues a C-ECHO response primitive. Upon receipt of the C-ECHO confirmation, the SCU determines that verification is complete.

### 3.3.1.2 Presentation Contexts

Abstract Syntax		Transfer Syntax		Role	Extended negotiation
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	No

**Table 3.3. Presentation Contexts to verify a DICOM association**

### 3.3.2. Real World Activity: Request to query a DICOM node

#### 3.3.2.1. Associated real-world activity

The IQPACS Imago queries an external application entity against matching the attributes supplied in the query request. A list of the supported optional keys is listed in the table below. The list contains only the attributes in the C-FIND request.

The level of the query	Optional Key	Tag
Patient level	PatientID	(0010,0020)
	PatientFirstName	(0010,0010)
	PatientLastName	
	PatientBirthDate	(0010,0030)
	PatientBirthName	(0010,0032)
Study level	ModalitiesInStudy	(0008,0061)
	StudyStatusID	(0032,000A)
	StudyArrivalDate	(0008,0020)
	NameOfPhysicianReadingStudy	(0008,1060)
	RequestingPhysician	(0032,1032)
	InterpretationDiagnosesCode	(4008,0117)
	Accession Number	(0008,0050)
	Study Priority	(0032,000C)
Series level	PerformingPhysicianName	(0008,1050)

**Table 3.4. Optional Keys supported**

### 3.3.2.2. Presentation Contexts

The presentation context shown in the following table is used for querying an external DICOM node:

Abstract Syntax		Transfer Syntax	Role	Extended negotiation
Name	UID			
PatientRootQueryRetrieveInformationModel FIND	1.2.840.10008.5.1.4.1.2.1.1	Case 1*	SCU	No
StudyRootQueryRetrieveInformationModel FIND	1.2.840.10008.5.1.4.1.2.2.1	Case 1*	SCU	No
PatientStudyOnlyQueryRetrieveInformationModel FIND	1.2.840.10008.5.1.4.1.2.3.1	Case 1*	SCU	No

\*Note: Case 1 – The transfer syntaxes supported are listed in **table 3.16**.

**Table 3.5. Presentation Contexts to query a DICOM node**

### 3.3.3 Real World Activity: Request to move instances

#### 3.3.3.1. Associated real world activity

The IQPACS Imago requests the moving of some specified instances to a specified destination.

#### 3.3.3.2. Presentation context

The presentation context shown in the following table is used for retrieval request:

Abstract Syntax		Transfer Syntax	Role	Extended negotiation
Name	UID			
PatientRootQueryRetrieveInformationModel MOVE	1.2.840.10008.5.1.4.1.2.1.2	Case 2*	SCU	No
StudyRootQueryRetrieveInformationModel MOVE	1.2.840.10008.5.1.4.1.2.2.2	Case 2*	SCU	No
PatientStudyOnlyQueryRetrieveInformationModel MOVE	1.2.840.10008.5.1.4.1.2.3.2	Case 2*	SCU	No

\*Note: Case 2 – The transfer syntaxes supported are listed in **table 3.16**.

**Table 3.6. Presentation contexts to move instances**

### 3.3.4. Real World Activity: Request to Transfer Images (copy images)

### 3.3.4.1 Associated Real World Activity

The IQPACS Imago initiates C-STORE requests when selecting instances from the local database and copying them to an external Storage SCP AE. The Storage SCU invokes a C-STORE DIMSE Service with every instance to be sent. If a successful C-STORE response is received for the C-STORE request initiated by the Storage SCU this means that the instance has been stored and a new C-STORE-RQ can be initiated for the next instance. If a failed C-STORE response is received, this won't imply any further action from the Storage SCU as long as the Storage service class does not guarantee that the data will be archived. After a failed C-STORE response for one instance the Storage SCU will proceed with a new C-STORE-RQ for the next instance.

IQPACS Imago can also initiate an association to transfer images as a result of a C-MOVE request.

