



DICOM Conformance Statement



1.0	INTRODUCTION	4
2.0	IMPLEMENTATION MODEL	4
2.1 2.2 2 2 2 2 2.3 2 2 2.3 2 2 2 2 2 2	APPLICATION DATA FLOW DIAGRAM FUNCTIONAL DEFINITION OF APPLICATION ENTITIES 2.1 Server (SCP) is executed when the machine is powered on. It waits for an association request fro emote SCU client and initiates associations in the following ways 2.2 Acquire (SCU) is executed at the discretion of the user. 2.3 Exa Film Acquire (SCU) is executed at the discretion of the user. 2.4 Exa Professional Workstation (SCU) is executed at the discretion of the user. SEQUENCING OF REAL-WORLD ACTIVITY. 3.1 Server 3.2 Acquire. 3.3 Professional Workstation	4 m a 5 5 6 6 6
3.0	APPLICATION ENTITY SPECIFICATIONS	7
3.1 3.2 3.3 3.4	VERIFICATION STORAGE STORAGE COMMITMENT QUERY / RETRIEVE	7 7 8 8
4.0	APPLICATION ENTITY SPECIFICATIONS FOR EXA ACQUIRE	9
4.1 4.2	VERIFICATIONSTORAGE	9 9
5.0	APPLICATION ENTITY SPECIFICATIONS FOR EXA FILM ACQUIRE	9
5.1 5.2	VERIFICATIONSTORAGE	9 9
6.0	APPLICATION ENTITY SPECIFICATIONS FOR EXA PROFESSIONAL WORKSTATION	9
6.1 6.2 6.3 6.4	STORAGE Query/Retrieve Printing Media Storage	9 10 10 10
7.0	DICOM CONFORMANCE FOR RIS GATEWAY INTERFACE	10
7.1 7.2 7.3 7.4 7.5 7.6	DETACHED PATIENT MANAGEMENT DETACHED STUDY MANAGEMENT. DETACHED STUDY COMPONENT MANAGEMENT. DETACHED RESULTS MANAGEMENT DETACHED INTERPRETATION MANAGEMENT. STRUCTURED REPORTING	11 12 13 13 14 14
8.0	ASSOCIATION ESTABLISHMENT POLICIES	15
81 8.2 8.3 8.4 8.5 8.6 8.7	GENERAL NUMBER OF ASSOCIATIONS ASYNCHRONOUS NATURE IMPLEMENTATION IDENTIFYING INFORMATION ASSOCIATION INITIATION/ACCEPTANCE POLICY ASSOCIATED REAL WORLD ACTIVITY PROPOSED PRESENTATION CONTEXT TABLE EXA ACCEPTS THE FOLLOWING TRANSFER SYNTAXES	15 15 15 15 15 15 15
9.0	COMMUNICATION PROFILES	16



12.0	SUPPORT OF EXTENDED CHARACTER SETS	16
11.1	AE TITLE / PRESENTATION ADDRESS MAPPING	16
11.0	CONFIGURATION	16
10.1	NONE.	16
10.0	EXTENSIONS/SPECIALIZATIONS/PRIVATIZATIONS	16
9.4	POINT TO POINT STACK	16
9.3	ТСР/ІР Ѕтаск	16
9.2	OSI STACK	16
9.1	SUPPORTED COMMUNICATION STACKS	16

1.0 INTRODUCTION

This document provides DICOM conformance information for the Exa Telemedicine PACS produced by Konica Minolta Healthcare Americas, Inc. and assumes that the reader is familiar with the components and terminology intrinsic to DICOM 3.0 protocol. The Service Classes and Information Objects supported by Exa are described here in full detail, in accordance with Part 2 of the DICOM standard. Exa uses DICOM services to import, transfer and store DICOM images for analysis and processing.

2.0 IMPLEMENTATION MODEL

Exa exchanges data between the Service Class User (SCU) and Service Class Provider (SCP) over any TCP/IP network. Exa Server (SCP) can communicate with three SCU components - Exa Professional Workstation, Exa Film Acquire and Exa Acquire.

