MiPACS Storage Server

Conformance Statement
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Document Information

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1 INTRODUCTION

1.1 MiPACS Storage Server

MiPACS Storage Server is an electronic database for Medical and Dental Imaging related data. MiPACS Storage Server can store and handle a large amount of data. It supplies means of accessing the stored images using DICOM v3.0 standard protocol. The MiPACS Storage Server communication is based on the DICOM v3.0 standard, in order to communicate with any DICOM v3.0 compliant products (e.g., scanners, workstations, etc.). MiPACS Storage Server functions generally as a DICOM provider, but other stations can retrieve and/or send DICOM files/images to and from it. The communication protocol uses TCP/IP as a transport layer.

1.2 About this Document

This document is a standard DICOM Conformance Statement for MiPACS Storage Server storage services.
MiPACS Storage Server is a SCP (Service Class Provider) and a SCU (Service Class User) for services relating DICOM data storage and retrieval.

1.3 Integration and validation

The use of this Conformance Statement, in conjunction with the DICOM v3.0 standard, is intended to facilitate communication with the MiPACS Storage Server. The integration of any device into a system of interconnected devices goes beyond the scope of the DICOM v3.0 standard when interoperability is desired. The user needs to proceed with caution and be aware of some issues:

- It is the user's responsibility to analyze the applications requirements and to design a solution that integrates the server properly with the network.
- Testing the complete range of possible interactions between the server and other devices should not be overlooked by the user.

1.4 Future Evolution

DICOM v3.0 standard evolves in time, in order to meet any user's requirements and in order to add new technologies and features. To keep up with these changes, Medicor Imaging will follow the evolution of the standard. This evolution may require modifications to any device that has implemented DICOM v3.0 standard. In the same time the user should ensure that any other provider who connects to MiPACS Storage Server would follow this evolution.

1.5 Sources for this Document

- American College of Radiology-National Electrical Manufacturers Association (ACR-NEMA) Digital Imaging and Communications V2.0, 1988.
- ACR-NEMA Digital Imaging and Communications in Medicine (DICOM) V3.0. 1993 - 1997.
- AAO, ACR, ADA, ASGE, CAP, NEMA – Digital Imaging and Communications in Medicine (DICOM) Supplement 15 – Visible Light Image for Endoscopy, Microscopy, and Photography, Draft Standard May 1, 1997.

2 IMPLEMENTATION MODEL

MiPACS Storage Server is a DICOM image and storage database. MiPACS Storage Server stores images sent to it by service class users, it allows query and retrieve requests based on several standard models.

