

**RADIOLOGY INFORMATION SYSTEMS
PowerPACS® Image Importer**

DICOM 3.0 CONFORMANCE STATEMENT

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REVISION HISTORY

Rev.	Date	Reason for Change
1.0	January 3, 2005	Initial Version
1.1	September 23, 2005	Updated with more features.

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1. Introduction

1.1 Purpose

The purpose of this document is to provide the DICOM conformance statement for the PowerPACS Image Importer application.

1.2 Supporting Documents

This document makes references to or assumes familiarity with the information contained in the following documents:

Digital Imaging And Communications in Medicine (DICOM) Version 3

1.3 Glossary

ACL	Access Control List
DICOM	Digital Image and Communication for Medicine
SCP	Service Class Provider
SCU	Service Class User
ACR-NEMA	American College of Radiology and National Electrical Manufacturer's Association
AE	Application Entity
DIMSE	DICOM Message Service Element
SOP	Service-Object Pair
TCP/IP	Transport Control Protocol/Internet Protocol
UID	Unique Identifier

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2. Implementation Model

The PowerPACS Image Importer constitutes a DICOM image importer. It imports DICOM images from removable media, or through a DICOM network. DICOM Storage SOP instances received from an outside facility through either removable media or DICOM communication need to be conciliated with certain proper attributes provided by the system in order to be properly stored and handled consequently.

The PowerPACS Image Importer provides the following DICOM service classes.

- DICOM Modality Worklist SCU
- DICOM Query/Retrieve SCU
- DICOM Storage SCU/SCP (C-STORE SCU/SCP)
- DICOM Storage Commitment SCU
- DICOM Part 10 Media Storage Services

2.1 Application Data Flow Diagram

Figure 1 depicts the data flow diagram for the PowerPACS Image Importer application.

