

CoActiv, LLC CoActiv Medical Business Solutions

EXAM-PACS™ Conformance Statement

Revision History

Date	Author	Notes
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0. Introduction

0.1. *Intended Audience*

This conformance statement is intended for existing or potential users of EXAM-PACS™, system administrators of institutions using EXAM-PACS, as well as developers of systems wishing to communicate with EXAM-PACS using the DICOM protocol.

It is assumed that the reader of this Conformance Statement is familiar with the DICOM standard.

0.2. *References*

Digital Imaging and Communications in Medicine (DICOM) standard by the National Electrical Manufacturers Association (NEMA).

0.3. *Definitions*

AE	DICOM Application Entity
AET	Application Entity Title
DICOM	Digital Imaging and Communications in Medicine
FSC	File Set Creator
IOD	DICOM Information Object Definition
PDU	Protocol Data Unit
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair
TCP/IP	Transmission Control Protocol/Internet Protocol
UID	Unique Identifier

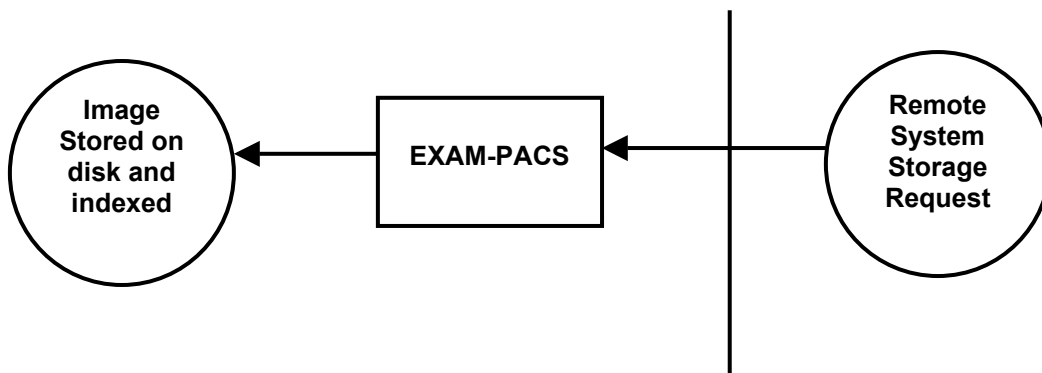
0.4. *Important Note*

The fact that equipment is compatible according to this Conformance Statement, does not in itself guarantee interoperability. Though compatibility with the DICOM standard has been thoroughly tested, interoperability conflicts may arise when trying to use EXAM-PACS with other devices. Interoperability does not lie within the scope of the DICOM standard.

1. Implementation Model

EXAM-PACS is capable of receiving SOP instances from imaging modalities, storing them, and making them available to the associated Exam-Viewer.

1.1. *Application Data Flow Diagram*



1.2. Invocation

EXAM-PACS runs as a background service and invocation is controlled through the Windows “Services” applet.

1.3. Functional Definitions of AE’s

When EXAM-PACS is invoked, it waits for another application to connect at the presentation address configured for its Application Entity Title. When another application connects, EXAM-PACS expects it to be a DICOM application. EXAM-PACS will accept associations with Presentation Contexts for SOP Classes of the Storage Service Class. It will receive images on these Presentation Contexts, write them to files and store indexing information into its database.

1.4. Sequencing of Real-World Activities

Not Applicable.

2. AE Specifications

Only one instance of EXAM-PACS may be active at any time

2.1. EXAM-PACS Specification

EXAM-PACS provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU/SCP.

SOP Class Name	SOP Class UID
Verification SOP class	1.2.840.10008.1.1
All image storage SOP classes	1.2.840.10008.5.1.4.1.1.*

2.1.1. Association Establishment Policies

2.1.1.1. General

EXAM-PACS listens for incoming associations whenever it is started and responds as described elsewhere in this document.

The maximum PDU size which EXAM-PACS will use is configurable, with a default of 64K.

2.1.1.2. Number of Associations

There are no inherent limitations on the total number of simultaneous associations which the Application Entity represented by EXAM-PACS can maintain.

2.1.1.3. Asynchronous Nature

EXAM-PACS will not perform asynchronous operations window negotiation.

