



**Reliable Medical Imaging**

a division of  
Reliable Technologies, Inc.

**PAX.net**

## DICOM CONFORMANCE STATEMENT

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<b><u>1.INTRODUCTION</u></b> .....	4
<u>1.1 PAX.NET AND ITS CONFORMANCE TO DICOM</u> .....	4
<u>1.2 PAX.NET FEATURES</u> .....	4
<b><u>2. IMPLEMENTATION MODEL</u></b> .....	5
<u>2.1 APPLICATION DATA FLOW DIAGRAM</u> .....	5
<u>2.2 FUNCTIONAL DEFINITIONS OF APPLICATION ENTITIES</u> .....	6
<b><u>3.AE PECIFICATIONS</u></b> .....	6
<u>3.1 THE PAX.NET PACS SYSTEM APPLICATION ENTITY</u> .....	6
<u>3.1.1 Association Establishment Policies</u> .....	8
<u>3.1.1.1 General</u> .....	9
<u>3.1.1.2 Number of Associations</u> .....	9
<u>3.1.1.3 Implementation Identifying Information</u> .....	9
<u>3.1.2 Association Initiation by Real-World-Activity</u> .....	9
<u>3.1.2.1 C-Store resulting from an incoming C-Store request</u> .....	9
<u>3.1.2.1.1 Associated Real-World Activity</u> .....	9
<u>3.1.2.1.2 Proposed Presentation Contexts for PAX.net PACS system AE</u> .....	9
<u>3.1.2.2 Associated Real-World Activity</u> .....	9
<u>3.1.2.2.2 Proposed Presentation Contexts for PAX.net AE Activity 2</u> .....	10
<u>Table 3.1.2.2.3</u> .....	10
<u>3.1.2.3 C-Find resulting from C-Find request Activity 3</u> .....	14
<u>3.1.2.3.1 Associated Real-World Activity</u> .....	14
<u>3.1.2.3.2 Proposed Presentation Contexts for PAX.net AE, Activity 3</u> .....	14
<u>3.1.2.4 C-Move resulting from an incoming C-Move request</u> .....	15
<u>3.1.2.4.1 Associated Real-World Activity</u> .....	15
<u>3.1.2.4.2 Proposed Presentation Contexts for PAX.net AE, Activity 4</u> .....	15
<u>3.1.3 Association Acceptance Policy</u> .....	15
<u>3.1.3.1 Verification Request, Real-World Activity 1</u> .....	15
<u>3.1.3.1.1 Associated Real-World Activity</u> .....	15
<u>3.1.3.1.2 Proposed Presentation Contexts for PAX.net AE, Activity 1</u> .....	16
<u>3.1.3.2 Store Request, Real-World Activity 2</u> .....	16
<u>3.1.3.2.1 Associated Real-World Activity</u> .....	16
<u>3.1.3.2.2 Proposed Presentation Contexts for PAX.net Activity 2</u> .....	16
<u>3.1.3.2.2.1 SOP Specific Conformance for Storage SOP Classes</u> .....	20
<u>3.1.3.3 C-Find Request, Real-World Activity 3</u> .....	21
<u>3.1.3.3.1 Associated Real-World Activity</u> .....	21
<u>3.1.3.3.2 Proposed Presentation Contexts for PAX.net, Activity 3</u> .....	21
<u>3.1.3.4 C-Move Request, Real-World Activity 4</u> .....	22
<u>3.1.3.4.1 Associated Real-World Activity</u> .....	22
<u>3.1.3.4.2 Proposed Presentation Contexts for PAX.net, Activity 4</u> .....	23
<u>Table 3.1.3.4.3</u> .....	23
<b><u>4. COMMUNICATION PROFILES</u></b> .....	23

<u>4.1 SUPPORTED COMMUNICATION STACKS</u> .....	23
<u>4.2 TCP/IP STACK</u> .....	24
<u>4.3 PHYSICAL MEDIA SUPPORT</u> .....	24
<u>6. CONFIGURATION</u> .....	24
<u>6.1 CONFIGURABLE PARAMETERS</u> .....	24

## **1. Introduction**

### **1.1 PAX.net and its conformance to DICOM**

This document describes the Reliable Technologies, Inc. PAX.net PACS system and its conformance to the DICOM 3.0 specification.