2.1 Application Data Flow Diagram

Application data flow revolves around one SCP and three SCU components in Exa. The data flow diagram for a fully implemented Exa PACS is shown in Figure A.1. A functional Exa system must include the Server (SCP) component and at least one SCU component.

(Professional Workstation, Film Acquire or Acquire). Interactions between components and outside sources are described. Only DICOM functioning is listed inside each Exa component process. The Exa Professional Workstation is implemented with two separate processes – ePatient and Diagnostic Viewer. Professional Workstation can initiate and receive query/retrieve associations, while Server can only receive them.



Figure A.1 Application Data Flow Diagram

- 2.2 Functional Definition of Application Entities
 - 2.2.1 Server (SCP) is executed when the machine is powered on. It waits for an association request from a remote SCU client and initiates associations in the following ways.
 - 2.2.1.1 **QUERY**: Waits for a C-FIND-RQ from a remote AE. The Server will send a C-FIND-RSP message with the matching information (or none if the query is unsuccessful). The remote AE can cancel the query by sending a C-CANCEL-FIND-RQ message to Server.
 - 2.2.1.2 **RETRIEVE**: Waits for a C-MOVE-RQ from remote AE. The Server responds to the requesting AE using either C-MOVE-RSP (respective to the request) and sends the requested information on a separate association.
 - 2.2.1.3 **VERIFICATION**: Waits for an association from remote AE to perform echo tests. If C-ECHO-RQ is received, a C-ECHO-RSP is send back with the status message "success."
 - 2.2.1.4 **STORAGE**: A DICOM storage commitment is initiated if Server receives a C-STORE-RQ from Exa Acquire, Film Acquire, or attached DICOM compliant modality. If the request is accepted, a patient study and series is stored in a PostgreSQL and a C-STORE-RSP is sent to the perspective AE.
 - 2.2.2 Acquire (SCU) is executed at the discretion of the user.
 - 2.2.2.1 **STORAGE**: Acquire initiates association with Server and sends a storage request (C-STORE-RQ) to save a DICOM study and series. If the association is made and request is accepted, the data is transferred to the Server for storage.
 - 2.2.3 Exa Film Acquire (SCU) is executed at the discretion of the user.
 - 2.2.3.1 **STORAGE**: Film Acquire initiates association with Server and sends a storage request (C-STORE-RQ) to save a DICOM study and series. If the association is made, and request is accepted, the data is transferred to the Server for storage.
 - 2.2.4 Exa Professional Workstation (SCU) is executed at the discretion of the user.
 - 2.2.4.1 **QUERY**: Workstation initiates an association with a remote AE to query images on a remote SCP or SCU. An initial Patient-Level query is sent with a C-FIND-RQ operation to obtain a patient list based on a set of search criteria. Afterward, the Workstation can initiate a subsequent Study-Level C-FIND-RQ query for that particular patient. After performing a Study-Level query, the Workstation can initiate a Series-Level query for that particular patient and study (issuing another C-FIND-RQ). Professional Workstation can cancel a query by sending a C-CANCEL-FIND-RQ message to the remote AE.
 - 2.2.4.2 **PRINT**: Initiates association with DICOM compliant print devices. If association is accepted, Professional Workstation sends a DICOM Print request (C-PRINT-RQ) and respective data to the device.

- 2.2.4.3 **VERIFICATION**: Initiates an association with a remote AE for performing an Echo request. When a successful association is made, it sends a C-E CHO-RQ on the same association. If a remote AE makes a successful association with Workstation and a C-ECHO-RQ is receive d, the Workstation sends a C-ECHO-RSP to the remote AE along with the message "success."
- 2.2.4.4 **RETRIEVE**: Initiates an association with two remote AEs (Source and Destination). After a successful Query to the Source AE node, a C-MOVE-RQ is sent to the source AE, supplying the destination AE Title. The Source AE then replies with a C-MOVE-RSP, transferring the requested information from the Source AE to the Destination AE.
- 2.2.4.5 **MEDIA STORAGE**: Can initiate extraction of DICOM information from a DICOM DIR structure on any local or removable media that is connected to the Workstation.
- 2.3 Sequencing of Real-World Activity

There are several real-world activities that initiate DICOM associations with Server (SCP) or other AEs. The number of DICOM associations held between Exa Server and remote AEs is only limited by the system's resources. Real world activities are listed below.

