

# DICOM 3.0

## Conformance Statement

### MIE-IAS v 8.1(.Net Version)

Part number: 0300001-0001	02/05/2003 Weiping-Ren
Part number: 0401001-0001	10/11/2003 Makoto-Okazaki
Part number: 0402003-0001	01/30/2004 Makoto-Okazaki
Part number: 0405004-0001	11/02/2004 Kasuya-Shinji
Part number: 0501001-0001	09/27/2007 Liming-Qin
Part number: 0601002-0001	10/01/2009 -----
Part number: 0801001-0001	05/20/2010 Kenji-Kakizawa

Document #:

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Printed: 09/27/2007

Filename: **MIE-IAS** Conf. v5.1

Last Modified: 09/27/2004

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## 1.0 Introduction

### 1.1 Purpose of this Document

This document is a DICOM Conformance Statement for **MIE-IAS** is a DICOM server and client that can store DICOM images from DICOM clients can access it to retrieve these images, and can store DICOM images to DICOM server and query/retrieve images from DICOM server.

This document has been written using the guidelines provided in the DICOM standard [2 – part 2].

C\_STORE as SCP

C\_FIND, C\_GET and C\_MOVE as SCP

C\_ECHO as SCP

### 1.2 Definitions

The following are symbols and abbreviations used within this document.

MIE-IAS	MIE-IAS(Image Archive Server) = Name of DICOM Server Software
AE	Application Entity
ACR	American College of Radiology
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-Normative
NEMA	National Electrical Manufacturers Association
OSI	Open Systems Interconnection
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

### 1.3 References

[1] ACR/NEMA Standards Publications, No PS3, DICOM Standards:

Part 1 - Introduction

Part 2 - Conformance

Part 3 - Information Object Definitions

Part 4 - Service Class Specifications

Part 5 - Data Structures and Encoding

Part 6 - Data Dictionary

Part 7 - Message Exchange

Part 8 - Network Communication Support

Part 9 - Point to Point Communication Support for Message Exchange

Part 10 - Media Storage and File Format for Media Interchange

Part 11 - Media Storage Application Profiles

Part 12 - Storage Functions and Media Formats for Data Interchange

Part 13 - Print Management Point-to-Point Communication Support

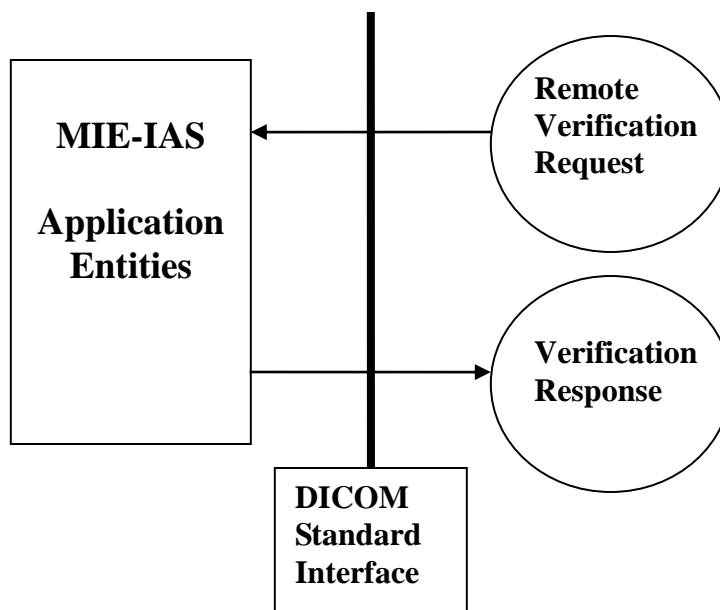
## 2.0 Implementation model

The primary functions provided by **MIE-IAS** are:

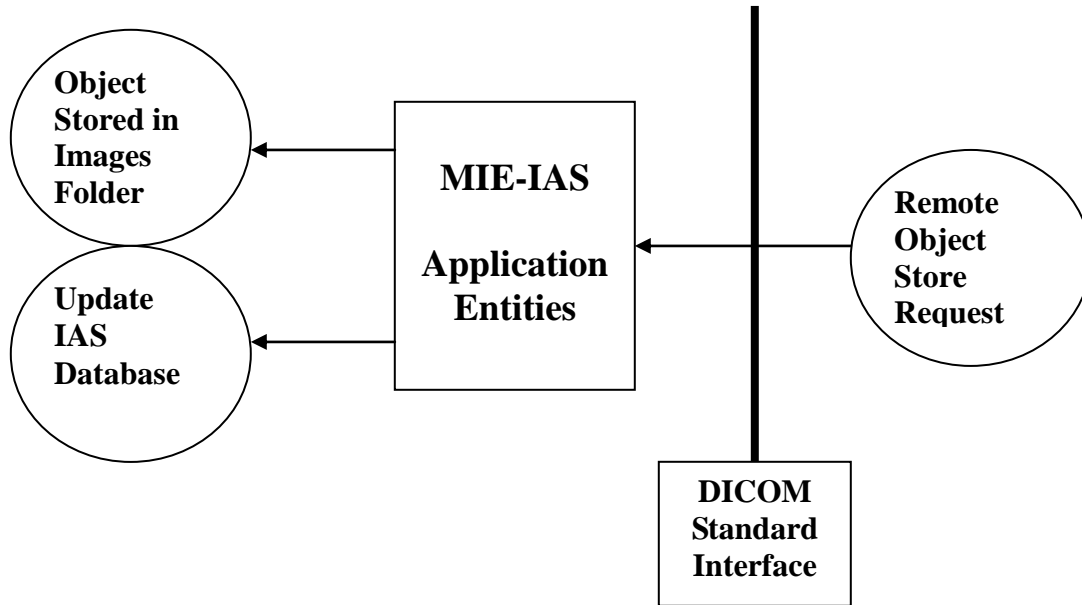
1. Respond to verification requests from a DICOM Verification SCU.
2. Accept objects from a DICOM storage service class user. Place the objects in an images folder. Maintain an object database containing attributes of the objects.
3. Respond to requests from DICOM Query/Retrieve service class users for retrieval of objects.

