

# **Inobitec DICOM Server (PACS) Conformance Statement**

Version: 1.4.x

# Table of Contents

<b>Preface</b> .....	<b>3</b>
<b>1. Overview</b> .....	<b>4</b>
<b>2. Introduction</b> .....	<b>6</b>
2.1 Revision History.....	6
2.2 Audience.....	6
2.3 Definitions.....	6
2.4 References.....	6
<b>3 Networking</b> .....	<b>7</b>
3.1 Implementation Model.....	7
3.1.1 Application Data Flow.....	7
3.1.2 Functional Definition of Application Entities.....	8
3.1.2.1 Functional Definition of Inobitec DICOM Server (PACS) Store Service AE...8	
3.1.2.2 Functional Definition of Inobitec DICOM Server (PACS) MWL Service AE. .8	
3.1.3 Sequencing of Real World Activities.....	8
3.2 AE Specifications.....	9
3.2.1 Store Service Application Entity Specifications.....	9
3.2.1.1 SOP Classes.....	9
3.2.1.2 Association Establishment Policy.....	18
3.2.1.3 Association Initiation Policy.....	19
3.2.1.4 Association Acceptance Policy.....	28
3.2.2. MWL Service Application Entity Specification.....	49
3.2.2.1 SOP Classes.....	49
3.2.2.2 Association Establishment Policy.....	50
3.2.2.3 Association Initiation Policy.....	50
3.2.2.4 Association Acceptance Policy.....	50
3.2 Physical Network Interfaces.....	54
3.2.1 Supported Communication Stacks.....	54
3.2.2 TCP/IP Stack.....	54
3.2.3 Physical Network Interfaces.....	54
3.2.4 Additional Protocols.....	55
3.2.4.1 WADO.....	55
3.2.5 Security Profiles.....	57
<b>4 Configuration</b> .....	<b>57</b>
4.1 AE Title/Presentation Address Mapping.....	57
4.2 Remote AE Title.....	57
4.3 Parameters.....	57
<b>5 Media Interchange</b> .....	<b>58</b>
<b>6 Support for Extended Character Sets</b> .....	<b>58</b>
<b>7 Security</b> .....	<b>58</b>
7.1 Security Profiles.....	58

## Preface

Inobitec DICOM Server (PACS) is an implementation of an IHE (Integrating the Healthcare Enterprise) compliant Image Archive and Report Repository. This includes the capabilities

- to store and retrieve various kinds of DICOM Objects such as:
  1. Images from multiple modalities,
  2. Grayscale Presentation States [GSPS], which specifies the presentations of images as grayscaling, zoom, text and graphical annotations,
  3. Key Objects [KO], which specifies a particular selection of images for a specified reason and with an attached note,
  4. Structured Reports [SR].
- to process HL7 notification messages from the Order Filler, about Procedure Scheduling, Procedure Updates and Patient Information Updates,
- to process DICOM Modality Performed Procedure Step [MPPS] messages from modalities and forward them to the Order Filler.

Inobitec DICOM Server (PACS) is a server application. Its Web-based User Interface (WebAdmin) is intended for system configuration and monitoring by system administrators.

# 1. Overview

Inobitec DICOM Server (PACS) is a system that provides services for safe storage and retrieve of DICOM evidence object such Images, Key Image Notes, Presentation States, Structured Reports and others.

Dcm4che/archive supports the following IHE Integration Profiles:

- Access to Radiology Information
- Consistent Presentation of Images
- Evidence Documents
- Key Image Note
- Patient Information Reconciliation
- Simple Image and Numeric Report
- Scheduled Workflow
- Basic Security

Dcm4che/archive supports the following network services:

<b>Networking SOP Classes</b>	<b>User of Service (SCU)</b>	<b>Provider of Service (SCP)</b>
<i>Transfer</i>		
US Image Storage	Yes	Yes
US Multi-frame Storage	Yes	Yes
Computed Radiography Image Storage	Yes	Yes
Digital X-Ray Image Storage - For Presentation	Yes	Yes
Digital X-Ray Image Storage - For Processing	Yes	Yes
Digital Mammography X-Ray Image Storage - For Presentation	Yes	Yes
Digital Mammography X-Ray Image Storage - For Preprocessing	Yes	Yes
Digital Intra-oral X-Ray Image Storage - For Presentation	Yes	Yes
Digital Intra-oral X-Ray Image Storage - For Processing	Yes	Yes
CT Image Storage	Yes	Yes
MR Image Storage	Yes	Yes
Enhanced MR Image Storage	Yes	Yes
Secondary Capture Image Storage	Yes	Yes
X-Ray Angiographic Image Storage	Yes	Yes
X-Ray Radiofluoroscopic Image Storage	Yes	Yes
Nuclear Medicine Image Storage	Yes	Yes
VL Endoscopic Image Storage	Yes	Yes
VL Microscopic Image Storage	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	Yes	Yes

VL Photographic Image Storage	Yes	Yes
Positron Emission Tomography Image Storage	Yes	Yes
RT Image Storage	Yes	Yes
Raw Data Storage	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	Yes	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	Yes	Yes
Multi-frame Color Secondary Capture Image Storage	Yes	Yes
Grayscale Softcopy Presentation State Storage	Yes	Yes
Hardcopy Grayscale Image Storage SOP Class	Yes	Yes
Hardcopy Color Image Storage SOP Class	Yes	Yes
Basic Text SR	Yes	Yes
Enhanced SR	Yes	Yes
Comprehensive SR	Yes	Yes
Key Object Selection Document	Yes	Yes
Storage Commitment Push Model	No	Yes
<i>Workflow Management</i>		
Modality Worklist - FIND	No	Yes
Modality Performed Procedure Step	Yes	Yes
Instance Availability Notification	Yes	No
Basic Study Content Notification	Yes	No
<i>Query/Retrieve</i>		
Patient Root Q/R — FIND	No	Yes
Patient Root Q/R - MOVE	No	Yes
Study Root Q/R - FIND	No	Yes
Study Root Q/R - MOVE	No	Yes
Patient/Study Only Q/R - FIND	No	Yes
Patient/Study Only Q/R — MOVE	No	Yes
<i>Connectivity Verification</i>		
Verification	Yes	Yes

## 2. Introduction

### 2.1 Revision History

Revision 1

May 2016

Initial draft

### 2.2 Audience

The reader of this document is concerned with software design and/or system integration issues.

It is assumed that the reader of this document is familiar with the DICOM 3.0 Standard and with the terminology and concepts which are used in this standard.

This document specifies the compliance of Inobitec DICOM Server (PACS) to file reading/writing and file transferring support to the DICOM 3.0 standard.

### 2.3 Definitions

Acronym/Terms	Definition
AE	DICOM Application Entity
AET	Application Entity Title
ANSI	American National Standards Institute
DICOM	Digital Imaging and Communications in Medicine
DIMSE-C	DICOM Message Service Element-Composite
DIMSE-N	DICOM Message Service Element-Normalized
FSC	File Set Creator
FSR	File Set Reader
FSU	File Set Updater
PDU	Protocol Data Unit
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair
UID	Unique Identifier
WADO	Web Access to DICOM Persistent Objects

### 2.4 References

[DICOM]

Digital Imaging and Communications in Medicine (DICOM), NEMA PS 3.1-3.16, 2004

# 3 Networking

## 3.1 Implementation Model

### 3.1.1 Application Data Flow

Inobitec DICOM Server (PACS) is logically divided in 2 different DICOM Application Entities: Store Service and MWL Service.

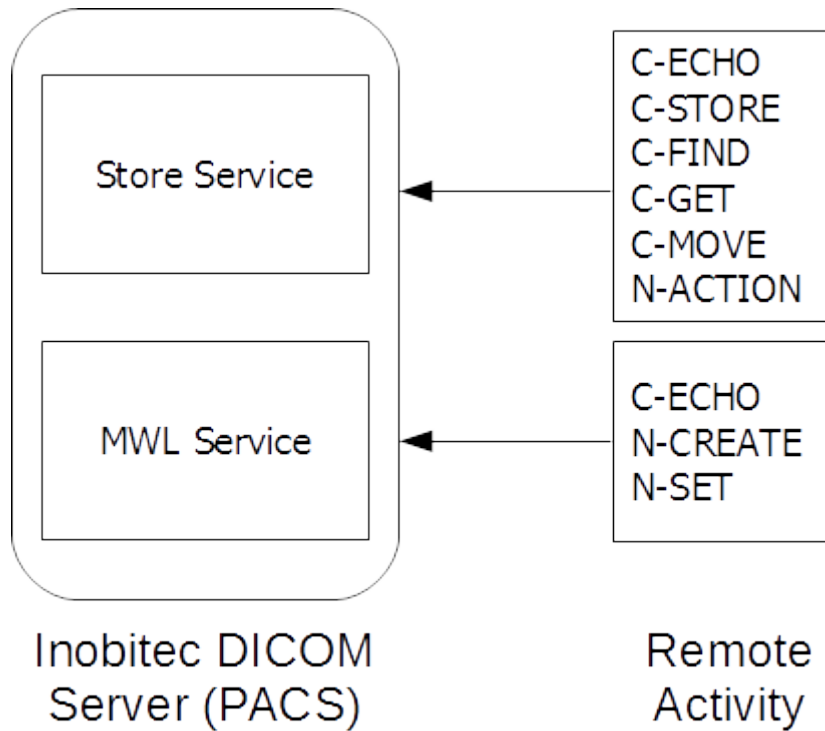


Figure 1 – The Application Data Flow Diagram

The Store Service AE implements the DICOM Storage Service Class, the Verification Service Class, the DICOM Storage Commitment Service as SCU and as SCP and Query/Retrieve Services.