2.1.1.4. Implementation Identifying Information

EXAM-PACS will provide an Implementation Class UID of “1.2.826.0.1.3680043.2.859.1.1.1.0.3.227”
EXAM-PACS will provide an implementation version name of “COACTIV-EP-227”.

The last 3 digit components of each of these identifying strings may change in subsequent versions of the program, to reflect the current version number.

2.1.2. Association Initiation Policy

EXAM-PACS never attempts to initiate a new association .

2.1.2.1. Proposed Presentation Contexts

EXAM-PACS does not initiate associations and does not therefore propose presentation contexts.

2.1.3. Association Acceptance Policy

When EXAM-PACS accepts an association, it will receive any images transmitted on that association and store the images on disk and index them to the database. EXAM-PACS places no limitations on who may connect to it, nor on the number of simultaneous connects it will support.

2.1.3.1. Associated Real-World Activity

The associated Real-World Activity associated with the C-STORE operation is the storage of the image on the disk of the system upon which EXAM-PACS is running and the writing of indexing information to the database. EXAM-PACS will issue a failure status if it is unable to store the image.

2.1.3.2. Presentation Context Table

Any of the Presentation Contexts shown in Table 1 are acceptable for EXAM-PACS to receive images.

Table 1 : Acceptable Presentation Contexts for EXAM-PACS

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	See Table 2		SCP	None
Any Storage Syntax	1.2.840.10008.5.1.4.1.1.*	See Table 2		SCP	None

2.1.3.3. SOP Specific Conformance

2.1.3.3.1. SOP Specific Conformance to Verification SOP Class

EXAM-PACS provides standard conformance to the DICOM Verification Service Class.

2.1.3.3.2. SOP Specific Conformance to Storage SOP Classes

EXAM-PACS conforms to the SOPs of the Storage Service Class at Level 2 (Full). No elements are discarded or coerced by EXAM-PACS. In the event of a successful C-STORE operation, the Image has successfully been written to disk and indexed.

EXAM-PACS does not check, nor modify any elements of the image files it transfers, though it may compress or decompress the pixel data according to the negotiated transfer syntax. The content of the images stored, therefore depends entirely on the contents of the received file.

2.1.3.4. Presentation Context Acceptance Criterion

EXAM-PACS will always accept any presentation contexts: provided that the abstract syntax appears in Table 1; and that there is at least one transfer syntax from Table 2. No restrictions are placed on the combination of presentation contexts accepted, any number (up to the DICOM maximum of 127) of presentation contexts may be offered and accepted, and all may be used in the same association.

2.1.3.5. Transfer Syntax Selection Policy

For each presentation context, EXAM-PACS will select from the offered transfer syntaxes the one which appears highest in Table 2.

Table 2 : Transfer Syntax Selection

Name	UID
DICOM JPEG Lossless, Non-Hierarchical	1.2.840.10008.1.2.4.57
DICOM JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70
DICOM JPEG Extended	1.2.840.10008.1.2.4.51
DICOM JPEG Baseline	1.2.840.10008.1.2.4.50
DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1
DICOM Implicit VR Little Endian	1.2.840.10008.1.2
DICOM Implicit VR Big Endian	1.2.840.10008.1.2.2

EXAM-PACS considers each presentation context in isolation according to this policy, and previously accepted presentation contexts have no bearing on how subsequent presentation contexts are handled. This list may be over-ridden on an installation-specific basis if required as part of configuration, as described in section 5.

3. Communication Profiles

3.1. Supported Communications Stacks (Part 8)

EXAM-PACS provides DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3.8.

3.2. TCP/IP Stack

EXAM-PACS inherits its TCP/IP stack from the Windows system upon which it executes.

3.3. Physical Media Support

EXAM-PACS is indifferent to the physical medium over which TCP/IP executes; it inherits this from the Windows system upon which it executes.

4. Extensions/Specializations/Privatizations

Not Applicable.

5. Configuration

EXAM-PACS obtains its configuration information from the registry, which may be configured by the installer if required.

6. Support Of Extended Character Sets

EXAM-PACS does not, itself, generate or use extended character sets, but any present in any DICOM instances received are preserved.

7. Codes And Controlled Terminology

No codes or controlled terminology are used by EXAM-PACS itself, though such codes present in any DICOM instances received are preserved.

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CoActiv, LLC, 900 Ethan Allen Highway, Ridgefield, Connecticut 06877-2826