- Storage Services - The PAX.net PACS system receives DICOM images from DICOM devices. The images can be stored locally. When images are stored locally, the image is stored and a database record is created describing the stored image.
- Query and Retrieve Services – The PAX.net PACS system receives DICOM Query and Retrieve request from DICOM devices. The request can look at the local PAX.net PACS system database(s) for matches to the Query or Retrieve request and return an integrated response to the requesting DICOM device.

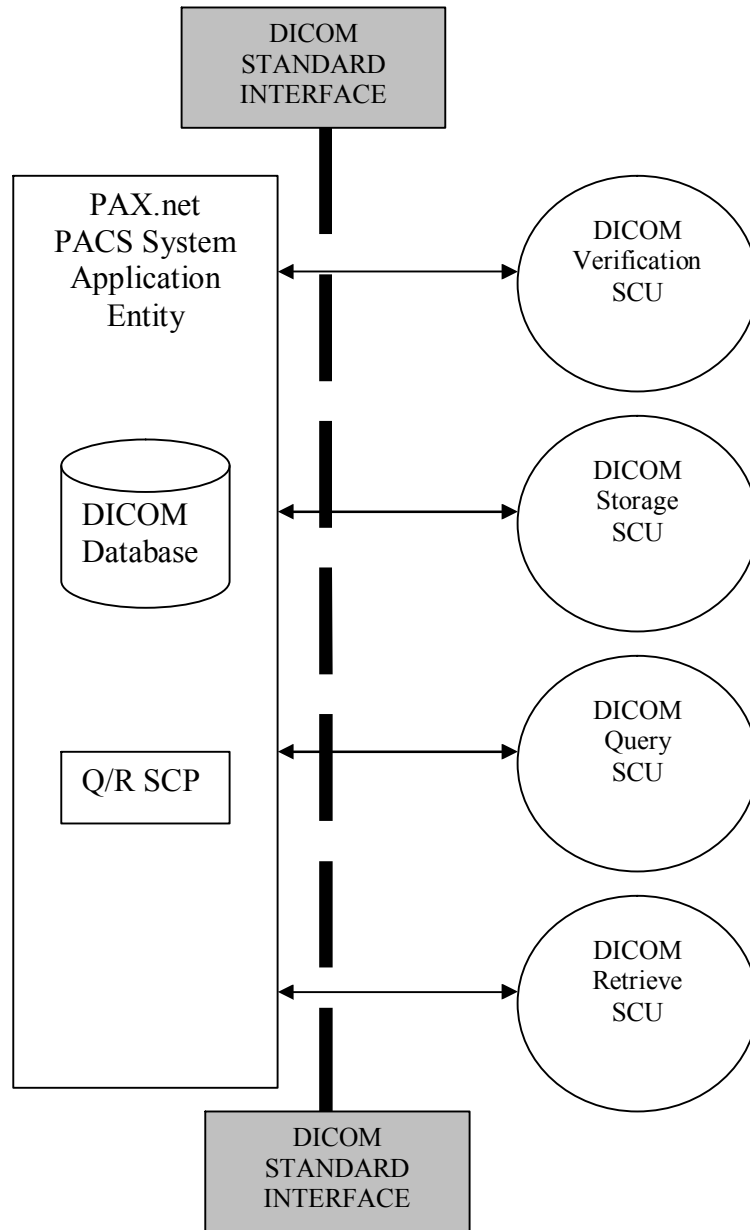
### **1.2 PAX.net Features**

The PAX.net PACS system (PAX.net) is an open system architecture utilizing the Microsoft Windows Server operating system and the Microsoft .Net platform that provides transport, storage, tracking, and retrieving of digital medical images across a storage system network.

Move/Route Mapping provides a facility for moving medical images from a local PAX.net DICOM Database to one or more DICOM devices on a pre-configured route. For example, an image, or set of images, can be moved from a local image cache to a view station. Another example would be moving images from a deep-level archive on a remote PAX.net Server to a local PAX.net Server image cache and view station. The key concept is that the image is being moved from a PAX.net DICOM database and routed to any DICOM 3.0-compatible device that is configured as a local route destination.