The MWL Service AE implements the Verification Service Class, the Basic Worklist Management Service Class and the DICOM Modality Performed Procedure Step Service.

The Application Entities (AEs) SCP & SCU detailed in the application data flow diagram are all included in the Inobitec DICOM Server (PACS).

They may be invoked multiple times and the instances may operate simultaneously and asynchronously.

## **3.1.2 Functional Definition of Application Entities**

### **3.1.2.1 Functional Definition of Inobitec DICOM Server (PACS) Store Service AE**

Inobitec DICOM Server (PACS) Store Service Application Entity waits for another application to connect at the presentation address configured for its Application Entity Title. When another application connects, the Store Service AE expects it to be a DICOM application.

The Store Service AE will accept Association with Presentation Contexts for SOP Classes for Verification, Storage, Storage Commitment and Query/Retrieve Service Classes. DICOM Instances received in a Storage Request are filed on local (attached/mounted) file system(s). A subset of attributes from received Instances is also stored in records local database.

Once received a Retrieve (Move) request, Query/Retrieve Server AE will initiate a new association and send the requested instances to the Move Destination AE.

### **3.1.2.2 Functional Definition of Inobitec DICOM Server (PACS) MWL Service AE**

Inobitec DICOM Server (PACS) MWL Service Application Entity waits for another application to connect at the presentation address configured for its Application Entity Title. When another application connects, the Modality Worklist Server AE expects it to be a DICOM application.

The MWL Service AE will accept Associations with Presentation Contexts for SOP Classes of the Verification, Modality Worklist and Modality Performed Procedure Step Service Classes.

The MWL Service AE stores the received MPPS instances in the local database.

When a Modality Worklist Find request is received, Modality Worklist Server AE will query the local database for a list of Scheduled Procedure Steps matching the query and will return a pending C-Find response for each match.

## **3.1.3 Sequencing of Real World Activities**

All the application entities are asynchronous processes that can run at the same time. All DICOM objects are indexed and stored in the Inobitec DICOM Server (PACS) database, when received. Inobitec DICOM Server (PACS) can only send DICOM objects that are stored and indexed in the Inobitec DICOM Server (PACS) database. Inobitec DICOM Server (PACS) must be running on the operating system to offer the applications entities (SCP).



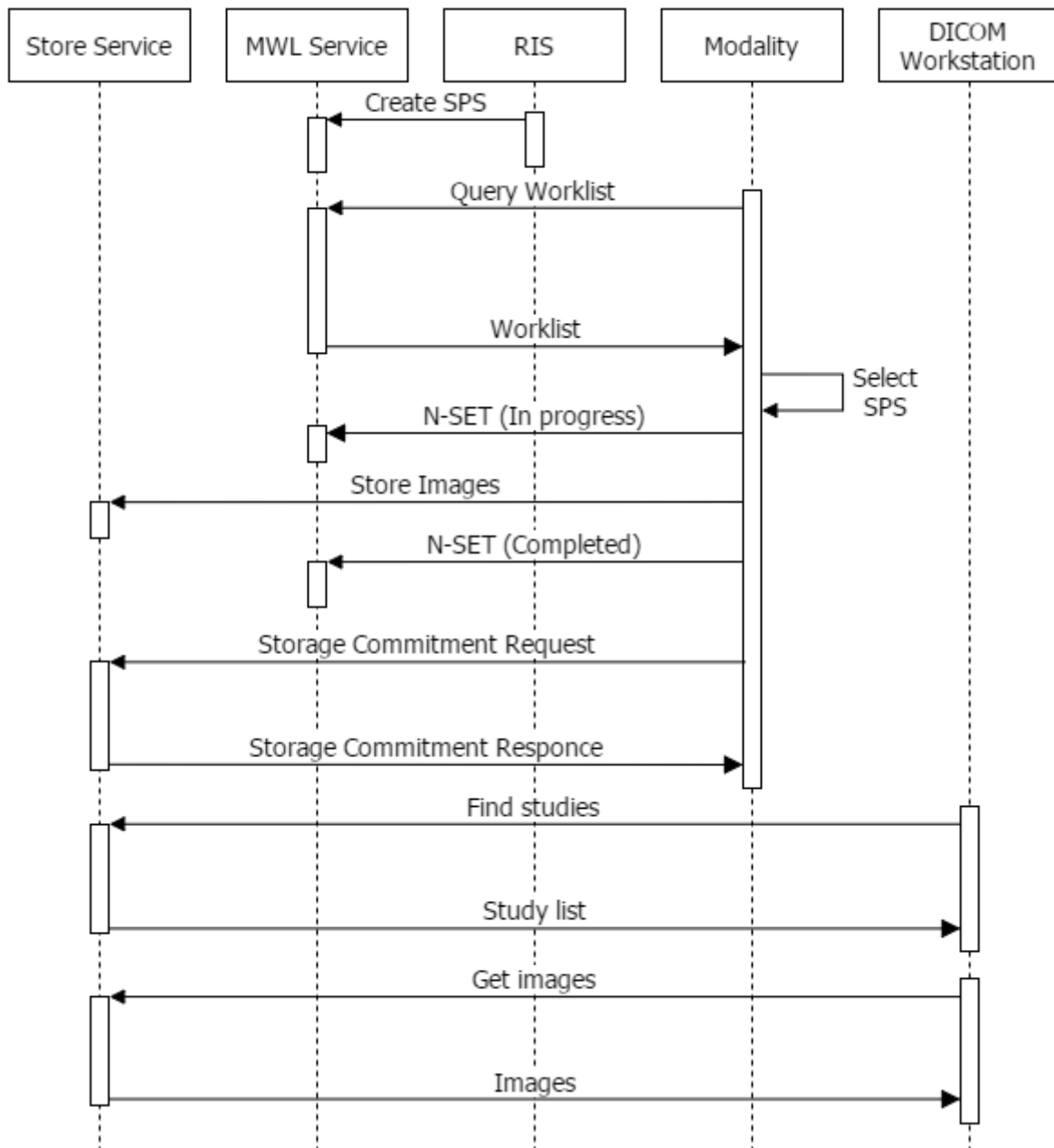


Figure 2 – Sequencing Constraints

## 3.2 AE Specifications

### 3.2.1 Store Service Application Entity Specifications

#### 3.2.1.1 SOP Classes

Inobitec DICOM Server (PACS) Store Service Application Entity for C-STORE provides 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

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	No	Yes
Stored Print Storage	1.2.840.10008.5.1.1.27	No	Yes
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	No	Yes
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	No	Yes
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes
Digital X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Digital Mammography X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
Digital Mammography X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
Digital Intra Oral X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	No	Yes
Digital Intra Oral X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	No	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	No	Yes
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	No	Yes
Ultrasound Multiframe Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.3	No	Yes
Ultrasound Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	No	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	No	Yes
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	No	Yes
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	No	Yes
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	No	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.5	No	Yes
Ultrasound Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.6	No	Yes
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	No	Yes
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes
Multiframe Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	No	Yes
Multiframe Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	No	Yes

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Multiframe Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	No	Yes
Multiframe True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	No	Yes
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	No	Yes
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	No	Yes
Twelve Lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	No	Yes
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	No	Yes
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	No	Yes
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	No	Yes
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	No	Yes
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	No	Yes
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	No	Yes
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	No	Yes
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	No	Yes
Standalone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	No	Yes
Standalone VOILUT Storage	1.2.840.10008.5.1.4.1.1.11	No	Yes
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	No	Yes
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	No	Yes
Pseudo Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	No	Yes
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	No	Yes
XA XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	No	Yes
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	No	Yes
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	No	Yes
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	No	Yes
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	No	Yes
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	No	Yes
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	No	Yes
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	No	Yes