### 3.3.4.2 Presentation Contexts

The presentation context shown in the following table is used for transfer request:

Abstract Syntax		Transfer Syntax	Role	Extended negotiation
Name	UID			
AmbulatoryECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.3	Case 1*	SCU	No
BasicTextSR	1.2.840.10008.5.1.4.1.1.88.11	Case 1*	SCU	No
BasicVoiceAudioWaveformStorage	1.2.840.10008.5.1.4.1.1.9.4.1	Case 1*	SCU	No
CardiacElectrophysiologyWaveformStorage	1.2.840.10008.5.1.4.1.1.9.3.1	Case 1*	SCU	No
ComprehensiveSR	1.2.840.10008.5.1.4.1.1.88.33	Case 1*	SCU	No
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1	Case 2*	SCU	No
CTImageStorage	1.2.840.10008.5.1.4.1.1.2	Case 2*	SCU	No
DigitalIntraoralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3	Case 2*	SCU	No
DigitalIntraoralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1	Case 2*	SCU	No
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2	Case 2*	SCU	No
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1	Case 2*	SCU	No
DigitalXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.1	Case 2*	SCU	No
DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1	Case 2*	SCU	No
EnhancedMRImageStorage	1.2.840.10008.5.1.4.1.1.4.1	Case 2*	SCU	No
EnhancedSR	1.2.840.10008.5.1.4.1.1.88.22	Case 1*	SCU	No
GeneralECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.2	Case 1*	SCU	No
GrayscaleSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.1	Case 1*	SCU	No
HemodynamicWaveformStorage	1.2.840.10008.5.1.4.1.1.9.2.1	Case 1*	SCU	No
KeyObjectSelectionDocument	1.2.840.10008.5.1.4.1.1.88.59	Case 1*	SCU	No
MammographyCADSR	1.2.840.10008.5.1.4.1.1.88.50	Case 1*	SCU	No
MRImageStorage	1.2.840.10008.5.1.4.1.1.4	Case 2*	SCU	No

MRSpectroscopyStorage	1.2.840.10008.5.1.4.1.1.4.2	Case 2*	SCU	No
MultiframeColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4	Case 2*	SCU	No
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2	Case 2*	SCU	No
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3	Case 2*	SCU	No
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1	Case 2*	SCU	No
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20	Case 2*	SCU	No
NuclearMedicineImageStorageRetired	1.2.840.10008.5.1.4.1.1.5	Case 2*	SCU	No
PositronEmissionTomographyImageStorage	1.2.840.10008.5.1.4.1.1.128	Case 2*	SCU	No
RawDataStorage	1.2.840.10008.5.1.4.1.1.66	Case 1*	SCU	No
RTBeamsTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.4	Case 1*	SCU	No
RTBrachyTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.6	Case 1*	SCU	No
RTDoseStorage	1.2.840.10008.5.1.4.1.1.481.2	Case 1*	SCU	No
RTImageStorage	1.2.840.10008.5.1.4.1.1.481.1	Case 2*	SCU	No
RTPlanStorage	1.2.840.10008.5.1.4.1.1.481.5	Case 1*	SCU	No
RTStructureSetStorage	1.2.840.10008.5.1.4.1.1.481.3	Case 1*	SCU	No
RTTreatmentSummaryRecordStorage	1.2.840.10008.5.1.4.1.1.481.7	Case 1*	SCU	No
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7	Case 2*	SCU	No
StandaloneCurveStorage	1.2.840.10008.5.1.4.1.1.9	Case 1*	SCU	No
StandaloneModalityLUTStorage	1.2.840.10008.5.1.4.1.1.10	Case 1*	SCU	No
StandaloneOverlayStorage	1.2.840.10008.5.1.4.1.1.8	Case 2*	SCU	No
StandalonePETCurveStorage	1.2.840.10008.5.1.4.1.1.129	Case 1*	SCU	No
StandaloneVOILUTStorage	1.2.840.10008.5.1.4.1.1.11	Case 1*	SCU	No
TwelveLeadECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.1	Case 1*	SCU	No
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6.1	Case 2*	SCU	No
UltrasoundImageStorageRetired	1.2.840.10008.5.1.4.1.1.6	Case 2*	SCU	No
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1	Case 2*	SCU	No
UltrasoundMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.3	Case 2*	SCU	No
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1	Case 2*	SCU	No
VLImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.1	Case 2*	SCU	No
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2	Case 2*	SCU	No
VLMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.2	Case 2*	SCU	No
VLPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4	Case 2*	SCU	No
VLSlideCoordinatesMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.3	Case 2*	SCU	No
XRayAngiographicBiPlaneImageStorageRetired	1.2.840.10008.5.1.4.1.1.12.3	Case 2*	SCU	No
XrayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1	Case 2*	SCU	No

XrayRadiofluoroscopicImageStorage	1.2.840.10008.5.1.4.1.1.12.2	Case 2*	SCU	No
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\*Note: Case 1 – The transfer syntaxes supported are listed in **table 3.16**.