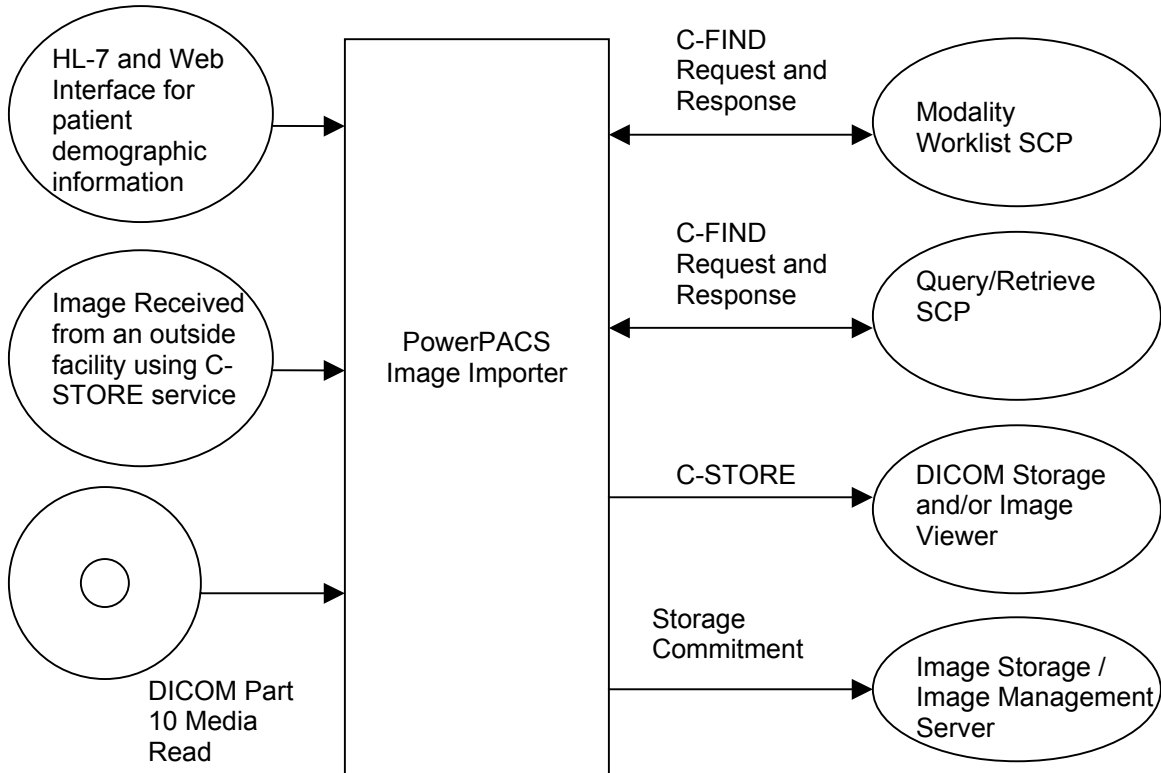


Figure 1 The Data Flow Diagram

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2.2 Functional Definition of the PowerPACS Image Importer Application Entity

When the image import request is issued, the application will read DICOM contents from the removable media with DICOM Part 10 M-READ service.

DICOM storage SOP instances may also be received from an outside facility through DICOM C-STORE service.

When the application has the information of imported DICOM Storage SOP Instances in hand, it will initiate a set of Modality Worklist requests and query for the patient demographic data and key attributes for the imported DICOM Storage SOP Class Instances from a Modality Worklist server.

The application may optionally query for the patient demographic information from existing DICOM Instances of a specific patient in a DICOM image archive server with the Query/Retrieve C-FIND Service in order to conciliate the information in the imported DICOM instances at the Patient Level, in case there is lack of the corresponding information in the Modality Worklist.

In addition, the application may optionally receive patient demographic data through HL-7 interface and/or Web interface. This function is beyond the scope of the document.

The application will conciliate the imported DICOM Storage SOP Class Instances with the key attributes obtained from the system, and save the original attributes in the Original Attribute Sequence.

After the imported DICOM instances are conciliated, they will be sent to desired remote archive server(s) with DICOM C-STORE service.

After all DICOM Storage Class Instances in a study are sent to the image archive server, the application will initiate a storage commitment request to the image archive server or the related image management server to indicate that the study is completely transferred to the image archive server. The application uses the received N-EVENT-REPORT to identify whether or not a study of images is successfully stored in the remote image archive server, and further determines whether or not the study can be automatically purged in a later housekeeping process.

The DICOM Verification (C-ECHO) SCP and SCU (although they are not depicted in the data flow diagram) are implemented in the application to allow the user to test DICOM network connectivity with other DICOM applications.

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3. Application Entity Specification

3.1 PowerPACS Image Importer AE Specification

The PowerPACS Image Importer Application Entity provides standard conformance to the DICOM 3.0 SOP classes listed in Table 1.

Table 1 Conformance to SOP Classes

SOP Class Name	SOP Class UID	Role
Verification SOP Class	1.2.840.10008.1.1	SCU/SCP
Modality Worklist Information Model – C-FIND SOP Class	1.2.840.10008.5.1.4.31	SCU
Storage SOP Classes	See Table 2 for detailed information	SCU/SCP
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	SCU
Query/Retrieve SOP Class – C-FIND	See Table 2 for detailed information	SCU

3.1.1 Association Establishment Policies

3.1.1.1 General

The DICOM application context is 1.2.840.3.1.1.1. The maximum PDU size is 8192 bytes.

3.1.1.2 Asynchronous Nature

The PowerPACS Image Importer does not support asynchronous operations and does not perform asynchronous window negotiation.

3.1.1.3 Implementation Identifying Information

PowerPACS Image Importer provides an implementation class UID, which is 1234567890.1998.310. PowerPACS Image Importer provides an implementation version name of RIS1998310.

3.1.2 Association Initiation Policy

PowerPACS Image Importer attempts to initiate one association for C-STORE service in response to each send command entered by the local user or triggered by the application logic flow. Within the association, multiple C-STORE requests may be invoked in order to send a series of DICOM Storage SOP Class Instances to a peer node.