2.1 Application Data Flow Diagram

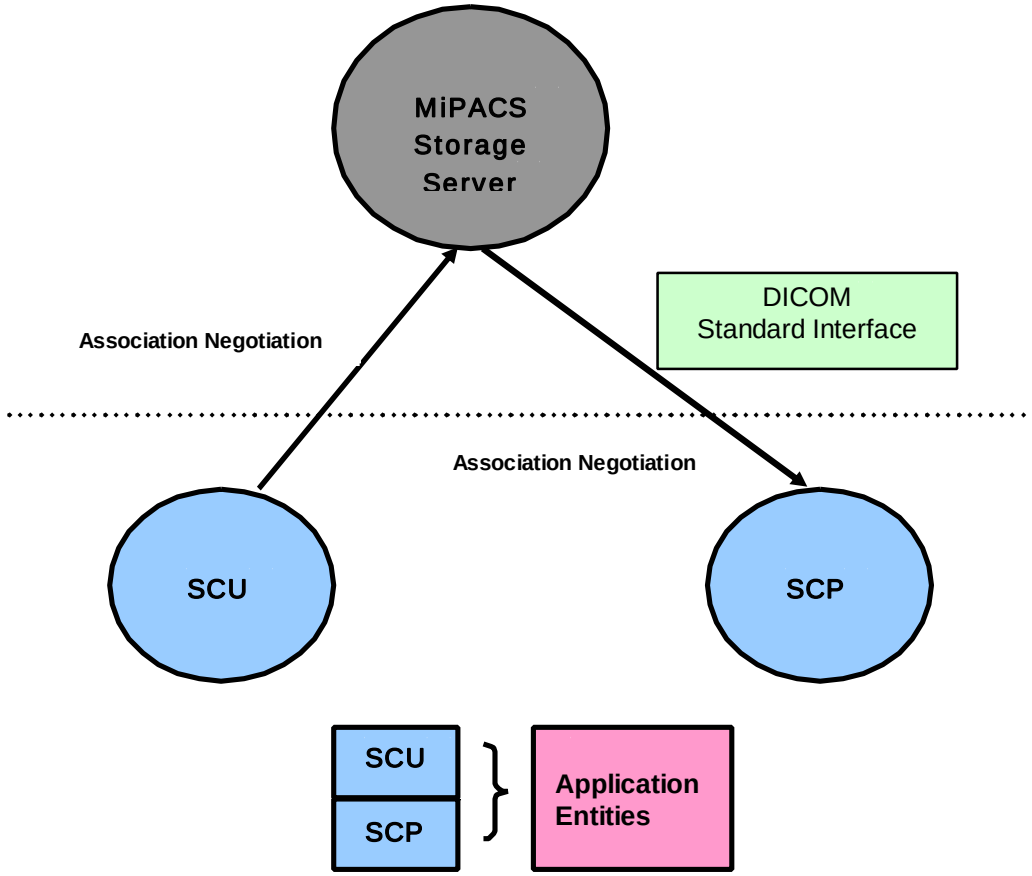

Figure 2.1 – Application Data Flow Diagram

MiPACS Storage Server implementation supports and provides DICOM services using the following default Application Entities. Also, this parameter can be configured via GUI:

MI_SERVER

2.2 Receive Images

MiPACS Storage Server stores any received image, in it's entirely, in its internal data store. Also MiPACS Storage Server extracts the query information and stores the patient, study, series and image data in its internal database

2.3 Query to/from Other Devices

MiPACS Storage Server will respond to any query request basing its decisions on the records stored in the database.

2.4 Retrieve to/from Other Devices

MiPACS Storage Server responds to C-MOVE commands in order to retrieve images for the requester by obtaining a reference from the database then obtaining the object directly from the data store.

2.5 Transmit Images

MiPACS Storage Server will transmit images to other compatible devices as Service Class User of C-STORE service.

2.6 Functional Definitions of AE's

2.6.1 MiPACS Storage Server

MiPACS Storage Server waits for another application to connect at the presentation port configured for its AE title. MiPACS Storage Server will accept associations with Presentation Contexts for Service Object Pair (SOP) classes of the Storage, Query-Retrieve (C-MOVE and C-FIND only) and Verification Service Classes.

- When performing a Storage Service Class, MiPACS Storage Server will receive images and store them into its archive.
- When performing Query-Retrieve Service Class (C-FIND), MiPACS Storage Server will query its archive database according to the request's parameters, and will send the results to the issuer.
- When performing Query-Retrieve Service Class (C-MOVE), MiPACS Storage Server will issue a C-STORE (to the target AE) for every image in the request.

3 AE SPECIFICATIONS

3.1 MiPACS Storage Server Specifications

MiPACS Storage Server provides Standard Conformance to the following DICOM V3.0 SOP Classes as SCP and SCU:

SOP Class	SOP Class UID
Verification	1.2.840.10008.1.1

Table 3.1 – Verification SOP Class

Transfer Syntax Name	Transfer Syntax UID
Implicit VR Little Endian (DICOM *Default)*	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2

Table 3.2 – Standard Transfer Syntax

Transfer Syntax Name	Transfer Syntax UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2
JPEG Baseline, lossy (Process 1)	1.2.840.10008.1.2.4.50
JPEG Lossy (Process 4) (12 bit)	1.2.840.10008.1.2.4.51
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70
RLE Lossless (Pack Bits)	1.2.840.10008.1.2.5