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
X-Ray Angiographic BiPlane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	No	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	No	Yes
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	No	Yes
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	No	Yes
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	No	Yes
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	No	Yes
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	No	Yes
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	No	Yes
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	No	Yes
VL Image Storage	1.2.840.10008.5.1.4.1.1.77.1	No	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	No	Yes
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	No	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	No	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	No	Yes
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	No	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	No	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	No	Yes
Ophthalmic Photography 8-Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	No	Yes
Ophthalmic Photography 16-Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	No	Yes
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	No	Yes
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	No	Yes
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	No	Yes
VL MultiFrame Image Storage	1.2.840.10008.5.1.4.1.1.77.2	No	Yes
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	No	Yes
Autorefractometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	No	Yes
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	No	Yes
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	No	Yes
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	No	Yes
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	No	Yes

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	No	Yes
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	No	Yes
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	No	Yes
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	No	Yes
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	No	Yes
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	No	Yes
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	No	Yes
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	No	Yes
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	No	Yes
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	No	Yes
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	No	Yes
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	No	Yes
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	No	Yes
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	No	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	No	Yes
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	No	Yes
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	No	Yes
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	No	Yes
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	No	Yes
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	No	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	No	Yes
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	No	Yes
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	No	Yes
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	No	Yes
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	No	Yes
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	No	Yes
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	No	Yes
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	No	Yes
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	No	Yes
Generic Implant Template Storage	1.2.840.10008.5.1.4.43.1	No	Yes
Implant Assembly Template Storage	1.2.840.10008.5.1.4.44.1	No	Yes

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Implant Template Group Storage	1.2.840.10008.5.1.4.45.1	No	Yes

Inobitec DICOM Server (PACS) Store Service Application Entity for C-FIND, C-GET, C-MOVE provides Standard Conformance to the following SOP Classes:

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Verification SOP Class	1.2.840.10008.1.1	Yes	Yes
Patient Root Q/R Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	No	Yes
Patient Root Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.1.2	No	Yes
Study Root Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	No	Yes
Study Root Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	No	Yes
Patient/Study Only Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.3.1	No	Yes
Patient/Study Only Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.3.2	No	Yes
Stored Print Storage	1.2.840.10008.5.1.1.27	Yes	No
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	Yes	No
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	Yes	No
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	No
Digital X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
Digital Mammography X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	No
Digital Mammography X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	No
Digital Intra Oral X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Yes	No
Digital Intra Oral X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	No
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	No
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	No

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Ultrasound Multiframe Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.3	Yes	No
Ultrasound Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	No
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Yes	No
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Yes	No
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	Yes	No
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.5	Yes	No
Ultrasound Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.6	Yes	No
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
Multiframe Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	No
Multiframe Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Yes	No
Multiframe Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Yes	No
Multiframe True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	No
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Yes	No
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Yes	No
Twelve Lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	No
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	No
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	No
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	No
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	No
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	No
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Yes	No
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Yes	No
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	Yes	No
Standalone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	Yes	No
Standalone VOILUT Storage	1.2.840.10008.5.1.4.1.1.11	Yes	No

<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Yes	No
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	Yes	No
Pseudo Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	Yes	No
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	Yes	No
XA XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	Yes	No
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	Yes	No
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	No
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	No
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	Yes	No
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	Yes	No
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Yes	No
X-Ray Angiographic BiPlane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	Yes	No
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	No
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Yes	No
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Yes	No
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	No
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	Yes	No
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Yes	No
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Yes	No
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Yes	No
VL Image Storage	1.2.840.10008.5.1.4.1.1.77.1	Yes	No
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	No
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	No
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	No
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	No
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No



<b>SOP Class Name</b>	<b>SOP Class UID</b>	<b>SCU</b>	<b>SCP</b>
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	No
Ophthalmic Photography 8-Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Photography 16-Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	No
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	No
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	Yes	No
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	Yes	No
VL MultiFrame Image Storage	1.2.840.10008.5.1.4.1.1.77.2	Yes	No
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	Yes	No
Autorefractometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	Yes	No
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	Yes	No
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	Yes	No
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	Yes	No
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	Yes	No
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	Yes	No
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	Yes	No
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	Yes	No
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	Yes	No
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Yes	No
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Yes	No
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	Yes	No
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	Yes	No
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	Yes	No
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	Yes	No
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	Yes	No
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	Yes	No
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	Yes	No
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Yes	No
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	Yes	No
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	Yes	No
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Yes	No
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	No
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Yes	No
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Yes	No
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Yes	No
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Yes	No
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Yes	No
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Yes	No
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Yes	No
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Yes	No
Generic Implant Template Storage	1.2.840.10008.5.1.4.43.1	Yes	No
Implant Assembly Template Storage	1.2.840.10008.5.1.4.44.1	Yes	No
Implant Template Group Storage	1.2.840.10008.5.1.4.45.1	Yes	No

### 3.2.1.2 Association Establishment Policy

#### 3.2.1.2.1 General

The Inobitec DICOM Server (PACS) Store Service AE can both accept and propose Association Requests. The Inobitec DICOM Server (PACS) Store Service AE will accept Association Requests for the Verification, Storage, Storage Commitment Push Model and Query/Retrieve Services.

It will propose Associations for Verification and Storage Services.

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

Standard Application Context	1.2.840.10008.3.1.1.1
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#### 3.2.1.2.2 Number of Associations

The Inobitec DICOM Server (PACS) Store Service AE can support multiple simultaneous Association requested by peer AEs. The number of Association requests is unlimited and can not be configured.

Maximum number of simultaneous Association	Unlimited (Not configurable)
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### 3.2.1.2.3 Asynchronous Nature

The Inobitec DICOM Server (PACS) Store Service AE handle each association synchronously. The Inobitec DICOM Server (PACS) doesn't support asynchronous operations in an association.

Maximum number of outstanding asynchronous transactions	1 (Not configurable)
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### 3.2.1.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Implementation Class UID	1.2.276.0.7230010.3.0.3.6.1
Implementation Version Name	OFFIS_DCMTK_361

### 3.2.1.3 Association Initiation Policy

#### 3.2.1.3.1 Activity – Send Images requested by an External Peer AE

##### 3.2.1.3.1.1 Description and Sequencing of Activities

The Inobitec DICOM Server (PACS) Store Service will initiate a new Association when a valid C-MOVE Request has been performed by an external Peer. The Store Service AE will send the Association Request to the specific C-MOVE destination, and upon successful negotiation of the required Presentation Context the image transfer is started. In all cases an attempt will be made to transmit all the indicated images in a single Association but this may not always be possible (for example, if requested image has different Transfer Syntaxes Store Service will create sub-association). The Association will be released when all the images have been sent.

If an error occurs during transmission over an open Association then the image transfer is halted. The Store Service AE will not attempt to independently retry the image export.

##### 3.2.1.3.1.2 Proposed Presentation Contexts

The Inobitec DICOM Server (PACS) Store Service will propose Presentation Contexts as shown in the following table:

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Stored Print Storage	1.2.840.10008.5.1.1.27	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	Transfer Syntaxes for Image Storage Services		SCP	None
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	Transfer Syntaxes for Image Storage Services		SCP	None
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Digital X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Digital Mammography X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Digital Mammography X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Transfer Syntaxes for Image Storage Services		SCP	None
Digital Intra Oral X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Transfer Syntaxes for Image Storage Services		SCP	None
Digital Intra Oral X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Transfer Syntaxes for Image Storage Services		SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Multiframe Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.3	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Transfer Syntaxes for Image Storage Services		SCP	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Transfer Syntaxes for Image Storage Services		SCP	None
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	Transfer Syntaxes for Image Storage Services		SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.5	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.6	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Transfer Syntaxes for Image Storage Services		SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Transfer Syntaxes for Image Storage Services		SCP	None
Multiframe Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Transfer Syntaxes for Image Storage Services		SCP	None
Multiframe Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Transfer Syntaxes for Image Storage Services		SCP	None
Multiframe Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Transfer Syntaxes for Image Storage Services		SCP	None
Multiframe True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Transfer Syntaxes for Image Storage Services		SCP	None
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Transfer Syntaxes for Image Storage Services		SCP	None
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Transfer Syntaxes for Image Storage Services		SCP	None
Twelve Lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1 .1.9.3.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1 .1.9.4.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
General Audio Waveform Storage	1.2.840.10008.5.1.4.1 .1.9.4.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1 .1.9.5.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1 .1.9.6.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Standalone Modality LUT Storage	1.2.840.10008.5.1.4.1 .1.10	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Standalone VOILUT Storage	1.2.840.10008.5.1.4.1 .1.11	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Pseudo Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
XA XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1 .1.12.1	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1 .1.12.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1 .1.12.2	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1 .1.12.2.1	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Transfer Syntaxes for Image Storage Services		SCP	None
X-Ray Angiographic BiPlane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	Transfer Syntaxes for Image Storage Services		SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Transfer Syntaxes for Image Storage Services		SCP	None
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Transfer Syntaxes for Non-Image Storage Services		SCP	None
VL Image Storage	1.2.840.10008.5.1.4.1.1.77.1	Transfer Syntaxes for Image Storage Services		SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Transfer Syntaxes for Image Storage Services		SCP	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
VL Photographic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.4	Transfer Syntaxes for Image Storage Services		SCP	None
Video Photographic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.4.1	Transfer Syntaxes for Image Storage Services		SCP	None
Ophthalmic Photography 8-Bit Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.1	Transfer Syntaxes for Image Storage Services		SCP	None
Ophthalmic Photography 16-Bit Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.2	Transfer Syntaxes for Image Storage Services		SCP	None
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.4	Transfer Syntaxes for Image Storage Services		SCP	None
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.6	Transfer Syntaxes for Image Storage Services		SCP	None
VL MultiFrame Image Storage	1.2.840.10008.5.1.4.1 .1.77.2	Transfer Syntaxes for Image Storage Services		SCP	None
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Autorefracton Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1 .1.78.6	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.7	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1 .1.78.8	Transfer Syntaxes for Non-Image Storage Services		SCP	None