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PowerPACS Image Importer attempts to initiate one association for Modality Worklist C-FIND service in response to each request from either the local user or the automatic application logic flow.

PowerPACS Image Importer may attempt to initiate an association for Query/Retrieve C-FIND service in case it needs to query for specific patient level information obtained from existing image data in the system.

PowerPACS Image Importer attempts to initiate one association for Storage Commitment N-ACTION request when a study of images is already completely sent to a remote DICOM image archive server.

3.1.2.1 Associated Real-World Activity – Query Modality Worklist Items from a Remote Node

The associated real-world activity is a C-FIND request invoked by the PowerPACS Image Importer. Once the association is successfully established, the PowerPACS Image Importer sends the C-FIND request along with Modality Worklist query criteria to the remote node. When the remote node returns the matched data items with its response, the PowerPACS Image Importer will use these data items to conciliate the imported DICOM Storage SOP Class instances.

3.1.2.2 Associated Real-World Activity – Store an Image in a Destination Node

The associated real-world activity is a C-STORE request invoked by the PowerPACS Image Importer. Once the association is successfully established, the imported image, which is already conciliated, is transferred from the PowerPACS Image Importer to a destination DICOM node that is assigned to store the image.

3.1.2.3 Associated Real-World Activity – Send Storage Commitment Request to Image Management Server

The associated real-world activity is an N-ACTION request invoked by the PowerPACS Image Importer. Once the association is successfully established between the PowerPACS Image Importer and the remote image management server, the PowerPACS Image Importer initiates the N-ACTION request along with a list of SOP instance UIDs. The PowerPACS Image Importer may receive the N-EVENT-REPORT from the remote image management server within the same association or in a separated association.

3.1.2.4 Associated Real-World Activity – Receive an Image from a Remote Node

The associated real-world activity is an incoming C-STORE request received by the PowerPACS Image Importer. When the association is successfully established, the PowerPACS Image Importer functions as a

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C-STORE SCP and receives the incoming DICOM instances. This operation triggers the consequent Image Import operation.

3.1.2.5 Associated Real-World Activity – Query Patient Demographic Data from Image Management Server

The associated real-world activity is one or multiple C-FIND requests invoked by the PowerPACS Image Importer. When the association is successfully established between the PowerPACS Image Importer and the remote image management server, the PowerPACS Image Importer initiates a C-FIND request at patient level. The information objects received from the response will be used for the conciliation process at the patient level.

3.1.2.6 Proposed Presentation Contexts

The PowerPACS Image Importer supports the presentation context shown in Table 2.

Table 2 Presentation Context Supported by the PowerPACS Image Importer

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/ SCU	None
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/ SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline	1.2.840.10008.1.2.4.50		
		JPEG Lossless, Process14	1.2.840.10008.1.2.4.57		
		JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2.4.70		
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/ SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline	1.2.840.10008.1.2.4.50		
		JPEG Lossless, Process14	1.2.840.10008.1.2.4.57		
		JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2.4.70		

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Ultrasound Multi-frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.3	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction RLE Lossless	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.5	SCP/SCU	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction RLE Lossless	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.5	SCP/SCU	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction RLE Lossless	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.5	SCP/SCU	None

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Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/SCU	None
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/SCU	None
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/SCU	None
Multi-frame Tree Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/SCU	None
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/SCU	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/SCU	None

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X-Ray Angiographic Image Storage	1.2.840.10008.5.1. 4.1.1.12.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1. 4.1.1.20	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Digital X-Ray Image Storage	1.2.840.10008.5.1. 4.1.1.1.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Digital Mammography X-Ray Image Storage	1.2.840.10008.5.1. 4.1.1.1.2	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Digital Intra-oral X-Ray Image Storage	1.2.840.10008.5.1. 4.1.1.1.3	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None