## 2. Implementation Model

### 2.1 Application Data Flow Diagram



## 2.2 Functional Definitions of Application Entities

The PAX.net PACS system supports Verification Services as a Service Class Provider (SCP). The DICOM Service Class User may request a C-ECHO operation to verify communications with the SCP.

The PAX.net PACS system Storage Service Class Provider (SCP) receives requests from a DICOM Storage Service Class User (SCU) to store an image. The SCP stores the image and the attributes to a local database and/or forwards the image to an PAX.net PACS system Storage Service Class User so the image can be transmitted to other DICOM device(s)

The PAX.net PACS system Storage Service Class User (SCU) receives request from PAX.net to store an image to a DICOM Storage Service Class Provider (SCP). The request is initiated from a C-Store or C-Move request to PAX.net. The SCU stores an image to the SCP.

The PAX.net PACS system Query Service Class Provider (SCP) receives requests from a DICOM Query Service Class User (SCU) to search for images. The SCP accepts the Query request from the SCU and searches the PAX.net DICOM database. The Query response is returned to the SCU.

The PAX.net PACS system Retrieve Service Class Provider (SCP) receives requests from a DICOM Retrieve Service Class User (SCU) to retrieve images. The SCP accepts the Retrieve request from the SCU and searches the PAX.net DICOM database. The Retrieve response is returned to the SCU.

## 3. AE Specifications

### 3.1 The PAX.net PACS system Application Entity

The PAX.net PACS system Application Entity provides Standard Conformance to the following DICOM v3.0 SOP Class as a SCP:

Verification SOP Class Name	SOP CLASS UID
Verification	1.2.840.10008.1.1

The PAX.net PACS system Application Entity provides Standard Conformance to the following DICOM v3.0 SOP Classes as a SCU/SCP:

<b>Storage SOP Class Name</b>	<b>SOP CLASS UID</b>
Stored Print Storage	1.2.840.10008.5.1.1.27
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
Ultrasound Multi-Frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1

Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9
12-Lead ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.1
General ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.2
Ambulatory ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.3
Hemodynamic Waveform	1.2.840.10008.5.1.4.1.1.9.2.1
Cardiac Electrophysiology Waveform	1.2.840.10008.5.1.4.1.1.9.3.1
Basic Voice Audio Waveform	1.2.840.10008.5.1.4.1.1.9.4.1
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2
X-Ray Angiographic Bi-plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1
VL Microscopic Image	1.2.840.10008.5.1.4.1.1.77.1.2

VL Slide	1.2.840.10008.5.1.4.1.1.77.1.3
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7

<b>Query and Retrieve SOP Class Name</b>	<b>SOP CLASS UID</b>
Patient Root Query	1.2.840.10008.5.1.4.1.2.1.1
Patient Root Move	1.2.840.10008.5.1.4.1.2.1.2
Study Root Query	1.2.840.10008.5.1.4.1.2.2.1
Study Root Move	1.2.840.10008.5.1.4.1.2.2.2

### **3.1.1 Association Establishment Policies**

The PAX.net PACS system Application Entity initiates an association:

In response to a C-Store request – the image is stored in the attached storage.

In response to a C-Find request – search is executed in the attached storage.

In response to a C-Move request – an association is established to Store the images requested in the C-Move to one or more additional DICOM device(s).

In response to a C-Move request – the image is moved from the attached storage to the external Store SCP.

#### **3.1.1.1 General**

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

Maximum PDU size offered	Unlimited
Maximum PDU size accepted	Unlimited

### 3.1.1.2 Number of Associations

Not configurable.

### 3.1.1.3 Implementation Identifying Information

Implementation UID	TBD
Implementation Version Name	PAX.net

## 3.1.2 Association Initiation by Real-World-Activity

### 3.1.2.1 C-Store resulting from an incoming C-Store request (Real-World Activity 1)

#### 3.1.2.1.1 Associated Real-World Activity

The Real-World Activity of a C-Store request to the PAX.net PACS system Application Entity will cause PAX.net to initiate a C-Store request to one or more configured DICOM devices(s).