<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	Transfer Syntaxes for Non-Image Storage Services		SCP	None
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Transfer Syntaxes for Image Storage Services		SCP	None
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Transfer Syntaxes for Image Storage Services		SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Generic Implant Template Storage	1.2.840.10008.5.1.4.4.3.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Implant Assembly Template Storage	1.2.840.10008.5.1.4.4.4.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Implant Template Group Storage	1.2.840.10008.5.1.4.4.5.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None

Proposed Transfer Syntaxes for Non-Image Storage Services:

<b>Name</b>	<b>UID</b>
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1

Proposed Transfer Syntaxes for Image Storage Services:

<b>Name</b>	<b>UID</b>
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
JPEG Baseline	1.2.840.10008.1.2.4.50
JPEG Extended	1.2.840.10008.1.2.4.51
JPEG Lossless, Non-Hierarchical	1.2.840.10008.1.2.4.57
JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70
JPEG-LS Lossless Image Compression	1.2.840.10008.1.2.4.80
JPEG-LS Lossy (Near-Lossless) Image	1.2.840.10008.1.2.4.81
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

**3.2.1.3.1.3 Specific Conformance for Image, SR, KIN and SPS SOP Classes**

When a SOP Instance is selected for export from Inobitec DICOM Server (PACS) Store Service, its contents will be exported as it was originally received.

The Store Service AE will exhibit the following behavior according to the Status Code value returned in a C-STORE Response from a destination C-STORE SCP:

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Success	Success	0000	The remote Storage SCP has successfully stored the exported SOP Instance. The appropriate PENDING or SUCCESS Status will be sent in the C-MOVE Response. Success indication message is output to the Service Log.
Pending	Pending		Transmission in progress.
Error	Unable To Process	c000	This is treated as a permanent Failure. The appropriate Status will be sent in the C-MOVE Response. Error indication message is output to the Service Log.
Canceled	Sub Operations Terminated Due To Cancel Indication	fe00	Image transmission was canceled before all images sent.

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
*	*	Any other status code	This is treated as a permanent Failure. The appropriate Status will be sent in the C-MOVE Response. Error indication message is output to the Service Log.

The Inobitec DICOM Server (PACS) Store Service AE Communication Failure Behavior:

<b>Exception</b>	<b>Behavior</b>
Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. The STORAGESCP AE is waiting for the next C-STORE Request on an open Association but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If some Composite SOP Instances have already been successfully received then they are maintained in the database. They are not automatically discarded because of a later failure.
Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout). I.e. The STORAGE-SCP AE is waiting for the next C-STORE Data Set PDU but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If a C-STORE Data Set has not been fully received then the data already received is discarded. If some Composite SOP Instances have already been successfully received over the Association then they are maintained in the database.
Association aborted by the SCU or the network layers indicate communication loss (i.e. low-level TCP/IP socket closure)	Error message is output to the Service Log. If some Composite SOP Instances have already been successfully received then they are maintained in the database. They are not automatically discarded because of a later failure.

### **3.2.1.4 Association Acceptance Policy**

#### **3.2.1.4.1 Activity – Receive Images and Storage Commitment Requests**

##### **3.2.1.4.1.1 Description and Sequencing of Activities**

A remote peer DICOM Application Entity, acting as an Storage SCU, establish an association with Inobitec DICOM Server (PACS) Store Service that accept these Associations for the purpose of receiving supported SOP Class Instances and Storage Commitment requests.

In the default configuration any Calling and Called AET will be accepted. But the Called AET does not correspond to the actual Storage Server AET, only a Presentation Context for the Verification SOP Class will be accepted and the SCU can only verify the DICOM Association, but cannot invoke any other related DICOM service.

When an association has been established the Sequencing of Real-World Activities is as described in Section 3.1.1, "Sequencing of Real-World Activities".

The Storage Server AE may reject Association attempts as shown in the table below. The Result, Source and Reason / Diag columns represent the values returned in the corresponding fields of an ASSOCIATE-RJ PDU (see PS 3.8, Section 9.3.4).

<b>Result</b>	<b>Source</b>	<b>Reason</b>	<b>Description</b>
1- rejected permanent	user	3 – calling AE title not recognized	The Association request contained an unrecognized Calling AE Title. An association request with the same parameters will NOT succeed at a later time unless configuration changes are made.

### 3.2.1.4.1.2 Accepted Presentation Contexts

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Stored Print Storage	1.2.840.10008.5.1.1.27	Transfer Syntaxes for Image Storage Services		SCP	None
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	Transfer Syntaxes for Image Storage Services		SCP	None
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	Transfer Syntaxes for Image Storage Services		SCP	None
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Digital X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Digital Mammography X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Digital Mammography X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Digital Intra Oral X-Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Transfer Syntaxes for Image Storage Services		SCP	None
Digital Intra Oral X-Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Transfer Syntaxes for Image Storage Services		SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Multiframe Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.3	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Transfer Syntaxes for Image Storage Services		SCP	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Transfer Syntaxes for Image Storage Services		SCP	None
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	Transfer Syntaxes for Image Storage Services		SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.5	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Image Storage RETIRED	1.2.840.10008.5.1.4.1.1.6	Transfer Syntaxes for Image Storage Services		SCP	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Transfer Syntaxes for Image Storage Services		SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Transfer Syntaxes for Image Storage Services		SCP	None
Multiframe Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Multiframe Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Transfer Syntaxes for Image Storage Services		SCP	None
Multiframe Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Transfer Syntaxes for Image Storage Services		SCP	None
Multiframe True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Transfer Syntaxes for Image Storage Services		SCP	None
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Transfer Syntaxes for Image Storage Services		SCP	None
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Transfer Syntaxes for Image Storage Services		SCP	None
Twelve Lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Standalone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Standalone VOILUT Storage	1.2.840.10008.5.1.4.1.1.11	Transfer Syntaxes for Non-Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Pseudo Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
XA XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1 .1.11.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1 .1.12.1	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1 .1.12.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1 .1.12.2	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1 .1.12.2.1	Transfer Syntaxes for Image Storage Services		SCP	None
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1 .1.13.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1 .1.13.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1 .1.13.1.3	Transfer Syntaxes for Image Storage Services		SCP	None
X-Ray Angiographic BiPlane Image Storage	1.2.840.10008.5.1.4.1 .1.12.3	Transfer Syntaxes for Image Storage Services		SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1 .1.20	Transfer Syntaxes for Image Storage Services		SCP	None
Raw Data Storage	1.2.840.10008.5.1.4.1 .1.66	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Spatial Registration Storage	1.2.840.10008.5.1.4.1 .1.66.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None



<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1 .1.66.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1 .1.66.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Segmentation Storage	1.2.840.10008.5.1.4.1 .1.66.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Surface Segmentation Storage	1.2.840.10008.5.1.4.1 .1.66.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1 .1.67	Transfer Syntaxes for Non-Image Storage Services		SCP	None
VL Image Storage	1.2.840.10008.5.1.4.1 .1.77.1	Transfer Syntaxes for Image Storage Services		SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.1.1	Transfer Syntaxes for Image Storage Services		SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.2	Transfer Syntaxes for Image Storage Services		SCP	None
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.2.1	Transfer Syntaxes for Image Storage Services		SCP	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.3	Transfer Syntaxes for Image Storage Services		SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.4	Transfer Syntaxes for Image Storage Services		SCP	None
Video Photographic Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.4.1	Transfer Syntaxes for Image Storage Services		SCP	None
Ophthalmic Photography 8-Bit Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.1	Transfer Syntaxes for Image Storage Services		SCP	None
Ophthalmic Photography 16-Bit Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.2	Transfer Syntaxes for Image Storage Services		SCP	None
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.5.4	Transfer Syntaxes for Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1 .1.77.1.6	Transfer Syntaxes for Image Storage Services		SCP	None
VL MultiFrame Image Storage	1.2.840.10008.5.1.4.1 .1.77.2	Transfer Syntaxes for Image Storage Services		SCP	None
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Autorefractometry Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1 .1.78.6	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1 .1.78.7	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1 .1.78.8	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Macular Grid Thickness And Volume Report Storage	1.2.840.10008.5.1.4.1 .1.79.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1 .1.80.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1 .1.88.11	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1 .1.88.22	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1 .1.88.33	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Procedure Log Storage	1.2.840.10008.5.1.4.1 .1.88.40	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1 .1.88.50	Transfer Syntaxes for Non-Image Storage Services		SCP	None