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X-Ray RF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline	1.2.840.10008.1.2.4.50		
		JPEG Lossless, Process14	1.2.840.10008.1.2.4.57		
		JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2.4.70		
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
VL Endoscope Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline	1.2.840.10008.1.2.4.50		
		JPEG Lossless, Process14	1.2.840.10008.1.2.4.57		
		JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2.4.70		
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline	1.2.840.10008.1.2.4.50		
		JPEG Lossless, Process14	1.2.840.10008.1.2.4.57		
		JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2.4.70		
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline	1.2.840.10008.1.2.4.50		
		JPEG Lossless, Process14	1.2.840.10008.1.2.4.57		
		JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2.4.70		
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP/SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline	1.2.840.10008.1.2.4.50		
		JPEG Lossless, Process14	1.2.840.10008.1.2.4.57		
		JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2.4.70		

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VL Photographic Image Storage	1.2.840.10008.5.1. 4.1.1.77.1.4	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Video Photographic Image Storage	1.2.840.10008.5.1. 4.1.1.77.1.4.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1. 4.1.1.77.1.5.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1. 4.1.1.77.1.5.2	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Basic Text SR	1.2.840.10008.5.1. 4.1.1.88.11	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/ SCU	None
Enhanced SR	1.2.840.10008.5.1. 4.1.1.88.22	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/ SCU	None
Comprehensive SR	1.2.840.10008.5.1. 4.1.1.88.33	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/ SCU	None

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Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/ SCU	None
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/ SCU	None
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/ SCU	None
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP/ SCU	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Implicit VR Little Endian Explicit VR Little Endian JPEG Baseline JPEG Lossless, Process14 JPEG Lossless, 1 st -order prediction	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.57 1.2.840.10008.1.2.4.70	SCP/ SCU	None
Patient Root Query/Retrieve - FIND	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Storage Commitment (Push Model)	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

3.1.2.7 SOP Specific Conformance for the Modality Worklist SOP Class

The PowerPACS Image Importer encodes the keys listed in Table 3 in the query criteria.

The PowerPACS Image Importer may invoke a Modality Worklist query in either automatic or manual mode. The user can specify query criteria in the manual query mode.

Table 3 Query Key Attributes in Modality Worklist Query

Attribute Name	Tag	Matching Type
Patient Name	0010,0010	Universal, Wildcard, Exact
Patient Date of Birth	0010,0030	Universal, Wildcard, Exact
Other Patient IDs	0010,1000	Universal, Exact
Patient Sex	0008,0040	Universal, Exact

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Modality	0008,0060	Universal, Exact
Scheduled Procedure Start Date	0040,0002	Universal, Range, Exact
Station AE Title	0040,0001	Universal, Exact
Patient ID	0010,0020	Universal, Exact (used in manual query)
Accession Number	0008,0050	Universal, Exact (used in manual query)

Patient ID (0010,0020) and Accession Number (0008,0050) may be adopted as keys in manual query criteria if the user knows any of these keys in the local system, which are already assigned to the study to be imported.

3.1.2.8 SOP Specific Conformance for the Query/Retrieve C-FIND SOP Class

In the Query/Retrieve C-FIND request, the PowerPACS Image Importer supports the query criteria keys listed in Table 4.

Table 4 Query Keys in Patient Level Query Criteria

Attribute Name	Tag	Matching Type
Patient Name	0010,0010	Universal, Wildcard, Exact
Patient Date of Birth	0010,0030	Universal, Wildcard, Exact
Patient Sex	0008,0040	Universal, Exact
Other Patient IDs	0010,1000	Universal, Exact
Patient ID	0010,0020	Universal, Exact (used in manual query)

Patient ID (0010,0020) may be a manual query criteria key if the user already knows the Patient ID of the patient assigned in the local system.

3.1.2.9 SOP Specific Conformance for the Storage SOP Class

Listed in Table 5 are the key attributes that will be replaced by the data provided by the system in the conciliation process.