\*Note: Case 2 – The transfer syntaxes supported are listed in **table 3.16**.

**Table 3.7. Presentation contexts to transfer instances**

### 3.4. Association Acceptance Policy

The associations that can be accepted by the IQPACS Imago can be established at the configuration level. The IQPACS Imago is able to accept associations in the following situations:

- testing the connection (C-ECHO)
- for storing instances received from modalities or other DICOM nodes (C-STORE)
- interrogation (C-FIND)
- request to move instances (C-MOVE)

At the configuration level, these services can be denied by the system administrator if this is considered to be necessary.

#### 3.4.1. Real World Activity: Respond to Verification Request

##### 3.4.1.1 Associated Real World Activity

When IQPACS Imago receives a request to verify a current DICOM association (C-ECHO-RQ), it responds with the C-ECHO-RSP primitive.

##### 3.4.1.2 Presentation Contexts

The presentation context used for verification is presented in the following table:

Abstract Syntax		Transfer Syntax		Role	Extended negotiation
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	No

**Table 3.8. presentation contexts to verification request**

#### 3.4.2. Real World Activity: Respond to Query Database Request

##### 3.4.2.1 Associated Real World Activity

When queried by an external application entity, the IQPACS Imago is able to perform matching for the attributes in the table below, contained in the Identifier of a C-FIND request.

The level of the query	Optional Key	Comments	Tag
Patient level	PatientBirthDate		(0010,0030)
	PatientBirthTime		(0010,0032)
	PatientSex		(0010,0040)
	IssuerOfPatientID		(0010,0021)

	OtherPatientIDs	(0010,1000)
	OtherPatientNames	(0010,1001)
	PatientBirthName	(0010,1005)
	PatientMotherBirthName	(0010,1060)
	MedicalRecordLocator	(0010,1090)
	Occupation	(0010,2180)
	ConfidentialityPatientData	(0040,3001)
	PatientSize	(0010,1020)
	PatientWeight	(0010,1030)
	PatientAddress	(0010,1040)
	MilitaryRank	(0010,1080)
	BranchOfService	(0010,1081)
	CountryOfResidence	(0010,2150)
	PatientPhoneNumbers	(0010,2154)
	EthnicGroup	(0010,2160)
	PatientReligiousPreference	(0010,21F0)
	PatientComments	(0010,4000)
	MedicalAlerts	(0010,2000)
	ContrastAllergies	(0010,2110)
	SmokingStatus	(0010,21A0)
	AdditionalPatientHistory	(0010,21B0)
	PregnancyStatus	(0010,21C0)
	LastMenstrualDate	(0010,21D0)
	SpecialNeeds	(0038,0050)
	PatientState	(0038,0500)
	InstanceCreationDate	(0008,0012)
	InstanceCreationTime	(0008,0013)
<b>Study level</b>	StudyDescription	(0008,1030)
	ModalitiesInStudy	(0008,0061)
	StudyStatusID	(0032,000A)
	StudyPriorityID	(0032,000C)
	StudyComments	(0032,4000)
	StudyArrivalDate	(0032,1040)
	StudyArrivalTime	(0032,1041)
	StudyCompletionDate	(0032,1050)
	StudyCompletionTime	(0032,1051)
	StudyVerifiedDate	(0032,0032)
	StudyVerifiedTime	(0032,0033)
	SeriesInStudy	(0020,1000)
	AcquisitionsInStudy	(0020,1001)
	StudyIDIssuer	(0032,0012)
	OtherStudyNumbers	(0020,1070)
	NameOfPhysicianReadingStudy	(0008,1060)
	StudyReadDate	(0032,0034)
	StudyReadTime	(0032,0035)
	ScheduledStudyStartDate	(0032,1000)
	ScheduledStudyStartTime	(0032,1001)
	ScheduledStudyStopDate	(0032,1010)
	ScheduledStudyStopTime	(0032,1011)
	ScheduledStudyLocation	(0032,1020)
	ScheduledStudyLocationAET	(0032,1021)
	ReasonforStudy	(0032,1030)
	RequestingPhysician	(0032,1032)