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	Transfer Syntaxes for Non-Image Storage Services		SCP	None
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Transfer Syntaxes for Image Storage Services		SCP	None
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	Transfer Syntaxes for Image Storage Services		SCP	None
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	Transfer Syntaxes for Image Storage Services		SCP	None
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Transfer Syntaxes for Image Storage Services		SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Transfer Syntaxes for Non-Image Storage Services		SCP	None

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Transfer Syntaxes for Non-Image Storage Services		SCP	None
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Generic Implant Template Storage	1.2.840.10008.5.1.4.4.3.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Implant Assembly Template Storage	1.2.840.10008.5.1.4.4.4.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None
Implant Template Group Storage	1.2.840.10008.5.1.4.4.5.1	Transfer Syntaxes for Non-Image Storage Services		SCP	None

Accepted Transfer Syntaxes for Non-Image Storage Services:

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1

Accepted Transfer Syntaxes for Image Storage Services:

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
JPEG Baseline	1.2.840.10008.1.2.4.50
JPEG Extended	1.2.840.10008.1.2.4.51
JPEG Lossless, Non-Hierarchical	1.2.840.10008.1.2.4.57
JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70
JPEG-LS Lossless Image Compression	1.2.840.10008.1.2.4.80
JPEG-LS Lossy (Near-Lossless) Image	1.2.840.10008.1.2.4.81
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

If the Called AET is not corresponding to the actual Storage Server AET, it only will be accepted the Presentation Context for the Verification SOP Class.

### 3.2.1.4.1.3 Specific Conformance for Verification SOP Class

The Inobitec DICOM Server (PACS) Store Service provides standard conformance to the DICOM Verification Service Class as a SCP. The status code for the C-ECHO is described in

the following table:

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Success	Success	0000	The C-ECHO request is accepted

#### **3.2.1.4.1.4 Specific Conformance for Storage SOP Classes**

The associated Activity with the Storage service is the storage of medical DICOM data received over the network on a designated storage repository. The Inobitec DICOM Server (PACS) Store Service AE will return a failure status if it is unable to store the received instance(s).

The Inobitec DICOM Server (PACS) Store Service AE does not have any dependencies on the number of Associations used to send images to it. Images belonging to more than one Study or Series can be sent over a single or multiple Associations. Images belonging to a single Study or Series can also be sent over different Associations. There is no limit on either the number of SOP Instances or the maximum amount of total SOP Instance data that can be transferred over a single Association.

The Inobitec DICOM Server (PACS) Store Service AE is configured to retain the original DICOM data in DICOM Part 10 compliant file format. The Inobitec DICOM Server (PACS) Store Service AE is Level 2 (Full) conformant as a Storage SCP.

In addition, all Private and SOP Class Extended Elements are maintained in the DICOM format files. In addition to saving all Elements in files, a subset of the Elements are stored in the dcm4che/archive Query/Retrieve Server database to support query and retrieval requests and also allow updating of Patient, Study, and Series information by user input, or demographic and Study related messages.

If the received instance is a duplicate of a previously received instance, the old file and database information will not be overwritten with the new one.

The Inobitec DICOM Server (PACS) Store Service provides standard conformance to the DICOM Storage Service Class as a SCP. The status code for the C-STORE is described in the following table:

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Success	Success	0000	The Composite SOP Instance was successfully received, verified, and stored in the system repository
Error	Out Of Resources	a700	This status is returned due to internal errors such as a processing failure response from the internal database or a filesystem operation. The appropriate Status will be sent in the C-STORE Response. Error indication message is output to the Service Log

## Store Service AE Communication Failure Reasons

Exception	Behavior
Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. The STORAGESCP AE is waiting for the next C-STORE Request on an open Association but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If some Composite SOP Instances have already been successfully received then they are maintained in the database. They are not automatically discarded because of a later failure.
Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout). I.e. The STORAGE-SCP AE is waiting for the next C-STORE Data Set PDU but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If a C-STORE Data Set has not been fully received then the data already received is discarded. If some Composite SOP Instances have already been successfully received over the Association then they are maintained in the database.
Association aborted by the SCU or the network layers indicate communication loss (i.e. low-level TCP/IP socket closure)	Error message is output to the Service Log. If some Composite SOP Instances have already been successfully received then they are maintained in the database. They are not automatically discarded because of a later failure.

### 3.2.1.4.1.5 Specific Conformance for Storage Commitment SOP Class

The associated Activity with the Storage Commitment Push Model service is the communication by the Inobitec DICOM Server (PACS) Store Service AE to peer AEs that it has committed to permanently store Composite SOP Instances that have been sent to it. It thus allows peer AEs to determine whether the Inobitec DICOM Server (PACS) Store Service has taken responsibility for the archiving of specific SOP Instances so that they can be flushed from the peer AE system.

The Inobitec DICOM Server (PACS) Store Service AE takes the list of Composite SOP Instance UIDs specified in a Storage Commitment Push Model N-ACTION Request and checks if they are present in the Inobitec DICOM Server (PACS) Store Service repository. As long as the Composite SOP Instance UIDs are present in the database, the dcm4che Storage Server AE will consider those Composite SOP Instance UIDs to be successfully archived. The Inobitec DICOM Server (PACS) Store Service AE does not require the Composite SOP Instances to actually be successfully written to archive media in order to commit to responsibility for maintaining these SOP Instances.

Once the Inobitec DICOM Server (PACS) Store Service AE has checked for the existence of the specified Composite SOP Instances, it will then attempt to send the Notification request (N-EVENT-REPORT-RQ). The Inobitec DICOM Server (PACS) Store Service AE will request a new Association with the peer AE that made the original N-ACTION Request. The Inobitec DICOM Server (PACS) Store Service AE will not cache Storage Commitment Push Model N-ACTION Requests that specify Composite SOP Instances that have not yet been transferred to the Inobitec DICOM Server (PACS) Store Service.

<b>Supported Referenced SOP Classes</b>
Stored Print Storage
Hardcopy Grayscale Image Storage
Hardcopy Color Image Storage
Computed Radiography Image Storage
Digital X-Ray Image Storage For Presentation
Digital X Ray Image Storage For Processing
Digital Mammography X-Ray Image Storage For Presentation
Digital Mammography X-Ray Image Storage For Processing
Digital Intra Oral X-Ray Image Storage For Presentation
Digital Intra Oral X-Ray Image Storage For Processing
CT Image Storage
Enhanced CT Image Storage
Ultrasound Multiframe Image Storage RETIRED
Ultrasound Multiframe Image Storage
MR Image Storage
Enhanced MR Image Storage
MR Spectroscopy Storage
Enhanced MR Color Image Storage
Nuclear Medicine Image Storage
Ultrasound Image Storage RETIRED
Ultrasound Image Storage
Enhanced US Volume Storage
Secondary Capture Image Storage
Multiframe Single Bit Secondary Capture Image Storage
Multiframe Grayscale Byte Secondary Capture Image Storage
Multiframe Grayscale Word Secondary Capture Image Storage
Multiframe True Color Secondary Capture Image Storage
Standalone Overlay Storage
Standalone Curve Storage
Twelve Lead ECG Waveform Storage
General ECG Waveform Storage
Ambulatory ECG Waveform Storage
Hemodynamic Waveform Storage

<b>Supported Referenced SOP Classes</b>
Cardiac Electrophysiology Waveform Storage
Basic Voice Audio Waveform Storage
General Audio Waveform Storage
Arterial Pulse Waveform Storage
Respiratory Waveform Storage
Standalone Modality LUT Storage
Standalone VOILUT Storage
Grayscale Softcopy Presentation State Storage
Color Softcopy Presentation State Storage
Pseudo Color Softcopy Presentation State Storage
Blending Softcopy Presentation State Storage
XA XRF Grayscale Softcopy Presentation State Storage
X-Ray Angiographic Image Storage
Enhanced XA Image Storage
X-Ray Radiofluoroscopic Image Storage
Enhanced XRF Image Storage
X-Ray 3D Angiographic Image Storage
X-Ray 3D Craniofacial Image Storage
Breast Tomosynthesis Image Storage
X-Ray Angiographic BiPlane Image Storage
Nuclear Medicine Image Storage
Raw Data Storage
Spatial Registration Storage
Spatial Fiducials Storage
Deformable Spatial Registration Storage
Segmentation Storage
Surface Segmentation Storage
Real World Value Mapping Storage
VL Image Storage
VL Endoscopic Image Storage
Video Endoscopic Image Storage
VL Microscopic Image Storage
Video Microscopic Image Storage