Table 3.3 – Extended Transfer Syntaxes

SOP Class Name	SOP Class UID
Stored Print Storage Class	1.2.840.10008.5.1.1.27
Hardcopy Grayscale Image Storage Class	1.2.840.10008.5.1.1.29
Hardcopy Color Image Storage Class	1.2.840.10008.5.1.1.30
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Computed Tomography 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
Magnetic Resonance 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
Standalone Overlay Storage	1.2.840.10008.5.1.4.1.1.8
Standalone Curve Storage	1.2.840.10008.5.1.4.1.1.9
Standalone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10
Standalone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11
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
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128
Standalone Positron Emission Tomography Curve Storage	1.2.840.10008.5.1.4.1.1.129
Radiotherapy Image Storage	1.2.840.10008.5.1.4.1.1.481.1
Radiotherapy Dose Storage	1.2.840.10008.5.1.4.1.1.481.2
Radiotherapy Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3
Radiotherapy Beams Treatment Record Storage Class	1.2.840.10008.5.1.4.1.1.481.4
Radiotherapy Plan Storage	1.2.840.10008.5.1.4.1.1.481.5
Radiotherapy Brachy Treatment Record Storage Class	1.2.840.10008.5.1.4.1.1.481.6
Radiotherapy Treatment Summary Record Storage Class	1.2.840.10008.5.1.4.1.1.481.7
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra-oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra-oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
Visible Light Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1
Visible Light Multiframe Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2
Visible Light Endoscopic Image Storage Class	1.2.840.10008.5.1.4.1.1.77.1.1
Visible Light Microscopic Image Storage Class	1.2.840.10008.5.1.4.1.1.77.1.2
Visible Light Slide-Coordinates Microscopic Image Storage Class	1.2.840.10008.5.1.4.1.1.77.1.3
Visible Light Photographic Image Storage Class	1.2.840.10008.5.1.4.1.1.77.1.4
Basic Text Structured Reporting	1.2.840.10008.5.1.4.1.1.88.11
Enhanced Structured Reporting	1.2.840.10008.5.1.4.1.1.88.22
Comprehensive Structured Reporting	1.2.840.10008.5.1.4.1.1.88.33
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1
Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1

Table 3.4 – SOP Classes for Storage Services

3.1.1 Association Establishment Policies

3.1.1.1 General

MiPACS Storage Server contains no limitations for maximum PDU size. The Application Context Name proposed and recognized by MiPACS Storage Server.

Application Context: **1.2.840.10008.3.1.1.1**

3.1.1.2 Number of Associations

The number of simultaneous associations that is accepted by MiPACS Storage Server is between 1 - 256 and is also configurable via GUI. MiPACS Storage Server will spawn a new process for each connection request it receives. Therefore, MiPACS Storage Server can have multiple simultaneous connections.

3.1.1.3 Asynchronous Nature

MiPACS Storage Server will only allow a single outstanding operation on an association. Therefore MiPACS Storage Server will not perform asynchronous operations window negotiation, other than default specified by DICOM standard.

3.1.1.4 Implementation Identifying Information

MiPACS Storage Server responds with the following implementation identifying parameters:

Implementation Class UID: **1.2.840.114257.36087**
Implementation Version Name: **MI 1.00.4.001**

3.1.1.5 Called/Calling Titles

MiPACS Storage Server uses the host name as the default calling title. Also MiPACS Storage Server validates the Called Title and IP address of the requesting SCU during association negotiation, providing a first pass level of security.

3.1.2 Association Initiated by Real World Activity

3.1.2.1 Real World Activity – Verification

3.1.2.1.1 Associated Real-World Activity – Verification

MiPACS Storage Server will commit Verification requests as a response to the user mediated requests via GUI, in order to test the validity of current DICOM connection.

3.1.2.1.2 Proposed Presentation Contexts

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax	Role	Extended Negotiation
Verification SOP Class	1.2.840.10008.1.1	All from Table 3.2	SCU	None

Table 3.5 – Proposed Presentation Contexts

3.1.2.1.3 SOP Specific Conformance – Verification

MiPACS Storage Server provides standard conformance to Verification Service Class from DICOM v3.0.