#### 3.1.2.1.2 Proposed Presentation Contexts for PAX.net PACS AE, Real-World Activity 1

See Table 3.1.2.2.3

### 3.1.2.2 C-Store resulting from an incoming C-Move request (Real-World Activity 2)

#### 3.1.2.2.1 Associated Real-World Activity

The Real-World Activity of a C-Move request to the PAX.net PACS system Application Entity will cause PAX.net to initiate a C-Store request to one or more configured DICOM devices(s) for the requested images in the C-Move.

#### 3.1.2.2.2 Proposed Presentation Contexts for PAX.net PACS system AE, Real-World Activity 2

See Table 3.1.2.2.3

**Table 3.1.2.2.3**

<b>Presentation Context for PAX.net PACS system AE, Real-World Activities 1 &amp; 2</b>					
Abstract Syntax		Transfer Syntax		Role	Extended
Name	UID	Name	UID	Negotiation	
Stored Print Storage	1.2.840.10008.5.1.1.27	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Digital X-Ray Image	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR	1.2.840.10008.1.2	SCU	NONE

Storage (Processing)		Little Endian			
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE

CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Ultrasound Multi-Frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
12-Lead ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
General ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.2	Implicit VR	1.2.840.10008.1.2	SCU	NONE

		Little Endian			
Ambulatory ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Hemodynamic Waveform	1.2.840.10008.5.1.4.1.1.9.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Cardiac Electrophysiology Waveform	1.2.840.10008.5.1.4.1.1.9.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Basic Voice Audio Waveform	1.2.840.10008.5.1.4.1.1.9.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
X-Ray Angiographic Image	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR	1.2.840.10008.1.2	SCU	NONE

X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
X-Ray Angiographic Bi-plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little	1.2.840.10008.1.2	SCU	NONE

		Endian			
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
VL Microscopic Image	1.2.840.10008.5.1.4.1.1.77.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
VL Slide	1.2.840.10008.5.1.4.1.1.77.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE

RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Stored Print Storage	1.2.840.10008.5.1.1.27	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE

### 3.1.2.3 C-Find resulting from an incoming C-Find request (Real-World Activity 3)

#### 3.1.2.3.1 Associated Real-World Activity

The Real-World Activity of a C-Find request to the PAX.net PACS system Application Entity will cause PAX.net to initiate a C-Find request to one or more configured DICOM devices(s).

#### 3.1.2.3.2 Proposed Presentation Contexts for PAX.net PACS AE, Real-World Activity 3

<b>Presentation Context for PAX.net PACS system AE, Real-World Activities 3</b>
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Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Patient Root Query	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Study Root Query	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE

### 3.1.2.4 C-Move resulting from an incoming C-Move request

#### 3.1.2.4.1 Associated Real-World Activity

The Real-World Activity of an incoming C-Move request to the PAX.net PACS system Application Entity will cause PAX.net to initiate a C-Move request to one or more configured DICOM devices(s).

#### 3.1.2.4.2 Proposed Presentation Contexts for PAX.net PACS system AE, Real-World Activity 4

Presentation Context for PAX.net PACS system AE, Real-World Activity 4					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Patient Root Retrieve	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE
Study Root Retrieve	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	NONE

### 3.1.3 Association Acceptance Policy

#### 3.1.3.1 Verification Request, Real-World Activity 1

##### 3.1.3.1.1 Associated Real-World Activity

The PAX.net PACS system Application Entity will accept associations for C-Echo and provide standard conformance to the DICOM Verification Service Class.

##### 3.1.3.1.2 Proposed Presentation Contexts for PAX.net PACS system AE, Real-World Activity 1

<b>Presentation Context for PAX.net PACS system AE, Real-World Activity 1</b>					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Verification	1.2.840.10008.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE

### 3.1.3.2 Store Request, Real-World Activity 2

#### 3.1.3.2.1 Associated Real-World Activity

The PAX.net PACS system Application Entity will accept associations for C-Store and provide standard conformance to the DICOM Storage Service Class. The C-STORE request is received from a DICOM device, the image is stored to media, the database is updated and a status of success is returned to DICOM device.