<b>Supported Referenced SOP Classes</b>
VL Slide Coordinates Microscopic Image Storage
VL Photographic Image Storage
Video Photographic Image Storage
Ophthalmic Photography 8-Bit Image Storage
Ophthalmic Photography 16-Bit Image Storage
Stereometric Relationship Storage
Ophthalmic Tomography Image Storage
VL Whole Slide Microscopy Image Storage
VL MultiFrame Image Storage
Lensometry Measurements Storage
Autorefracton Measurements Storage
Keratometry Measurements Storage
Subjective Refraction Measurements Storage
Visual Acuity Measurements Storage
Spectacle Prescription Report Storage
Ophthalmic Axial Measurements Storage
Intraocular Lens Calculations Storage
Macular Grid Thickness And Volume Report Storage
Ophthalmic Visual Field Static Perimetry Measurements Storage
Basic Text SR Storage
Enhanced SR Storage
Comprehensive SR Storage
Procedure Log Storage
Mammography CAD SR Storage
Key Object Selection Document Storage
Chest CAD SR Storage
X-Ray Radiation Dose SR Storage
Colon CAD SR Storage
Implantation Plan SR Document Storage
Encapsulated PDF Storage
Encapsulated CDA Storage
Positron Emission Tomography Image Storage
Standalone PET Curve Storage

<b>Supported Referenced SOP Classes</b>
Enhanced PET Image Storage
Basic Structured Display Storage
RT Image Storage
RT Dose Storage
RT Structure Set Storage
RT Beams Treatment Record Storage
RT Plan Storage
RT Brachy Treatment Record Storage
RT Treatment Summary Record Storage

The Inobitec DICOM Server (PACS) Store Service AE will return the following Status Code values in N-ACTION Responses:

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Success	Success	0000	The SCP has successfully received the Storage Commitment Push Model N-ACTION Request and can process the commitment request for the indicated SOP Instances.

The Inobitec DICOM Server (PACS) Store Service AE will exhibit the following Behavior according to the Status Code value returned in an N-EVENT-REPORT Response from a destination Storage Commitment Push Model SCU:

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Success	Success	0000	The SCU has successfully received the Storage Commitment Push Model N-EVENT-REPORT Request. Success indication message is output to the Service Logs.
*	*	Any Other Code	This is treated as a permanent Failure. Error indication message is output to the Service Logs.

The next table report the dcm4che Storage Server behavior in case of communication failure:

<b>Exception</b>	<b>Behavior</b>
<p>Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. The STORAGE-SCP AE is waiting for the next N-ACTION Request on an open Association but the timer expires.</p>	<p>The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.</p>
<p>Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout).</p>	<p>The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.</p>
<p>Association A-ABORTed by the SCU or the network layers indicate communication loss (i.e. low-level TCP/IP socket closure).</p>	<p>The TCP/IP socket is closed. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.</p>

### 3.2.1.4.2 Activity – Handling Query and Retrieval Requests

#### 3.2.1.4.2.1 Description and Sequencing of Activities

The Inobitec DICOM Server (PACS) Store Service AE accepts Associations only if they have valid Presentation Contexts. If none of the requested Presentation Contexts are accepted

then the Association Request itself is rejected. It can be configured to only accept Associations from certain Application Entities.

If Store Service AE receives a query (C-FIND) request then the response(s) will be sent over the same Association used to send the C-FIND-Request.

If Store Service AE receives a retrieval (C-MOVE) request then the responses will be sent over the same Association used to send the C-MOVE-Request.

The Store Service AE will send the requested SOP Instances to the C-MOVE Destination over a newly created Association and report in the C-MOVE-Response any success or failure status of each attempt to send a CompositeSOP Instance.

The Store Service AE may reject Association attempts as shown in the table below. The Result, Source and Reason / Diag columns represent the values returned in the corresponding fields of an ASSOCIATE-RJ PDU (see PS 3.8, Section 9.3.4).

<b>Result</b>	<b>Source</b>	<b>Reason</b>	<b>Description</b>
1- rejected permanent	user	3 – calling AE title not recognized	The Association request contained an unrecognized Calling AE Title. An association request with the same parameters will NOT succeed at a later time unless configuration changes are made.

### 3.2.1.4.2.2 Accepted Presentation Contexts

<b>Abstract Syntax</b>		<b>Transfer Syntax</b>		<b>Role</b>	<b>Ext. Neg.</b>
<b>Name</b>	<b>UID</b>	<b>Name List</b>	<b>UID List</b>		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Q/R Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	Relational queries
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Patient Root Q/R Information Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	Relational queries
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Study Root Q/R Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	Relational queries
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Study Root Q/R Information Model –	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	Relational

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
MOVE		Explicit VR Little Endian	1.2.840.10008.1.2.1		queries
Patient/Study Only Q/R Information Model – FIND	1.2.840.10008.5.1.4.1 .2.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	Relational queries
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Patient/Study Only Q/R Information Model – MOVE	1.2.840.10008.5.1.4.1 .2.3.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	Relational queries
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

### 3.2.1.4.2.3 Specific Conformance for Query SOP Classes

The Store Service AE supports hierarchical and relational queries. There are no attributes always returned by default. Only those attributes requested in the query identifier are returned.

Query responses always return values from the Inobitec DICOM Server (PACS) database. Exported SOP Instances are always updated with the latest values kept in the database prior to export. Thus, a change in Patient demographic information will be contained in both the C-FIND Responses and any Composite SOP Instances exported to a C-MOVE Destination AE.

**Patient Root Information Model:** All required search keys on each of the four levels (Patient, Study, Series, and Image) are supported. However, the Patient ID (0010,0020) key must have at least a partial value if the Patient's Name (0010,0010) is not present in a Patient Level query.

**Study Root Information Model:** All the required search keys on each of the three levels (Study, Series, and Image) are supported. If no partial values are specified for Study attributes then either the Patient ID (0010,0020) key or the Patient's Name (0010,0010) must have at least a partial value specified.

**Patient/Study Only Information Model:** All the required search keys on the Patient and Study levels are supported. The Patient ID (0010,0020) key must be at least partially stated if the Patient's Name (0010,0010) is not present in a Patient Level query.

Patient Root C-FIND SCP Supported Elements:

Attribute Name	Tag	VR	Types of Matching
<i>SOP Common</i>			
Specific Character Set	0008,0005	CS	NONE
<i>Patient Level</i>			
Patient's Name	0010,0010	PN	S,*,U
Patient ID	0010,0020	LO	S,*,U

<b>Attribute Name</b>	<b>Tag</b>	<b>VR</b>	<b>Types of Matching</b>
Patient's Sex	0010,0040	CS	S,*,U
Patient's Birth Date	0010,0030	DA	S,U,R
<i>Study Level</i>			
Study Instance UID	0020,000D	UI	S,L
Study Date	0008,0020	DA	S,U,R
Study Time	0008,0030	TM	S,U,R
Study Description	0008,1030	LO	S,*,U
Accession Number	0008,0050	SH	S,*,U
Modalities In Study	0008,0061	CS	S,*,U
<i>Series Level</i>			
Series Instance UID	0020,000E	UI	S,L
Series Description	0008,103E	LO	S,*,U
Series Date	0008,0021	DA	S,U,R
Series Time	0008,0031	TM	S,U,R
Series Number	0020,0011	IS	S,*,U
Series Modality	0008,0060	CS	S,*,U
<i>Image Time</i>			
SOP Instance UID	0008,0018	UI	S,L
SOP Class UID	0008,0016	UI	S,L
Image Date	0008,0023	DA	S,U,R
Image Time	0008,0033	TM	S,U,R
Instance Number	0020,0013	IS	S,*,U

#### Study Root C-FIND SCP Supported Elements

<b>Attribute Name</b>	<b>Tag</b>	<b>VR</b>	<b>Types of Matching</b>
<i>SOP Common</i>			
Specific Character Set	0008,0005	CS	NONE
<i>Study Level</i>			
Patient's Name	0010,0010	PN	S,*,U
Patient ID	0010,0020	LO	S,*,U
Patient's Sex	0010,0040	CS	S,*,U
Patient's Birth Date	0010,0030	DA	S,U,R
Study Instance UID	0020,000D	UI	S,L