	RequestingService		(0032,1033)
	RequestedProcedureDescription		(0032,1060)
	RequestedContrastAgent		(0032,1070)
	InterpretationAuthor		(4008,010C)
	InterpretationDiagnosesCode		(4008,0117)
	InterpretationStatusID		(4008,0212)
	ObservationDateTime	match only	(0040,A032)
	ConceptNameCodeSq	match only	(0040,A043)
<b>Series level</b>	SeriesDate		(0008,0021)
	SeriesTime		(0008,0031)
	SeriesDescription		(0008,103E)
	Laterality		(0020,0060)
	BodyPartExamined		(0018,0015)
	PatientPosition		(0018,5100)
	PPSSStartDate		(0040,0244)
	PPSSStartTime		(0040,0245)
	Manufacturer		(0008,0070)
	StationName		(0008,1010)
	ManufacturerModelName		(0008,1090)
	PerformingPhysicianName		(0008,1050)
	OperatorName		(0008,1070)
	SeriesCommentsRetired		
<b>Image (Instance) level</b>	PatientOrientation		(0020,0020)
	ImageType		(0008,0008)
	AcquisitionNumber		(0020,0012)
	AcquisitionDate		(0008,0022)
	AcquisitionTime		(0008,0032)
	OverlayNumber		(0020,0022)
	CurveNumber		(0020,0024)
	LUTNumber		(0020,0026)
	ContentDate		(0008,0023)
	ContentTime		(0008,0033)
	Rows		(0028,0010)
	Columns		(0028,0011)
	BitsAllocated		(0028,0100)
	NumberOfFrames		(0028,0008)
	PresentationLabel		(0070,0080)
	PresentationDescription		(0070,0081)
	PresentationCreationDate		(0070,0082)
	PresentationCreationTime		(0070,0083)
	PresentationCreatorName		(0070,0084)
	CompletionFlag		(0040,A491)
	CompletionFlagDescription		(0040,A492)
	VerificationFlag		(0040,A493)
	ObservationDateTime		(0040,A032)
	ConceptNameCodeSq	match only	(0040,A043)

**Table 3.9. Optional Keys supported**

**Note:** “Match only” means that the specified attribute will not be returned in a C-FIND response, only the matching will be verified for that attribute.

### 3.4.2.2. Presentation Context



The presentation context shown in the following table is used when IQPACS Imago is queried by an external DICOM node:

Abstract Syntax		Transfer Syntax	Role	Extended negotiation
Name	UID			
PatientRootQueryRetrieveInformationModel IFIND	1.2.840.10008.5.1.4.1.2.1.1	Case 1*	SCU	No
StudyRootQueryRetrieveInformationModel FIND	1.2.840.10008.5.1.4.1.2.2.1	Case 1*	SCU	No
PatientStudyOnlyQueryRetrieveInformationModel IFIND	1.2.840.10008.5.1.4.1.2.3.1	Case 1*	SCU	No

\*Note: Case 1 – The transfer syntaxes supported are listed in **table 3.16**.

**Table 3.10. Presentation contexts to query database request**

The following table lists the C-FIND status values, with their meaning, that may be returned by the IQPACS Imago.

Service Status	Status Code	Meaning
Unable To Process	C000	The C-FIND query identifier is valid for the specified SOP Class but cannot be used to query the database
Success	0000	Matching is complete
Pending	FF00	Matches are continuing

**Table 3.11. C-FIND response values**

The IQPACS Imago ignores the Priority attribute in the C-FIND-RQ messages.

**3.4.2.3. SOP Specific Conformance**

The Optional Keys are returned only if they are specified in the request. The “match” is performed for every optional key supported.

IQPACS Imago doesn’t support case-insensitive matching for PN VR attributes.

**3.4.3. Real World activity: Move instances**

**3.4.3.1. Associated Real World Activity**

The IQPACS Imago is able to move instances to a specified destination, when requested via a C-MOVE request.

**3.4.3.2. Present Context**

The presentation context shown in the following table is used when acting as a SCP for C-MOVE operations:

Abstract Syntax		Transfer Syntax	Role	Extended negotiation
Name	UID			
PatientRootQueryRetrieveInformationModel MOVE	1.2.840.10008.5.1.4.1.2.1.2	Case 2*	SCU	No
StudyRootQueryRetrieveInformationModel MOVE	1.2.840.10008.5.1.4.1.2.2.2	Case 2*	SCU	No
PatientStudyOnlyQueryRetrieveInformationModel MOVE	1.2.840.10008.5.1.4.1.2.3.2	Case 2*	SCU	No

\*Note: Case 2 – The transfer syntaxes supported are listed in **table 3.16**.