Table 5 Key Attributes Conciliated in the Import operation

Attribute Name	Tag	Notes
Operator's Name	0008,1070	Replaced with the user name
Patient Name	0010,0010	
Patient ID	0010,0020	
Patient Date of Birth	0010,0030	
Patient Sex	0010,0040	
Institution Name	0008,0080	The application provides a GUI for manual input
Storage Media File-Set UID	0088,0140	Obtained from the Media Storage SOP Class UID (0002,0003) in removable

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		media
Storage Media File-Set ID	0088,0130	
Accession Number	0008,0050	
Other Patient IDs	0010,1000	

The imported DICOM Storage SOP Class Instance is conciliated with key attributes obtained from the system. The original attributes that are substituted in this process will be saved in a private Original Attribute Sequence. (A future product will use standard Original Attribute Sequence whenever this sequence is formally defined.) The private Original Attribute Sequence is defined in Table 6.

Table 6 Private Original Attributes Sequence

Attribute Name	Tag	VR	VM	Type	Attribute Description
Private Creator Data Element	0021,00F0	LO	1	1C	Has to be present if (0021,F001) is present. Has the following enumeration value. "PRIVATE ORIGINAL ATTRIBUTES"
Private Original Attribute Sequence	0021,F001	SQ	1	1C	One or more sequence items may be present. This sequence has to be included if both of the following conditions are true; (1) the standard Original Attribute Sequence is not defined yet; (2) one or more key attributes are replaced in the conciliation operation with the data obtained from the system.
>Replacement Date and Time	0021,F005	DT	1	1	The date and time when the replacement occurs.
>Replacement Originator Name	0021,F010	LO	1	3	The name of organization that performs the replacement.
>Operators' Name	0008,1070	PN	1-n	1	The names of operators
>Operator Identification Sequence	0008,1072	SQ	1	3	Identification of the operator(s) performing the replacement. It may contain zero to multiple items.
>>Include "Person Identification Macro" Table 10-1 (DICOM Part 3)					
>Replacement Reason	0021,F012	LO	1	3	The reason of the replacement

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>Patient Name	0010,0010	PN	1	2C	The original Patient Name. Has to be present if the Patient Name is replaced. The same condition follows in the rest of original attributes. This attribute may be blank if the original attribute does not have data. The same rule is applied in the rest of original attributes.
>Patient ID	0010,0020	LO	1	2C	The original Patient ID
>Patient Date of Birth	0010,0030	DA	1	2C	The original Patient Date of Birth
>Patient Sex	0010,0040	CS	1	2C	The original Patient Sex
>Other Patient IDs	0010,1000	LO	1-n	2C	The original Other Patient IDs
>Accession Number	0008,0050	SH	1	2C	The original Accession Number
>Private Creator Data Element	0021,00F0	LO	1	1C	Must be present if any attribute of group 0021 is present. Has the following enumeration value. "PRIVATE ORIGINAL ATTRIBUTES"
>Original Operators' Name	0021,F070	PN	1-n	2C	The original Operators' Name

Multiple sequence items may be present in the private Original Attribute Sequence. It is because the imported images may be exported to another facility, yielding another import process that adds an additional sequence item in the private Original Attribute Sequence.

3.1.2.10 SOP Specific Conformance for the Storage Commitment Push Model SOP Class

The PowerPACS Image Importer is able to receive the N-EVENT-REPORT request within the same association where the N-ACTION service is performed, or in a separated association established with an association request from the peer node.

3.1.2.11 SOP Specific Conformance for the Removable Media Storage

The PowerPACS Image Importer conforms to DICOM 3.0 Part 10 in reading the image data from the removable media storage. In addition to strictly following IHE PDI Profile, PowerPACS Image Importer can also read and process compressed images.

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4. Communication Profiles

4.1 TCP/IP

The PowerPACS Image Importer uses the TCP/IP stream socket from Microsoft WinSocket.

4.2 Physical Media Support

The PowerPACS Image Importer provides no restriction on the physical network. The PowerPACS Image Importer can operate using TCP/IP over Ethernet or other commercial network.

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5. Support of Extended Character Sets

The PowerPACS Image Importer presently provides no support for extended character sets.