<b>Attribute Name</b>	<b>Tag</b>	<b>VR</b>	<b>Types of Matching</b>
Study Date	0008,0020	DA	S,U,R
Study Time	0008,0030	TM	S,U,R
Study Description	0008,1030	LO	S,*,U
Accession Number	0008,0050	SH	S,*,U
Modalities In Study	0008,0061	CS	S,*,U
<i>Series Level</i>			
Series Instance UID	0020,000E	UI	S,L
Series Description	0008,103E	LO	S,*,U
Series Date	0008,0021	DA	S,U,R
Series Time	0008,0031	TM	S,U,R
Series Number	0020,0011	IS	S,*,U
Series Modality	0008,0060	CS	S,*,U
<i>Image Time</i>			
SOP Instance UID	0008,0018	UI	S,L
SOP Class UID	0008,0016	UI	S,L
Image Date	0008,0023	DA	S,U,R
Image Time	0008,0033	TM	S,U,R
Instance Number	0020,0013	IS	S,*,U

**Types of Matching:**

The types of Matching supported by the C-FIND SCP. An "S" indicates the identifier attribute uses Single Value Matching, an "R" indicates Range Matching, an "\*" indicates wildcard matching, a "U" indicates Universal Matching, and an "L" indicates that UID lists are supported for matching. "NONE" indicates that no matching is supported, but that values for this Element are requested to be returned (i.e. universal matching).

**Inobitec DICOM Server (PACS) Store Service C-FIND Response Status:**

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Success	Success	0000	Matching is complete. No final identifier is supplied
Error	Processing Failure	c000	This status is returned due to internal errors such as a processing failure response on a query of the internal database. The appropriate Status will be sent in the C-FIND Response. Error indication message is output to the Service Log.

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Cancel	Matching terminated due to Cancel Request	fe00	The C-FIND SCU sent a Cancel Request. This has been acknowledged and the search for matches has been halted. Cancel indication message is output to the Service Log.
Pending	Matches are continuing and current match is supplied	ff01	Indicates that the search for further matches is continuing. This is returned when each successful match is returned and when further matches are forthcoming. Pending indication message is output to the Service Log.

Inobitec DICOM Server (PACS) Store Service C-MOVE Response status:

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Success	Success	0000	The remote Storage SCP has successfully stored the exported SOPInstance. The appropriate PENDING or SUCCESS Status will be sent in the C-MOVE Response. Success indication message is output to the Service Log.
Pending	Pending		Transmission in progress.
Error	Unable To Process	c000	This is treated as a permanent Failure. The appropriate Status will be sent in the C-MOVE Response. Error indication message is output to the Service Log.
Canceled	Sub Operations Terminated Due To Cancel Indication	fe00	Image transmission was canceled before all images sent.
*	*	Any other status code	This is treated as a permanent Failure. The appropriate Status will be sent in the C-MOVE Response. Error indication message is output to the Service Log.



Inobitec DICOM Server (PACS) Store Service C-MOVE Response status:

<b>Exception</b>	<b>Behavior</b>
<p>Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. The STORAGE-SCP AE is waiting for the next N-ACTION Request on an open Association but the timer expires.</p>	<p>The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.</p>
<p>Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout).</p>	<p>The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.</p>
<p>Association A-ABORTed by the SCU or the network layers indicate communication loss (i.e. low-level TCP/IP socket closure).</p>	<p>The TCP/IP socket is closed. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.</p>

### 3.2.2. MWL Service Application Entity Specification

#### 3.2.2.1 SOP Classes

Inobitec DICOM Server (PACS) MWL Service Application Entity provides Standard Conformance to the following SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	No	Yes
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	No	Yes
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	No	Yes

### 3.2.2.2 Association Establishment Policy

#### 3.2.2.2.1 General

Inobitec DICOM Server (PACS) MWL Service AE can both accept and propose Association Requests. The MWL Service AE will accept Association Requests for the Verification and Query/Retrieve Services. It will propose Association for Verification and Storage services.

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

Application Context Name	1.2.840.10008.3.1.1.1
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#### 3.2.2.2.2 Number of Associations

The Inobitec DICOM Server (PACS) MWL Service AE can support multiple simultaneous Association requested by peer AEs. The number of Association requests is unlimited and can not be configured.

Maximum number of simultaneous Association	Unlimited (Not configurable)
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#### 3.2.2.2.3 Asynchronous Nature

The Inobitec DICOM Server (PACS) MWL Service AE handle each association synchronously. The Inobitec DICOM Server (PACS) doesn't support asynchronous operations in an association.

Maximum number of outstanding asynchronous transactions	1 (Not configurable)
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### 3.2.2.3 Association Initiation Policy

The MWL Service AE does not initiate Associations.

### 3.2.2.4 Association Acceptance Policy

#### 3.2.2.4.1 Activity – External Peer AE requests MWL query

##### 3.2.2.4.1.1 Description and Sequencing of Activities

The MWL Service AE accepts Association only if they have valid Presentation Contexts. If

none of the requested Presentation Contexts are accepted then the Association Requests itself is rejected. It can be configured to only accept Association from certain Application Entities.

When Modality Worklist SCUs query the MWL Service AE the queries run against the MWL items in the local database.

When an association has been established the Sequencing of Real-World Activities is as described in Section 3.1.1, "Sequencing of Real-World Activities".

The Modality Worklist Server AE may reject Association attempts as shown in the table below. The Result, Source and Reason / Diag columns represent the values returned in the corresponding fields of an ASSOCIATE-RJ PDU (see PS 3.8, Section 9.3.4).

Result	Source	Reason	Description
1- rejected permanent	user	3 – calling AE title not recognized	The Association request contained an unrecognized Calling AE Title. An association request with the same parameters will NOT succeed at a later time unless configuration changes are made.

### 3.2.2.4.1.2 Accepted Presentation Contexts

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian			
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian			

If the Called AET is not corresponding to the actual MWL Service AET, only the Presentation Context for the Verification SOP Class will be accepted.

### 3.2.2.4.1.3 Specific Conformance for Verification SOP Class

Inobitec DICOM Server (PACS) provides standard conformance to the DICOM Verification Service Class as a SCP. The status code for the C-ECHO is described in the following table:

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The C-ECHO request is accepted

### 3.2.2.4.1.4 Specific Conformance for Modality Worklist SOP Class

Return attributes depend on the information provided by the connected HIS/RIS. There are no attributes always returned by default. Only those attributes requested in the query identifier are returned. Query responses always return values from the Modality Worklist Server database.

Modality Worklist C-FIND SCP Supported Elements:

Attribute Name	Tag	VR	Types of Matching
<i>SOP Common</i>			
Specific Character Set	0008,0005	CS	NONE
<i>MWL Level</i>			
Accession Number	0008,0050	SH	S,*,U
Admission ID	0038,0010	LO	S,*,U
Patient's Name	0010,0010	PN	S,*,U
Patient ID	0010,0020	LO	S,*,U
Patient's Sex	0010,0040	CS	S,*,U
Patient's Birth Date	0010,0030	DA	S,U,R
Scheduled station AE title	0040,0001	AE	S
Modality	0008,0060	CS	S
Scheduled Performing Physician's Name	0040,0006	PN	S,*
Scheduled Procedure Step Start Date	0040,0002	DA	S,R
Scheduled Procedure Step Start Time	0040,0003	TM	S,R
Scheduled Procedure Step Description	0040,0007	LO	S,*,U
All other			NONE

Types of Matching:

The types of Matching supported by the C-FIND SCP. An "S" indicates the identifier attribute uses Single Value Matching, an "R" indicates Range Matching, an "\*" indicates wildcard matching, a "U" indicates Universal Matching. "NONE" indicates that no matching is supported, but that values for this Element are requested to be returned.

Inobitec DICOM Server (PACS) MWL Server C-FIND Response Status:

Service Status	Further Meaning	Error Code	Behavior
Succes	Succes	0000	Matching is complete. No final identifier is supplied

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Behavior</b>
Error	Processing Failure	c000	This status is returned due to internal errors such as a processing failure response on a query of the internal database. The appropriate Status will be sent in the C-FIND Response. Error indication message is output to the Service Log.
Cancel	Matching terminated due to Cancel Request	fe00	The C-FIND SCU sent a Cancel Request. This has been acknowledged and the search for matches has been halted. Cancel indication message is output to the Service Log.
Pending	Matches are continuing and current match is supplied	ff01	Indicates that the search for further matches is continuing. This is returned when each successful match is returned and when further matches are forthcoming. Pending indication message is output to the Service Log.

MWL Service AE Communication Failure Reasons:

<b>Exception</b>	<b>Behavior</b>
Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. The STORAGESCP AE is waiting for the next N-ACTION Request on an open Association but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.
Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout).	The Association is aborted by issuing a DICOM A-ABORT. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.