**Table 3.12. Presentation contexts to move instances**

### 3.4.3.3. SOP Specific Conformance

When an external node initiates a C-MOVE request, the requested instances can be sent for storage with the transfer syntax the instances use, if it is in the list proposed by the requesting node. If not, the instance can be transformed in the transfer syntax requested by the external application entity.

Service Status	Status Code	Meaning
MoveDestinationUnknown	A801	Not included in the trusted nodes list
UnableToCalculateNumberOfMatches	A701	
UnableToProcess	C000	
unableToPerformSubOperation	A702	
IdentifierDoesNotMatchSOPClass	A900	The C-FIND query identifier contains invalid Elements or values, or is missing mandatory Elements or values for the specified SOP Class
Success	0000	Matching is complete
Pending	FF00	Matches are continuing

**Table 3.13. C-MOVE response values**

The IQPACS Imago ignores the Priority attribute in the C-MOVE-RQ messages.

## 3.4.4. Real World Activity: Store Images

### 3.4.4.1 Associated Real World Activity

The IQPACS Imago is responsible with storing the instances received from modalities, diagnosis workstations or any other DICOM nodes. The IQPACS Imago will issue a failed response if it is unable to store the instance. The incorrect formatted data will not be taken into account and will not be stored.

### 3.4.4.2 Presentation Contexts

The presentation contexts shown in the following tables are acceptable for the IQPACS Imago to store the corresponding images.

Abstract Syntax		Transfer Syntax	Role	Extended negotiation
Name	UID			
AmbulatoryECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.3	Case 1*	SCU	No
BasicTextSR	1.2.840.10008.5.1.4.1.1.88.11	Case 1*	SCU	No
BasicVoiceAudioWaveformStorage	1.2.840.10008.5.1.4.1.1.9.4.1	Case 1*	SCU	No
CardiacElectrophysiologyWaveformStorage	1.2.840.10008.5.1.4.1.1.9.3.1	Case 1*	SCU	No
ComprehensiveSR	1.2.840.10008.5.1.4.1.1.88.33	Case 1*	SCU	No
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1	Case 2*	SCU	No
CTImageStorage	1.2.840.10008.5.1.4.1.1.2	Case 2*	SCU	No
DigitalIntraoralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3	Case 2*	SCU	No
DigitalIntraoralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1	Case 2*	SCU	No
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2	Case 2*	SCU	No
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1	Case 2*	SCU	No
DigitalXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.1	Case 2*	SCU	No
DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1	Case 2*	SCU	No
EnhancedMRIImageStorage	1.2.840.10008.5.1.4.1.1.4.1	Case 2*	SCU	No
EnhancedSR	1.2.840.10008.5.1.4.1.1.88.22	Case 1*	SCU	No
GeneralECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.2	Case 1*	SCU	No
GrayscaleSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.1	Case 1*	SCU	No
HemodynamicWaveformStorage	1.2.840.10008.5.1.4.1.1.9.2.1	Case 1*	SCU	No
KeyObjectSelectionDocument	1.2.840.10008.5.1.4.1.1.88.59	Case 1*	SCU	No
MammographyCADSR	1.2.840.10008.5.1.4.1.1.88.50	Case 1*	SCU	No
MRIImageStorage	1.2.840.10008.5.1.4.1.1.4	Case 2*	SCU	No
MRSpectroscopyStorage	1.2.840.10008.5.1.4.1.1.4.2	Case 2*	SCU	No
MultiframeColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4	Case 2*	SCU	No
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2	Case 2*	SCU	No
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3	Case 2*	SCU	No
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1	Case 2*	SCU	No
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20	Case 2*	SCU	No
NuclearMedicineImageStorageRetired	1.2.840.10008.5.1.4.1.1.15	Case 2*	SCU	No
PositronEmissionTomographyImageStorage	1.2.840.10008.5.1.4.1.1.128	Case 2*	SCU	No
RawDataStorage	1.2.840.10008.5.1.4.1.1.66	Case 1*	SCU	No
RTBeamsTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.4	Case 1*	SCU	No

RTBrachyTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.6	Case 1*	SCU	No
RTDoseStorage	1.2.840.10008.5.1.4.1.1.481.2	Case 1*	SCU	No
RTImageStorage	1.2.840.10008.5.1.4.1.1.481.1	Case 2*	SCU	No
RTPlanStorage	1.2.840.10008.5.1.4.1.1.481.5	Case 1*	SCU	No
RTStructureSetStorage	1.2.840.10008.5.1.4.1.1.481.3	Case 1*	SCU	No
RTTreatmentSummaryRecordStorage	1.2.840.10008.5.1.4.1.1.481.7	Case 1*	SCU	No
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7	Case 2*	SCU	No
StandaloneCurveStorage	1.2.840.10008.5.1.4.1.1.9	Case 1*	SCU	No
StandaloneModalityLUTStorage	1.2.840.10008.5.1.4.1.1.10	Case 1*	SCU	No
StandaloneOverlayStorage	1.2.840.10008.5.1.4.1.1.8	Case 2*	SCU	No
StandalonePETCurveStorage	1.2.840.10008.5.1.4.1.1.129	Case 1*	SCU	No
StandaloneVOILUTStorage	1.2.840.10008.5.1.4.1.1.11	Case 1*	SCU	No
TwelveLeadECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.1	Case 1*	SCU	No
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6.1	Case 2*	SCU	No
UltrasoundImageStorageRetired	1.2.840.10008.5.1.4.1.1.6	Case 2*	SCU	No
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1	Case 2*	SCU	No
UltrasoundMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.3	Case 2*	SCU	No
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1	Case 2*	SCU	No
VLImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.1	Case 2*	SCU	No
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2	Case 2*	SCU	No
VLMultiframeImageStorageRetired	1.2.840.10008.5.1.4.1.1.77.2	Case 2*	SCU	No
VLPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4	Case 2*	SCU	No
VLSlideCoordinatesMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.3	Case 2*	SCU	No
XRayAngiographicBiPlaneImageStorageRetired	1.2.840.10008.5.1.4.1.1.12.3	Case 2*	SCU	No
XrayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1	Case 2*	SCU	No
XrayRadiofluoroscopicImageStorage	1.2.840.10008.5.1.4.1.1.12.2	Case 2*	SCU	No

\*Note: Case 1 – The transfer syntaxes supported are listed in **table 3.16**.

\*Note: Case 2 – The transfer syntaxes supported are listed in **table 3.16**.

**Table 3.14. Presentation contexts to store instances**

### 3.4.4.3. SOP Specific Conformance

For every C-STORE-RQ received, a successful or failed C-STORE response will be send. The Storage SCP always saves the successfully received SOP Instances, so that they will be stored locally. The C-STORE STATUS codes are presented in the following table:

<b>DataSetDoesNotMatchSOPClassError</b>	<ul style="list-style-type: none"> <li>• if one of the following UIDs is missing: <ul style="list-style-type: none"> <li>- StudyInstanceUID,</li> <li>- SeriesInstanceUID,</li> <li>- SOPInstanceUID,</li> <li>- SOPClassUID,</li> </ul> </li> <li>• if the SOPClassUID or SOPInstanceUID from Command differs from the one in the Dataset</li> </ul>
<b>StorageOutOfResources</b>	if there is no space available for storing in the on-line archive
<b>CannotUnderstand</b>	if a parsing error occurred
<b>ProcessingFailure</b>	when errors occurred when saving the information in the database
<b>CoercionOfDataElements</b>	depending on configurations done, the IQPACS Imago generates this message if some attributes were modified
<b>Success</b>	successful storing
<b>SOPClassNotSupported</b>	If the service is inactive

**Table 3.15. C-STORE STATUS codes**

### 3.5 Transfer Syntax Selection Policies

When initiating an association the transfer syntaxes supported are depicted in the table below:

	Transfer Syntax	
	Name	UID
Case 1 (TS supported)	Implicit VR Little Endian	1.2.840.10008.1.2
	Explicit VR Little Endian	1.2.840.10008.1.2.1
	Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99
	Explicit VR Big Endian	1.2.840.10008.1.2.2
Case 2 (TS supported)	Implicit VR Little Endian	1.2.840.10008.1.2
	Explicit VR Little Endian	1.2.840.10008.1.2.1
	Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99
	Explicit VR Big Endian	1.2.840.10008.1.2.2
	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
	JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51
	JPEG Lossless Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57
	JPEG Lossless Non-Hierarchical, First Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70
	JPEG 2000 Lossless Image Compression	1.2.840.10008.1.2.4.90
	JPEG 2000 Lossy Image Compression	1.2.840.10008.1.2.4.91
	RLE Lossless	1.2.840.10008.1.2.5

***Table 3.16. Supported transfer syntaxes***

## 4. COMMUNICATION PROFILES

### 4.1. Supported Communications Stacks (parts 8, 9)

The IQPACS Imago provides DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3.8 of the standard.