2.3.1 Server

No real-world actions are triggered directly from Exa Server or Exa Server's interface. Real world actions are initiated only through Professional Workstation, Acquire, Film Acquire, a DICOM compliant modality, or another remote.

2.3.2 Acquire

STORAGE: An association is initiated with Server (SCP) when the user presses "Save" from the Acquire main interface. A DICOM stud y is then created and sent to the SCP, which stores the DICOM in a database.

FILM ACQUIRE STORAGE: An association is initiated with Server (SCP) when the user presses "Save" from the Film Acquire main interface. A DICOM study is then created and sent to the SCP, which stores the DICOM in a database.

2.3.3 Professional Workstation

Viewer initiates associations from several real-world activities.

- 2.3.3.1 QUERY: When the user clicks "Update Patients" in the Workstation's DICOM Console screen, a DICOM association is created with the respective SCP or SCU. An association is also created when the user presses "Update Studies" or "Update Series" for each respective list in the DICOM Console Screen.
- 2.3.3.2 **RETRIEVE**: When the user has loaded a Source and Destination AE node in the DICOM Console screen, a move operation can be conducted by pressing the "Move" button. The user must perform a "Query" operation with the Source AE prior to this. If the request is successful, the selected series, study or patient is copied and transferred from the source AE to the destination AE.

- 2.3.3.3 **PRINT:** An association is made with any DICOM compliant printer when the user selects "DICOM Print" from the Print menu option in the Diagnostic Viewer screen.
- 2.3.3.4 ECHO: If the user clicks on "Echo Src" (meaning Echo Source) or "Echo Dest" (meaning Echo Destination) from the DICOM Console screen, a "Verification" association is made with the respective AE node. The user can also initiate an association from selecting "Echo" from the "Print" menu option in the Diagnostic Viewer screen. The user must enter an Application Entity and press the button labeled "Echo" to make the association.
- 2.3.3.5 **MEDIA STORAGE**: Professional Workstation can extract information from a DICOMDIR structure by clicking on the "Import DICOM DIR" button located on the standard toolbar in the Diagnostic Viewer Screen. This can also be initiated by selecting "Import DICOMDIR" from the "File" menu option. The user is then prompted to enter a drive/storage location or "browse" local and removable directories for the desired structure.

3.0 APPLICATION ENTITY SPECIFICATIONS

Exa Server supports the following Application Entities in the SCP role.

3.1 Verification

SOP Class Name	SOP Class UID
Verificatio n	1.2.840.10008.1.1

3.2 Storage

SOP Class Name	SOP Class UID
CR Im age Storage	1.2.840.10008.5.1.4.1.1.1
Digi X ray Pres Image Storage	1.2.840.10008.5.1.4.1.1.1.1
Digi X ray Proc Image Storage	1.2.840.10008.5.1.4.1.1.1.1.1
Digi Mammo Pres Image Storage	1.2.840.10008.5.1.4.1.1.1.2
Digi Mammo Proc Image Storage	1.2.840.10008.5.1.4.1.1.1.2.1
Digi Intra Oral Pres Image Storage	1.2.840.10008.5.1.4.1.1.1.3
Digi Intra Oral Proc Image Storage	1.2.840.10008.5.1.4.1.1.1.3.1
CT Im age Storage	1.2.840.10008.5.1.4.1.1.2
US M ulti Image Storage (Ret)	1.2.840.10008.5.1.4.1.1.3
MR Im age Storage	1.2.840.10008.5.1.4.1.1.4
NM Im age Storage(Ret)	1.2.840.10008.5.1.4.1.1.5
US I mage Storage (Ret)	1.2.840.10008.5.1.4.1.1.6
NM Im age Storage	1.2.840.10008.5.1.4.1.1.20
US Im age Storage	1.2.840.10008.5.1.4.1.1.6.1
US M ulti Image Storage	1.2.840.10008.5.1.4.1.1.3.1
SC Im age Storage	1.2.840.10008.5.1.4.1.1.7
RT Im age Storage	1.2.840.10008.5.1.4.1.1.481.1
RT Do se 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 Treatm ent 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
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1
X-R ay Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2
X-Ray Angiographic Bi-Plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3