Exception	Behavior
Association A-ABORTed by the SCU or the network layers indicate communication loss (i.e. low-level TCP/IP socket closure).	The TCP/IP socket is closed. If some Composite SOP Instances have been successfully received over the same Association via the Storage Service then they are maintained in the database. They are not automatically discarded because of a later Storage Commitment messaging failure. Any previously received Storage Commitment Push Model N-ACTION Requests will still be fully processed. Error indication message is output to the Service Logs. No message is posted to the User Interface.

### 3.2.2.4.1.5 Specific Conformance for Modality Performed Procedure Step SOP Class

Inobitec DICOM Server (PACS) MWL Service supports forwarding messages to two different destinations. It starts issuing messages to the configured destinations immediately after it accepts the corresponding messages from the acquisition modality. An acquisition modality informs the MWL Service that a particular Performed Procedure Step has started through the MPPS-N-CREATE Service.

An acquisition modality informs the MWL Service that a particular Performed Procedure Step is completed through the MPPS-N-SET service.

The Real World activity associated with the MPPS-N-CREATE and MPPS-N-SET commands, is triggered by the acquisition modality. The MWL Service MPPS information as an SCU to the Order Filler/System Scheduler and optionally to the report manager.

Inobitec DICOM Server (PACS) MWL Service AE provides standard conformance to the DICOM 3.0 Performed Procedure Step Service Class as an SCP for the following SOP Class:

Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3
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Inobitec DICOM Server (PACS) MWL Service AE receives MPPS-N-CREATE and MPPS-N-SET and acts as SCU to save it in database.

## 3.2 Physical Network Interfaces

### 3.2.1 Supported Communication Stacks

DICOM Upper Layer over TCP/IP is supported.

### 3.2.2 TCP/IP Stack

Depending on TCP/IP stack supported by operation system.

### 3.2.3 Physical Network Interfaces

Depending on physical medium supported by operation system.

## 3.2.4 Additional Protocols

### 3.2.4.1 WADO

Inobitec DICOM Server (PACS) provides standard conformance to the Web Access to DICOM Persistent Objects (WADO) as defined in PS3.18.

#### 3.2.4.1.1 WADO Description

The WADO standard specifies a Web-based service for accessing and presenting DICOM persistent objects, such as images and medical imaging reports. WADO is intended for the distribution of results and images to healthcare professionals. It provides a simple mechanism for accessing a DICOM persistent object from HTML pages through HTTP/HTTPS, using DICOM UIDs. Data can be retrieved either in a presentation-ready form as specified by the requestor, such as JPEG, or in a native DICOM format.

#### 3.2.4.1.2 WADO Interface Specification

The message semantics are defined by the DICOM Web Access to DICOM Persistent Objects (WADO), PS 3.18.

The WADO Retrieve transaction is performed by an Imaging Consumer which sends an HTTP Request-URI to the web server of Inobitec DICOM Server (PACS). The Imaging Consumer generates the HTTP Request-URI to retrieve a DICOM instance. The DICOM instance is specified with its Study Instance UID, Series Instance UID, and SOP Instance UID in the HTTP Request-URI. The Imaging Document Consumer must obtain the host information, such as web server location and script language, of the web server to perform this transaction. The Imaging Consumer can map the Retrieve AE Title of the SOP Instance to the web server host information based on its local configuration.

Inobitec DICOM Server (PACS) WADO interface supports a number of parameters in the WADO HTTP Request-URI, as described in the following table:

Parameter name	Parameter Description	Required	Supported
requestType	Type of the HTTP request performed. It must be "WADO"	Yes	Yes
contentType	MIME type of the response	No	Yes
studyUID	UID of the study	No	Yes
seriesUID	UID of the series	No	Yes
objectUID	UID of the image	Yes	Yes
charset	Charset of the response	No	No
anonymize	Anonymize image	No	No
addAnnotations	Annotation of the object	No	Yes
rows	Number of pixel rows	No	Yes
columns	Number of pixel columns	No	Yes
region	Region of image	No	No
windowCenter	Window center of image	No	No

Parameter name	Parameter Description	Required	Supported
windowWidth	Window width of image	No	No
frameNumber	Frame number of the single frame in a multi-frame image	No	No
imageQuality	Image quality factor	No	No
presentationUID	UID of the presentation object	No	No
presentationSeriesUID	UID of the series containing the presentation object	No	No
thumbnailID	ID of object, that used as thumbnail	No	Yes
bgcolorARGB	The hexadecimal representation of the background color	No	Yes

Inobitec DICOM Server (PACS) WADO interface accepts the following MIME types:

- application/dicom
- image/jpeg

If the MIME type is "application/dicom", Inobitec DICOM Server (PACS) will return the DICOM object as stored in the database, without transfix syntax conversion. No transfer syntax conversion is supported. Only the original transfer syntax (as stored in the Inobitec DICOM Server (PACS) database) is supported.

Inobitec DICOM Server (PACS) don't support the following MIME types:

- video/mpeg
- image/gif
- image/jp2
- text/xml
- text/rtf
- application/pdf
- HL7 CDA

### 3.2.4.1.3 Expected Actions

Upon receipt of the WADO HTTP Request, the Inobitec DICOM Server (PACS) parses the request and if there are no errors, constructs an HTTP Get Response with the requested DICOM instance content and returns the response as specified by the DICOM WADO standard, with HTTP response code 200 (OK).

The Inobitec DICOM Server (PACS) returns HTTP response code 404 (Not Found) if it can not locate requested DICOM SOP Instance or if there any errors in query parameters.

### 3.2.4.1.4 Example of WADO URI

The following is an example of an HTTP Request-URI for retrieving a persistent DICOM object using WADO:

`http://192.168.0.223:8000/wado?`

`requestType=WADO&contentType=application/dicom&objectUID=2.840.113704.7.1.1.6124.110785999.7`

The following is an example of an HTTP Request-URI for retrieving a persistent DICOM object as PNG image using WADO:



http://192.168.0.223:8000/wado?  
requestType=WADO&contentType=image/png&columns=awrfew&rows=779&objectUID=  
1.2.840.113704.7.1.1.6124.110785999.7&addAnnotations=true

### 3.2.5 Security Profiles

Inobitec DICOM Server (PACS) supports the TLS 1.0 security profile.

## 4 Configuration

### 4.1 AE Title/Presentation Address Mapping

The local AE Titles and TCP ports are configurable by manually editing the configuration file `srv_settings.ini`, which is placed in `/etc/pacs-srv` in Linux or `<INSTALL_DIR>/conf` in Windows.

Application Entity	Default AE Title	Default TCP/IP Port
Inobitec DICOM Server (PACS) Store Service	PACS_Inobitec	3000
Inobitec DICOM Server (PACS) Secure Store Service	PACS_Inobitec	3100
Inobitec DICOM Server (PACS) MWL Service	PACS_Inobitec	3001
Inobitec DICOM Server (PACS) Secure MWL Service	PACS_Inobitec	3101

All Inobitec DICOM Server (PACS) Application Entities use common AE Title. By default, secured services are disabled.

### 4.2 Remote AE Title

Remote AE Titles, TCP/IP Addresses and ports can be configured through web interface. In the default configuration, Association Requests with any Calling AET will be accepted.

### 4.3 Parameters

The following parameters can be configured:

- Local/Remote AE Title;
- Accept association from any AE Titles;
- Activate unsecure Store Service;
- Unsecure Store Service TCP/IP port;
- Activate unsecure MWL Service;
- Unsecure MWL Service TCP/IP port;
- Activate secure Store Service;
- Secure Service TCP/IP port;
- Activate secure MWL Service;
- Secure MWL Service port;

- Overwriting images in storage.

## 5 Media Interchange

Inobitec DICOM Server (PACS) does not support Media Storage.

## 6 Support for Extended Character Sets

The specific character set value is stored in the file DICOM Tag field (0008,0005).  
List of supported character sets in follow table:

Code	Description
ISO_IR 100	Latin alphabet #1
ISO_IR 101	Latin alphabet #2
ISO_IR 109	Latin alphabet #3
ISO_IR 110	Latin alphabet #4
UTF-8	Unicode
ISO_IR 192	Unicode
ISO_IR 127	Arabic
ISO_IR 144	Cyrillic
ISO_IR 126	Greek
ISO_IR 138	Hebrew
GB18030	Chinese
ISO 2022 IR 149	Korean
ISO 2022 IR 13	Japanese
ISO_IR 13	Japanese
ISO 2022 IR 87	Japanese

## 7 Security

### 7.1 Security Profiles

Inobitec DICOM Server (PACS) supports secure DICOM communication in conformance with the Basic TLS Secure Transport Connection Profile. At default configuration, the TLS option is deactivated.