3.1.2.2 Real World Activity - Storage

3.1.2.2.1 Associated Real World Activity – Storage

MiPACS Storage Server stores any image stored in its database to move destination AE specified in the C-MOVE request by a SCU. MiPACS Storage Server by default sends IOD using the transfer syntax that was used when the image was originally stored. MiPACS Storage Server can be configured to offer the original transfer syntax and Implicit Little Endian (DICOM default) transfer syntax per presentation context to a SCP. If SCP accepts Implicit Little Endian transfer syntax, MiPACS Storage Server will convert the IOD from the original transfer syntax to Implicit Little Endian.

3.1.2.2.2 Presentation Context Table – Storage

SOP Class	Transfer Syntax	Role	Extended Negotiation
All from Table 3.4	All from Table 3.3	SCU	None

Table 3.6 – Presentation Contexts for Storage

3.1.2.2.3 SOP Specific Conformance – Storage

MiPACS Storage Server Is a SCU conforms to the DICOM Storage Service Class.

3.1.3 Association Acceptance Policy

3.1.3.1 Real World Activity - Verification

3.1.3.1.1 Associated Real - World Activity - Verification

MiPACS Storage Server performs the Verification Service Class by responding with C-ECHO RSP, in order to provide an SCU the state of being able to receive DICOM requests.

3.1.3.1.2 Presentation Context Table - Verification

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax	Role	Extended Negotiation
Verification SOP Class	1.2.840.10008.1.1	Any from Table 3.2	SCP	None

Table 3.9 – Acceptable Presentation Contexts

3.1.3.1.3 SOP Specific Conformance - Verification

MiPACS Storage Server provides standard conformance to the DICOM V3.0 Verification Service Class as an SCP for the Verification SOP Class, UID=1.2.840.10008.1.1.

3.1.3.1.4 Presentation Context Acceptance Criterion - Verification

MiPACS Storage Server will accept any Presentation Context from Table 3.9.

3.1.3.1.5 Transfer Syntax Selection Policies

MiPACS Storage Server will support/require only the default DICOM Transfer Syntax for the Verification command.

3.1.3.2 Real World Activity - Storage

A remote system requests image storage to MiPACS Storage Server using the C-STORE command.

3.1.3.2.1 Associated Real World Activity - Storage

The Real World activity associated with the C-STORE operation is the storage of the image in the archive. MiPACS Storage Server will issue a failure status if it is unable to store the image in the archive.

3.1.3.2.2 Presentation Context table - Storage

Abstract Syntax	Transfer Syntax	Role	Extended Negotiation
Any from Table 3.4	Any from Table 3.3	SCP	FULL SCP

Table 3.10 – Acceptable Presentation Contexts

MiPACS Storage Server provides standard conformance to the DICOM V3.0 Storage Service Class as an SCP for the any of the SOP Classes from table 3.3.

3.1.3.2.3 SOP Specific Conformance - Storage

MiPACS Storage Server conforms to the FULL DICOM Storage Service Class (Level 2). No elements are discarded by . Also MiPACS Storage Server conforms to the DICOM File Management Roles and Services as a FSC, FSR and FSU, as defined in Part 10 of the DICOM v3.0 specifications. MiPACS Storage Server stores all DICOM images along with the File Meta Information Header.

3.1.3.2.4 Presentation Context Acceptance Criterion - Storage

MiPACS Storage Server will accept any number of Storage Presentation Contexts per association request.

3.1.3.2.5 Transfer Syntax Selection Policies - Storage

MiPACS Storage Server has no preference on Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will pick the first Transfer Syntax it encounters from table 3.3 in a Presentation Context.

3.1.3.3 Real World Activity - Find

3.1.3.3.1 Associated Real World Activity – Find

MiPACS Storage Server responds to any query request, which is sent by an SCU, according to a hierarchical (DICOM default) and relational (through extended negotiation) 3 level model.

3.1.3.3.2 Presentation Context Table – Find

MiPACS Storage Server will accept any of the Presentation Contexts listed in Table 3.11for Query.