StandabneOverlay Storage	1.2.840.10008.5.1.4.1.1.8
Standabne Curve Storage	1.2.840.10008.5.1.4.1.1.9
Waveform WV Mod ality Storage	1.2.840.10008.5.1.4.1.1.9.1
Waveform ECG Mod ality Storage	1.2.840.10008.5.1.4.1.1.9.1.1
Waveform AU Mo dality Storage	1.2.840.10008.5.1.4.1.1.9.1.2
Waveform Hemodynamic Storage	1.2.840.10008.5.1.4.1.1.9.2.1
Standalone Modality LUT St orage	1.2.840.10008.5.1.4.1.1.10
StandabneV OI L UT Storage	1.2.840.10008.5.1.4.1.1.11
Gray Softcopy Pres State Storage	1.2.840.10008.5.1.4.1.1.11.1
VLE ndoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1
VL Microsc opic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2
VL Sli de Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3
V L Photographic I mage Storage	1.2.840.10008.5.1.4.1.1.77.1.4
SR Basic Text	1.2.840.10008.5.1.4.1.1.88.11
SR Enhanced	1.2.840.10008.5.1.4.1.1.88.22
SR Com prehensive	1.2.840.10008.5.1.4.1.1.88.33
PET Im age Storage	1.2.840.10008.5.1.4.1.1.128
PET C urve Storage	1.2.840.10008.5.1.4.1.1.129

3.3 Storage Commitment

SOP Class Na me	SOP Class UID
Storage Commitment Push Model Class	1.2.840.10008.1.20.1
Storage Commitment Push Model Instance	1.2.840.10008.1.20.1.1
Storage Commitment Pull Model Class	1.2.840.10008.1.20.2
Storage Commitment Pull Model In stance	1.2.840.10008.1.20.2.1

3.4 Query / Retrieve

SOP Class Na me	SOP Class UID
Patient R oot QR Find	1.2.840.10008.5.1.4.1.2.1.1
Patient R oot QR M ove	1.2.840.10008.5.1.4.1.2.1.2
Patient R oot QR Get	1.2.840.10008.5.1.4.1.2.1.3
StudyRootQR Find	1.2.840.10008.5.1.4.1.2.2.1
Study Root QR Move	1.2.840.10008.5.1.4.1.2.2.2
Study Root QR Get	1.2.840.10008.5.1.4.1.2.2.3
Patient/StudyRootQR Find	1.2.840.10008.5.1.4.1.2.3.1

Patient/Study Root QR Move	1.2.840.10008.5.1.4.1.2.3.2
Patient/Study Root QR Get	1.2.840.10008.5.1.4.1.2.3.3



4.0 APPLICATION ENTITY SPECIFICATIONS FOR EXA ACQUIRE

Exa Acquire supports the following Application Entities in the SCU role.

4.1 Verification

SOP Class Name	SOP Class UID
Verificatio n	1.2.840.10008.1.1

4.2 Storage

SOP Class Name	SOP Class UID
SC Im age Storage	1.2.840.10008.5.1.4.1.1.7

5.0 APPLICATION ENTITY SPECIFICATIONS FOR EXA FILM ACQUIRE

Exa Film Acquire supports the following Application Entities in the SCU role.

5.1 Verification

SOP Class Name	SOP Class UID
Verificatio n	1.2.840.10008.1.1

5.2 Storage

SOP Class Name	SOP Class UID
SC Im age Storage	1.2.840.10008.5.1.4.1.1.7

6.0 APPLICATION ENTITY SPECIFICATIONS FOR EXA PROFESSIONAL WORKSTATION

Exa Professional Workstation supports the following Application Entities in the SCU role.