### 4.2. TCP/IP Stack

The IQPACS Imago inherits its TCP/IP stack from the operating system.

#### 4.2.1. Physical Media Support

IQPACS Imago is indifferent to the physical media over which TCP/IP operates. It inherits the medium from the operating system upon which it executes. The IQPACS Imago platform has been quality assurance tested to work with 10 and 100 Base-T Ethernet media. Therefore, the use of these media is recommended as the primary point of delivering the network traffic to the server platform.

## 5. EXTENSIONS/SPECIALIZATIONS/PRIVATIZATIONS

### 5.1. Storing avi and mpeg data

IQPACS Imago uses RawDataStorageSOPClass for storing AVI and MPEG data using the following proprietary tags:

Tags	Name	VR, VM	Details
(7FE0, 0711)	MovieData	VR = OB, VM = 1	contains AVI/MPEG
(7FE0, 0107)	MovieFormat	VR = SH, VM = 1	file type (either AVI or MPEG)
(7FE0, 0108)	MovieName	VR = LO, VM = 1	the movie name
(7FE0, 0109)	MovieFile	VR = LO, VM = 1	location where the movie is saved

*Table 5.1. Proprietary tags*

### 5.2. Diagnosis restriction for types of instances

Instances stored with RLE Lossless transfer syntax can be used for diagnosis purposes only if they have a Photometric Interpretation of MONOCHROME 1, MONOCHROME2 or PALETTE COLOR.



## 6. CONFIGURATION

### 6.1. AE Title/Presentation Address Mapping

The AE Title and port for the IQPACS Imago is defined at the configuration level. The default TCP port for the IQPACS Imago is 1127.

In order for communication to be established with other DICOM application entities, the AE Title, port and IP address (or host name) must be defined for each application. These applications are therefore named DICOM nodes and can be modalities, diagnosis workstations, other Diagnosis workstation or any other DICOM compliant application. This information is configurable and can be modified at any time.

### 6.2. Configurable Parameters

Parameter	Configurable (Yes/No)	Default Value
<b>General Parameters</b>		
Time-out waiting for acceptance or rejection Response to an Association Open Request. (Application Level timeout)	Yes	5000 msec
General DIMSE level time-out values	Yes	60000 msec – incoming 60001 msec – outgoing
Time-out waiting for response to TCP/IP connect request. (Low-level timeout)	Yes	<b>5000</b>
Time-out waiting for acceptance of a TCP/IP message over the network. (Low-level timeout)	Yes	<b>5000</b>
Any changes to default TCP/IP settings, such as configurable stack parameters.	No	-
Close delay	Yes	<b>500 msec</b>
<b>AE Specific Parameters</b>		
Maximum PDU size the AE can receive	Yes	16352 bytes
Maximum PDU size the AE can send	Yes	16352 bytes
AE specific DIMSE level time-out values	Yes	
Number of simultaneous Associations by Service and/or SOP Class	Yes	unlimited

**Table 6.1. Configuration parameters table**

The automatic policies for deleting the studies from the hard disk storage are configurable. The studies will be deleted after a percentage of used space is reached. The number of studies that will be deleted when this space is reached is also configurable.

## 7. SUPPORT OF EXTENDED CHARACTER SETS

The IQPACS Imago also supports

ISO-IR 100 Latin-1,

ISO-IR 101 Latin-2,

ISO-IR 109 Latin-3,

ISO-IR 110 Latin-4,

ISO-IR 144 Cyrillic,

ISO-IR 127 Arabic,

ISO-IR 126 Greek,

ISO-IR 138 Hebrew,

ISO-IR 148 Latin-5 (Turkish),

EUC-JP Japanese,

TIS-620 Thai

## 8. CODES AND CONTROLLED TERMINOLOGY

Not applicable