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax	Role	Extended Negotiation
Patient Root Query/Retrieve – FIND	1.2.840.10008.5.1.4.1.2.1.1	Any from Table 3.2	SCP	None
Study Root Query/Retrieve – FIND	1.2.840.10008.5.1.4.1.2.2.1	Any from Table 3.2	SCP	None

Table 3.11 – Acceptable Presentation Contexts

MiPACS Storage Server can be configured to support C-Find Extended Negotiation for relational queries. If it receives an associate request with extended negotiation stub it will respond back with the following information:

Field Name	Value	Description Field
Relational-queries	1	Relational queries are supported

Table 3.11.1 – Find extended negotiation

3.1.3.3.3 SOP Specific Conformance – Find

MiPACS Storage Server provides standard conformance to the DICOM V3.0 Query/Retrieve Service Class as an SCP for the following SOP Class via the DIMSE C-FIND and C-MOVE. These are defined in Part 7 of the DICOM Standard.

The following tables describe the attributes returned for the levels of query requested. MiPACS Storage Server supports all the four levels of query using the respective keys.

Attribute	Query Keys Matching	Query Keys Return	Tag	Type
Patient's Name	Yes	Yes	(0010,0010)	Required
Patient ID	Yes	Yes	(0010,0020)	Unique
Patient's Birth Date	Yes	Yes	(0010,0030)	Optional
Patient's Birth Time	Yes	Yes	(0010,0032)	Optional
Patient's Sex	Yes	Yes	(0010,0040)	Optional
Other Patient Ids	No	Yes	(0010,1000)	Optional
Other Patient Names	No	Yes	(0010,1001)	Optional
Ethnic Group	Yes	Yes	(0010,2160)	Optional
Patient Comments	No	Yes	(0010,4000)	Optional
Number of Patient Related Studies	N/A	Yes	(0020,1200)	Optional
Number of Patient Related Series	N/A	Yes	(0020,1202)	Optional
Number of Patient Related Instances	N/A	Yes	(0020,1204)	Optional

Table 3.11.1 – Patient Level Attributes

Attribute	Query Keys Matching	Query Keys Return	Tag	Type
Study Date	Yes	Yes	(0008,0020)	Required
Study Time	Yes	Yes	(0008,0030)	Required
Accession Number	Yes	Yes	(0008,0050)	Required
Study ID	Yes	Yes	(0020,0010)	Required
Study Instance UID	Yes	Yes	(0020,000D)	Unique
Modalities in Study	Yes	Yes	(0008,0061)	Optional
Referring Physician's Name	Yes	Yes	(0008,0090)	Optional
Study Description	Yes	Yes	(0008,1030)	Optional
Name of Physician(s) Reading Study	No	Yes	(0008,1060)	Optional
Admitting Diagnoses Description	Yes	Yes	(0008,1080)	Optional
Patient's Age	Yes	Yes	(0010,1010)	Optional
Patient's Size	Yes	Yes	(0010,1020)	Optional
Patient's Weight	Yes	Yes	(0010,1030)	Optional
Occupation	Yes	Yes	(0010,2180)	Optional
Additional Patient History	No	Yes	(0010,21B0)	Optional
Number of Study Related Series	N/A	Yes	(0020,1206)	Optional
Number of Study Related Instances	N/A	Yes	(0020,1208)	Optional

Table 3.11.2 – Study Level Attributes

Attribute	Query Keys Matching	Query Keys Return	Tag	Type
Modality	Yes	Yes	(0008,0060)	Required
Series Number	Yes	Yes	(0020,0011)	Required
Series Instance UID	Yes	Yes	(0020,000E)	Unique
Number of Series Related Instances	N/A	Yes	(0020,1209)	Optional

Table 3.11.3 – Series Level Attributes

Attribute	Query Keys Matching	Query Keys Return	Tag	Type
Instance Number	Yes	Yes	(0020,0013)	Unique
SOP Instance UID	Yes	Yes	(0008,0018)	Required

Table 3.11.4 – Composite Object Instance Level Attributes

3.1.3.3.4 Presentation Context Acceptance Criterion – Find

MiPACS Storage Server will accept any Presentation Context from table 3.11.