6.1 Storage

SOP Class Name	SOP Class UID
Verificatio n	1.2.840.10008.1.1

6.2 Query/Retrieve

SOP Class Na me	SOP Class UID
Patient R oot QR Find	1.2.840.10008.5.1.4.1.2.1.1
Patient R oot QR M ove	1.2.840.10008.5.1.4.1.2.1.2
PatientRootQR Get	1.2.840.10008.5.1.4.1.2.1.3
Study Root QR Find	1.2.840.10008.5.1.4.1.2.2.1
Study Root QR Move	1.2.840.10008.5.1.4.1.2.2.2
Study Root QR Get	1.2.840.10008.5.1.4.1.2.2.3
Patient/StudyRootQR Find	1.2.840.10008.5.1.4.1.2.3.1
Patient/Study Root QR Move	1.2.840.10008.5.1.4.1.2.3.2
Patient/Study Root QR Get	1.2.840.10008.5.1.4.1.2.3.3

6.3 Printing

SOP Class Na me	SOP Class UID
Basic Film Session	1.2.840.10008.5.1.1.1
Basic Fil m Bo x	1.2.840.10008.5.1.1.2
Basic Gray Image Box	1.2.840.10008.5.1.1.4
Basic Color Im age Box	1.2.840.10008.5.1.1.4.1
Basic Anno tation Box	1.2.840.10008.5.1.1.15
Reference Image Box	1.2.840.10008.5.1.1.4.2
Print Job	1.2.840.10008.5.1.1.14
Printer	1.2.840.10008.5.1.1.16
Printer Instance	1.2.840.10008.5.1.1.17
VOIL UT B ox	1.2.840.10008.5.1.1.22
Presentation LUT	1.2.840.10008.5.1.1.23
Image Overlay Box	1.2.840.10008.5.1.1.24
Print QueueInstance	1.2.840.10008.5.1.1.25
Print Queue Management	1.2.840.10008.5.1.1.26
Stored Print Storage	1.2.840.10008.5.1.1.27
Hardcopy Gray Image Storage	1.2.840.10008.5.1.1.29
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30
Basic Gray Print Management Meta	1.2.840.10008.5.1.1.9
Basic Co lor Print Management Meta	1.2.840.10008.5.1.1.18
Reference Gray Print Management Meta	1.2.840.10008.5.1.1.9.1
Reference Color Print Management Meta	1.2.840.10008.5.1.1.18.1

6.4 Media Storage

SOP Class Name	SOP Class UID
Media Storage Dir Storage	1.2.840.10008.1.3.10

7.0 DICOM CONFORMANCE FOR RIS GATEWAY INTERFACE

Exa DICOM RIS Gateway supports the following Application Entities in the SCU and SCP role. All N-E VENT and SCU/SCP roles are supported for all service classes per the DICOM 2000 standard.

7.1 Detached Patient Management

Attribute Name	Tag
Specific CharacterSet	(0008,0005)
PatientName	(0010,0010)
Patient ID	(0010,0020)
Issuer of Patient ID	(0010,0021)
Other Patient Ids	(0010,1000)
Other Patient Names	(0010,1001)
Patient Telephone Numbers	(0010,2154)
Patient Ad dress	(0010,1040)
Patient Bir th Date	(0010,0030)
Patient Sex	(0010,0040)
Patient W eight	(0010,1030)
Ethnic G roup	(0010,2160)
Patient Relig ious Preference	(0010,21F0)
Patient Data Confidentiality Constraint Desc.	(0040,3001)
Patient State	(0038,0500)
Pregnancy Status	(0010,21C0)
Medical A lerts	(0010,2000)
Contrast Allergies	(0010,2110)
Special Needs	(0038,0050)
Referenced Study Sequence	(0008,1110)
>Referenced SOP Class UI D	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)
Referenced Visit Sequence	(0008,1125)
>Referenced SOP Class UI D	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)
Reference Patient Alias Sequence	(0038,0004)
>Referenced SOP Class UI D	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)