#### 3.1.3.2.2 Proposed Presentation Contexts for PAX.net PACS system, Real-World Activity 2

<b>Presentation Context for PAX.net PACS system AE, Real-World Activity 2</b>					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Stored Print Storage	1.2.840.10008.5.1.1.27	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Digital X-Ray Image Storage	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little	1.2.840.10008.1.2	SCP	NONE

(Presentation)		Endian			
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Ultrasound Multi-Frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR	1.2.840.10008.1.2	SCP	NONE
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little	1.2.840.10008.1.2	SCP	NONE

		Endian			
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
12-Lead ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
General ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Ambulatory ECG Waveform	1.2.840.10008.5.1.4.1.1.9.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Hemodynamic Waveform	1.2.840.10008.5.1.4.1.1.9.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Cardiac Electrophysiology Waveform	1.2.840.10008.5.1.4.1.1.9.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Basic Voice Audio Waveform	1.2.840.10008.5.1.4.1.1.9.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE

X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
X-Ray Angiographic Bi-plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
VL Endoscopic 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	NONE
VL Microscopic Image	1.2.840.10008.5.1.4.1.1.77.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
VL Slide	1.2.840.10008.5.1.4.1.1.77.1.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE

Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	Implicit VR Little	1.2.840.10008.1.2	SCP	NONE
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Stored Print Storage	1.2.840.10008.5.1.1.27	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE

### 3.1.3.2.2.1 SOP Specific Conformance for Storage SOP Classes

The PAX.net PACS system Application Entity provides Level 2 DICOM conformance to the Storage SOP Classes. No coercion is performed on the original data elements

received. If the C-Find attribute differs from the database, duplicate series, studies, and images will be coerced.

If an error is encountered while trying to store the image or update the database, an error status message will be returned to the DICOM device. See Table 3.1.3.4.3 for error message detail.

### 3.1.3.3 C-Find Request, Real-World Activity 3

#### 3.1.3.3.1 Associated Real-World Activity

The PAX.net PACS system Application Entity will accept associations for C-Find and provide standard conformance to the DICOM Query/Retrieve Service Class.

#### 3.1.3.3.2 Proposed Presentation Contexts for PAX.net PACS system, Real-World Activity 3

<b>Presentation Context for PAX.net PACS system AE, Real-World Activity 3</b>					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Patient Root Query	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Study Root Query	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE

#### 3.1.3.3.2.1 SOP Specific Conformance for Query SOP Classes

The PAX.net PACS system Application Entity supports hierarchical queries only. If an error is encountered while trying to process the query, an error status message will be returned to the DICOM device. See Table 3.1.3.4.3 for error message detail.

The following attributes are supported for the C-Find operation:

<b>Patient Level Attribute Name</b>	Tag	Supported Matching Attribute	Supported Return Attribute
Patient's Name	0010,0010	Yes	Yes
Patient ID	0010,0020	Yes	Yes
Patient's Birth Date	0010,0030	Yes	Yes
Patient's Sex	0010,0040	Yes	Yes
Referenced Patient Sequence	0008,1120	Yes	Yes
Referenced SOP Class UID	0008,1150	Yes	Yes
Referenced SOP Instance UID	0008,1155	Yes	Yes

Patient's Birth Time	0010,0032	Yes	Yes
Other Patient Ids	0010,1000	Yes	Yes
Other Patient Names	0010,1001	Yes	Yes
Ethnic Group	0010,2160	Yes	Yes
Patient Comments	0010,4000	Yes	Yes
Number of Patient Related Studies	0020,1200	No	Yes
Number of Patient Related Series	0020,1202	No	Yes
Number of Patient Related Instances	0020,1204	No	Yes