3.1.3.3.5 Transfer Syntax Selection Policies – Find

MiPACS Storage Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

- **DICOM Implicit VR Little Endian (Default).**
- **DICOM Explicit VR Little Endian.**
- **DICOM Explicit VR Big Endian.**

3.1.3.4 Real World Activity - Move

3.1.3.4.1 Associated Real World Activity - Move

The Real World activity associated with the C-MOVE command is an examination of the archive content. MiPACS Storage Server will issue a failure status if it is unable to process the move request. MiPACS Storage Server will respond to any retrieve requests sent to it from an SCU, according to a hierarchical (DICOM default) and relational (through extended negotiation) 3 level model.

3.1.3.4.2 Presentation Context Table – Move

MiPACS Storage Server will accept any of the Presentation Contexts listed in Table 3.12 for move.

Abstract Syntax Name	Abstract Syntax UID	Transfer Syntax	Role	Extended Negotiation
Patient Root Query/Retrieve – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Any from Table 3.2	SCP	None
Study Root Query/Retrieve – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Any from Table 3.2	SCP	None

Table 3.12 – Acceptable Presentation Contexts

MiPACS Storage Server can be configured to support C-Move Extended Negotiation for relational queries. If it receives an associate request with extended negotiation stub it will respond back with the following information:

Field Name	Value	Description Field
Relational-queries	1	Relational queries are supported

Table 3.12.1 – Move extended negotiation

3.1.3.4.3 SOP Specific Conformance - Move

MiPACS Storage Server will try to commit a new association with the destination in the C-MOVE request. MiPACS Storage Server will associate for one or more presentation contexts listed in table 3.4 (SOP Classes for Storage Services) for C-STORE sub-operations generated by the C-MOVE request.

3.1.3.4.4 Presentation Context Acceptance Criterion - Move

MiPACS Storage Server will accept any Presentation Context from table 3.12: any number of Move Presentation Contexts per association request.

3.1.3.4.5 Transfer Syntax Selection Policies - Move

MiPACS Storage Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

- **DICOM Implicit VR Little Endian (Default).**
- **DICOM Explicit VR Little Endian.**
- **DICOM Explicit VR Big Endian.**

3.1.3.4.6 Status

MiPACS Storage Server returns one of the following status codes to a C-MOVE request.

Service Status	Further Meaning	Status Codes
Refused	Out of Resources - Unable to calculate number of matches	A701
	Out of Resources - Unable to perform sub-operations	A702
	Move Destination unknown	A801
Failed	Identifier does not match SOP Class	A900
	Unable to Process	C001
Cancel	Sub-operations terminated due to Cancel Indication	FE00
Warning	Sub-operations Complete - One or more Failures	B000
Success	Sub-operations Complete – No Failures	0000
Pending	Sub-operations are continuing	FF00

Table 3.13 – C-MOVE status

3.1.3.5 Real World Activity - Storage Commitment

3.1.3.5.1 Associated Real World Activity -Storage Commitment

MiPACS Storage Server stores images that are sent to it from an SCU or imported directly through it's user interface. MiPACS Storage Server will process storage commitment requests sent by an SCU via a DIMSE N-ACTION request for safe keeping of a set of SOP instances.

3.1.3.5.2 Presentation Context Table – Storage Commitment

MiPACS Storage Server will accept any of the Presentation Contexts listed in Table 3.14 for Storage Commitment.

SOP Class	Transfer Syntax	Role	Extended Negotiation
Storage Commitment Push Model	DICOM Implicit VR Little Endian	SCP	None

Table 3.14: Presentation Contexts for Storage Commitment

3.1.3.5.3 SOP Specific Conformance - Storage Commitment

MiPACS Storage Server supports the following elements for the "Storage Commitment Push Model " class as an SCP:

Action Type Name	Action Type ID	Attribute Name	Tag
Request Storage Commitment	1	Transaction UID	(0008,1195)
		Referenced SOP Sequence	(0008,1199)
		>Referenced SOP Class UID	(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)

Table 3.15: Storage Commitment Request – Action Information

3.1.3.5.4 Presentation Context Acceptance Criterion - Storage Commitment

MiPACS Storage Server will accept any Presentation Context from table 3.14.