7.2 Detached Study Management

Attribute Name	Tag
Specific CharacterSet	(0008,0005)
Study ID	(0020,0010)
Study ID Issuer	(0032,0012)
AccessionNumber	(0008.0050)
Study Instance UID	(0020,000D)
Study Status ID	(0032,000A)
Study Priority ID	(0032,000C)
Scheduled Study Start Date	(0032,1000)
Scheduled Study Start Time	(0032,1001)
Scheduled Study Stop Date	(0032,1010)
Scheduled Study Stop Time	(0032,1011)
Scheduled Study Lo cation	(0032,1020)
Scheduled Study Lo cation Application Entity Title	(0032,1021)
RequestingService	(0032,1033)
Requesting Physician	(0032,1032)
Requested Procedure Description	(0032,1060)
Requested Procedure Code Sequence	(0032,1064)
>Code V alue	(0008,0100)
>Coding Scheme Designator	(0008,0102)
>Code Meaning	(0008,0104)
Study A rrival D ate	(0032,1040)
Study A rrival Ti me	(0032,1041)
Study Date	(0008,0020)
Study Tim e	(0008,0030)
Study Completed Date	(0032,1050)
Study Completed Tim e	(0032,1051)
Study Verified Date	(0032,0032)
Study Verified Time	(0032,0033)
Study Read Date	(0032,0034)
Study Read Ti me	(0032,0035)
	1 1
Name of Physician(s) Reading Study	(0008,1060)

Referenced Patient Sequence	(0008,1120)
>Referenced SOP Class UI D	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)
Referenced Visit Sequence	(0008,1125)
>Referenced SOP Class UI D	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)
Referenced Results Sequence	(0008,1100)
>Referenced SOP Class UI D	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)
Referenced Study Component Sequence	(0008,1111)
>Referenced SOP Class UID	(0008,1150)
>Referenced SOP Instance UID	(0008,1155)

exa

7.3 Detached Study Component Management

Attribute Name	Tag
Specific CharacterSet	(0008, 0005)
Referenced Study Sequence	(0008,1110)
>Referenced SOP Class UID	(0008,1150)
>Referenced SOP Instance UI D	(0008,1155)
Retrieve Application Entity Title	(0008,0054)
Modality	(0008,0060)
Study Description	(0008,1030)
A cquistion In Study	(0020,1004)
Study Status ID	(0032,000a)

7.4 Detached Results Management

Attribute Name	Tag
Specific CharacterSet	(0008,0005)
Results ID	(4008,0040)
Results ID Issuer	(4008,0042)
Impressions	(4008,0300)
Referenced Study Sequence	(0008,1110)
> Referenced SO P Class UID	(0008,1150)
> Referenced SOP In stance UID	(0008,1155)
Referenced Interpretation Sequence	(4008,0005)
> Referenced SO P Class UID	(0008,1150)
> Referenced SOP In stance UID	(0008,1155)

7.5 Detached Interpretation Management

Attribute Name	Tag
Instance Number	(0020,0013)
Completion Flag	(0040,A4 91)
Completion Flag Description	(0040,A4 92)
VerificationFlag	(0040,A4 93)
Content Date	(0008,0023)
Content Time	(0008,0033)
Verifying Observer Sequence	(0040,A073)
>Verifying Observer Name	(0040,A075)
>V erifying Observer Identification C ode Sequence	(0040,A088)
>Verifying Organization	(0040,A027)
>Verification DateTime	(0040,A030)
Predecessor Documents Sequence	(0040, A 360)
Identical Documents Sequence	(0040,A525)
R eferenced R equest Se quence	(0040, A 370)
>Study Instance UI D	(0020,000D)
>Referenced Study Sequence	(0008,1110)