<b>Study Level Attribute Name</b>	<b>Tag</b>	<b>Supported Matching Attribute</b>	<b>Supported Return Attribute</b>
Study Instance UID	0020,000D	Yes	Yes
Study Date	0008,0020	Yes	Yes
Study Time	0008,0030	Yes	Yes
Referring Physician's Name	0008,0090	Yes	Yes
Name of physician reading study	0008,1060	Yes	Yes
Study ID	0020,0010	Yes	Yes
Accession Number	0008,0050	Yes	Yes
Modalities in Study	0008,0061	Yes	Yes
Study Description	0008,1030	Yes	Yes
Procedure Code Sequence	0008,1032	Yes	Yes
Admitting Diagnoses Description	0008,1080	Yes	Yes
Referenced Study Sequence	0008,1110	Yes	Yes
Referenced SOP Class UID	0008,1150	Yes	Yes
Referenced SOP Instance UID	0008,1155	Yes	Yes
Patient's Age	0010,1010	Yes	Yes
Patient's Size	0010,1020	Yes	Yes
Patient's Weight	0010,1030	Yes	Yes
Occupation	0010,2180	Yes	Yes
Additional Patient History	0010,21B0	Yes	Yes
Other Study Numbers	0020,1070	Yes	Yes
Number of Study Related Series	0020,1206	No	Yes
Number of Study Related Instances	0020,1208	No	Yes

<b>Series Level Attribute Name</b>	<b>Tag</b>	<b>Supported Matching Attribute</b>	<b>Supported Return Attribute</b>
Modality	0008,0060	Yes	Yes
Series Instance UID	0020,000E	Yes	Yes
Series Number	0020,0011	Yes	Yes

<b>Image Level Attribute Name</b>	<b>Tag</b>	<b>Supported Matching Attribute</b>	<b>Supported Return Attribute</b>
Image Number	0020,0013	Yes	Yes
Overlay Number	0020,0022	Yes	Yes
Curve Number	0020,0024	Yes	Yes
LUT Number	0020,0026	Yes	Yes
SOP Class UID	0008,0016	Yes	Yes
SOP Instance UID	0008,0018	Yes	Yes

### 3.1.3.4 C-Move Request, Real-World Activity 4

#### 3.1.3.4.1 Associated Real-World Activity

The PAX.net PACS system Application Entity will accept associations for C-Move and provide standard conformance to the DICOM Query/Retrieve Service Class.

#### 3.1.3.4.2 Proposed Presentation Contexts for PAX.net PACS system, Real-World Activity 4

Presentation Context for PAX.net PACS system AE, Real-World Activity 4					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Patient Root Retrieve	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE
Study Root Retrieve	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	NONE

#### 3.1.3.4.2.1 SOP Specific Conformance for Retrieve SOP Classes

If an error is encountered while trying to process the retrieve, an error status message will be returned to the DICOM device. See Table 3.1.3.4.3 for error message detail.

Table 3.1.3.4.3

Error Status Table		
Error	Description	Meaning
0106H	Invalid attribute	Indicates that there is an invalid attribute
0110H	Processing Error	Check Reliable Technologies, Inc.event log for specific details
0120H	Missing attribute	Indicates that a required attribute is missing
A700	Out of resources	Indicates that there are not enough resources to store the image or update the database.
C800	Unsupported SOP	Indicates that the SOP Class in the DICOM Association request is not supported.
C801	Unknown Command	The command was other than a C-Echo, C-Store, C-Find, C-Move, or C-Cancel.
C802	No images stored	Indicates that no images were Stored in relation to a C-Move request.
C803	Invalid Context ID	Indicates a Context ID is utilized that was not negotiated during the Association.
A900	Data Set does not match SOP Class	Indicates that the Data Set does not encode an instance of the SOP Class specified.
CXXX	Logic Error	See conformance statement of DICOM device that created this error.

## 4. Communication Profiles

### 4.1 Supported Communication Stacks

PAX.net PACS system provides DICOM v3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

### 4.2 TCP/IP Stack

PAX.net PACS system utilizes the TCP/IP stack from the Microsoft Windows platform.

### 4.3 Physical Media Support

PAX.net PACS system is independent of the physical medium over which TCP/IP executes. Any device listed in the Microsoft Windows Hardware compatibility list may be used.

## 6. Configuration

The PAX.net PACS system utilizes XML configuration files for the setting of all configurable settings.

## **6.1 Configurable parameters**

The following items are configurable for each SCP Application Entity:

- IP Address
- Port Numbers
- Application Entity Titles
- SOP classes authorized – standard and private

For more detailed information on the DICOM configuration parameters available for PAX.net, refer to the PAX.net PACS system Installation and Operations Guide.