3.1.3.5.5 Transfer Syntax Selection Policies - Storage Commitment

MiPACS Storage Server will accept any Transfer Syntax from table 3.14 for storage commitment presentation context.

3.1.3.5.6 Storage Commitment Result

MiPACS Storage Server will send an N-EVENT-REPORT on a separate association from the N-ACTION operation containing the transaction UID and the sets of successfully committed SOP instances or sets of failed SOP instances which were included in the original N-ACTION request.

MiPACS Storage Server supports the Event Information as specified in the table below:

Action Type Name	Action Type ID	Attribute Name	Tag
Storage Commitment Request Successful	1	Transaction UID	(0008,1195)
		Referenced SOP Sequence	(0008,1199)
		>Referenced SOP Class UID	(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)
Storage Commitment Request Complete-Failures Exist	2	Referenced SOP Sequence	(0008,1199)
		>Referenced SOP Class UID	(0008,1150)
		>Referenced SOP Instance UID	(0008,1155)
		Failed SOP Sequence	(0008,1198)
		>Referenced SOP Class UID	(0008,1150)
		>Referenced SOP Instance UID	(0008,1155)
		>Failure Reason	(0008,1197)

Table 3.16: Storage Commitment Result – Event Information.

4 COMMUNICATIONS PROFILES

4.1 Supported Communication Stacks

The TCP/IP Network Communication Support stack is the only supported protocol, according to DICOM v3.0.

4.2 TCP/IP Stack

All the Application Entities in MiPACS Storage Server inherit their TCP/IP stack.

4.3 Physical Media Support

MiPACS Storage Server is indifferent to the physical medium over which TCP/IP operates.

5 EXTENSIONS / SPECIALIZATIONS / PRIVATIZATIONS

Not applicable.

6 CONFIGURATION

The following parameters of MiPACS Storage Server are configurable.

Parameter	Possible Values	Default Value
AE Title	Configurable via GUI	MI_SERVER
Port Number	Configurable via GUI	104
Maximum number of connections	1…256	5
Accept SOP Classes	Configurable via GUI	All from Table 3.4
Supported Transfer Syntax	Configurable via GUI	All from Table 3.3
Timeout	30sec … 300sec	100sec
Allow Multiple Connects by Same Client	Yes / No	Yes
Idle Timeout	5sec … 600sec	60sec
Allow Anonymous Clients	Yes / No	No
Minimum Free Disk Space	1 MB …	9MB
Alert user when free disk space remaining	1 MB …	9MB
Working Dir	Configurable via GUI	Executable Dir
Creation of Patient Folder	Yes / No	Yes
Patient Folder Name	Patient Name / Patient ID	Patient Name
Creation Study Folder	Yes / No	No
Creation Series Folder	Yes / No	No
File Suffix	Max 3 characters	DIC
Log Error Messages	Yes / No	Yes
Log DICOM Messages	Yes / No	No
Log Server Messages	Yes / No	Yes

Table 6.1 – Configuration Parameters

7 SUPPORT FOR EXTENDED CHARACTER SETS

The following character set is supported:

- Basic G0 Set of the International Reference Version of ISO 646:1990 (ISO-IR 6).

8 ACRONYMS AND ABBREVIATIONS

AAO	American Academy of Ophthalmology
ACR	American College of Radiology
ADA	American Dental Association
AE	Application Entity
DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
DIMSE-C	DICOM Message Service Element Composite
DIMSE-N	DICOM Message Service Element Normalized
DX	Digital Radiography
FSC	File-set Creator
FSR	File-set Reader
FSU	File-set Updater
IOD	Information Object Definition
NEMA	National Electrical Manufacturers Association
PACS	Picture Archiving and Communication System
PDU	Protocol Data Unit
RLE	Run Length Encoding
RSNA	Radiological Society of North America
SCP	Service Class Provider
SCU	Service Class User
SOP	Service-Object Pair
TCP/IP	Transmission Control Protocol/Internet Protocol
UID	Unique Identifier
VL	Visible Light
VR	Value Representation