7.6 Structured Reporting

Attribute Name	Tag
Modality	(0008,0060)
Series Instance UID	(0020,000E)
Series Number	(0020,0011)
Referenced Study Component Sequence	(0008,1111)
>Referenced SOP Class UID	(0008,1150)
> Referenced SOP In stance UID	(0008,1155)

SR Document Series Module Attributes

>>Referenced SOP Class UID	(0008,1150)
>>Referenced SOP Instance UID	(0008,1155)
>Accession Number	(0008,0050)
>Placer Order Number/Imaging Service Request	(0040,2016)
>Filler Order Number/Imaging Service Request	(0040,2017)
>Requested Procedure ID	(0040,1001)
>Requested Procedure Description	(0032,1060)
>Requested Procedure Code Sequence	(0032,1064)
Performed Procedure Code Sequence	(0040,A372)
Current Requested Procedure Evidence Sequence	(0040,A375)
Pertinent Other Evidence Sequence	(0040,A385)



8.0 ASSOCIATION ESTABLISHMENT POLICIES

81 General

There is no limit on maximum PDU size. It is usually limited by the available system memory. The default value is 16K (16,384 byte).

8.2 Number of Associations

There is no inherent limitation in the number of Associations accepted by Exa Server, Professional Workstation, Acquire and Film Acquire. System resources usually limit it. Server, Professional Workstation, Acquire and Film Acquire initiate only one Association at a time.

8.3 Asynchronous Nature

Asynchronous operations are not supported. A request for asynchronous transfer is rejected.

8.4 Implementation Identifying Information

The Implementation Class UID is "1.2.840.114062" and Implementation Version Name is "Exa v1".

8.5 Association Initiation/Acceptance Policy

Both Acquire and professional Workstation initiate a new association only with operator interaction. For instance, the operator may send a study to a film printer from a Workstation. The SCP does not initiate a new association. It only processes the association from a remote node, optionally alerting the operator about the activity. It places no limitations on who may connect to it for verification purposes. The remote AE must exist and be configured properly in the Server's database to perform query and retrieve operations with Exa.

8.6 Associated Real World Activity

All real-world activity for initiating an association is conducted through the SCU applications, Professional Workstation, Acquire and Film Acquire. Real World Activities are described in

8.7 Proposed Presentation Context Table Exa accepts the following transfer syntaxes.

Name List	UI D List
JPEG Baseline	1.2.840.10008.1.2.4.50
JPEG Exte nded	1.2.840.10008.1.2.4.51
JPEG Lossless No P red	1.2.840.10008.1.2.4.57
JPEG Lossless	1.2.840.10008.1.2.4.70
RLE Lossless	1.2.840.10008.1.2.5
Implicit VR Little En dian	1.2.840.10008.1.2
Explicit VR Little En dian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2

If a remote client proposes multiple transfer syntaxes to Exa Server, then preference is given to the transfer syntax that matches the host machine's architecture. The maximum number of Transfer Syntaxes presented in an Association is 64.



9.0 COMMUNICATION PROFILES

- 9.1 Supported Communication Stacks
 - Exa provides TCP/IP Communication Support as defined in Part 8.
- 9.2 OSI Stack
 - OSI stack is not supported.
- 9.3 TCP/IP Stack
 - TCP/IP stack is inherited from the operating system and is supported by Exa.
- 9.4 Point to Point Stack
 - Point to Point stack is not supported.

10.0 EXTENSIONS/SPECIALIZATIONS/PRIVATIZATIONS

10.1 None.

11.0 CONFIGURATION

All configurable parameters are set through Exa Server at runtime. The configuration is password protected at Administrator level.

11.1 AE Title / Presentation Address Mapping

Local AE title for Acquire is "Exa Acquire SCU". Local AE title for Film Acquire is "Exa Film Ac SCU". Local AE title for Professional Workstation is "Exa Viewer SCU". Local AE title for Server is "Exa Server SCU". Node IP address, net mask, hostname, hostname aliases are configured by the local system administrator. TCP/IP port is configurable. Default is 104 DICOM.

12.0 SUPPORT OF EXTENDED CHARACTER SETS

No extended character sets are supported.