### 2.1 Application data flow diagram

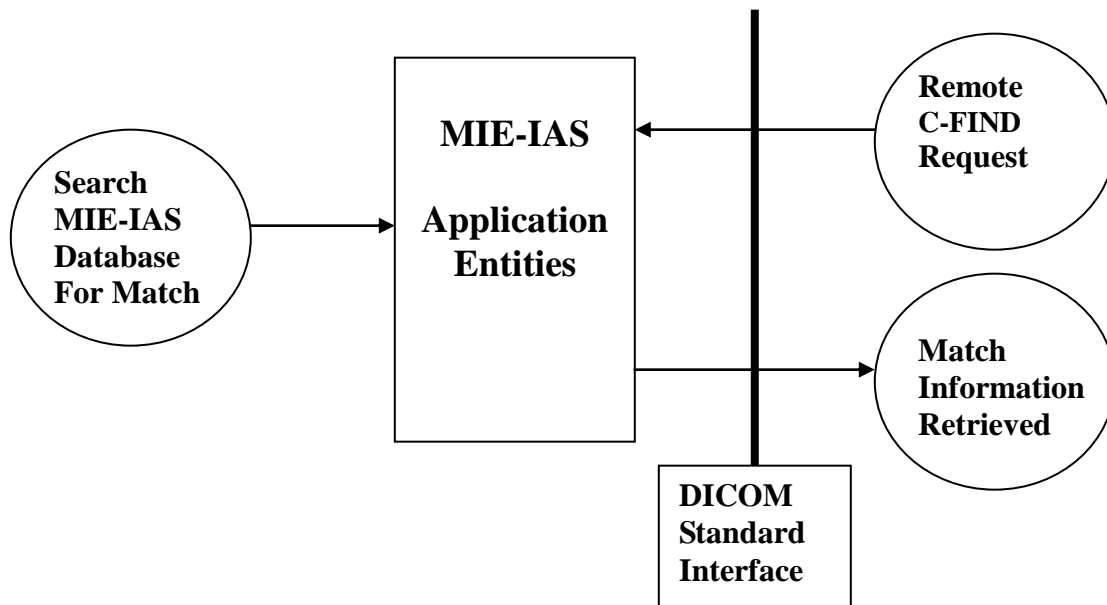
#### 2.1.1 Respond to verification requests



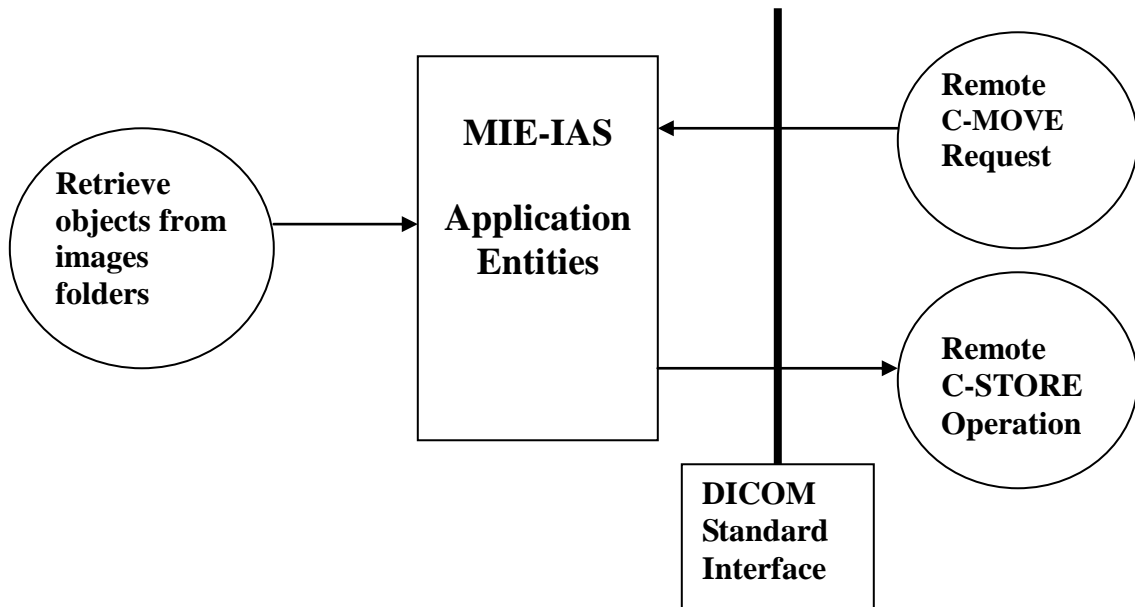
### 2.1.2 Accept objects received from a DICOM SCU



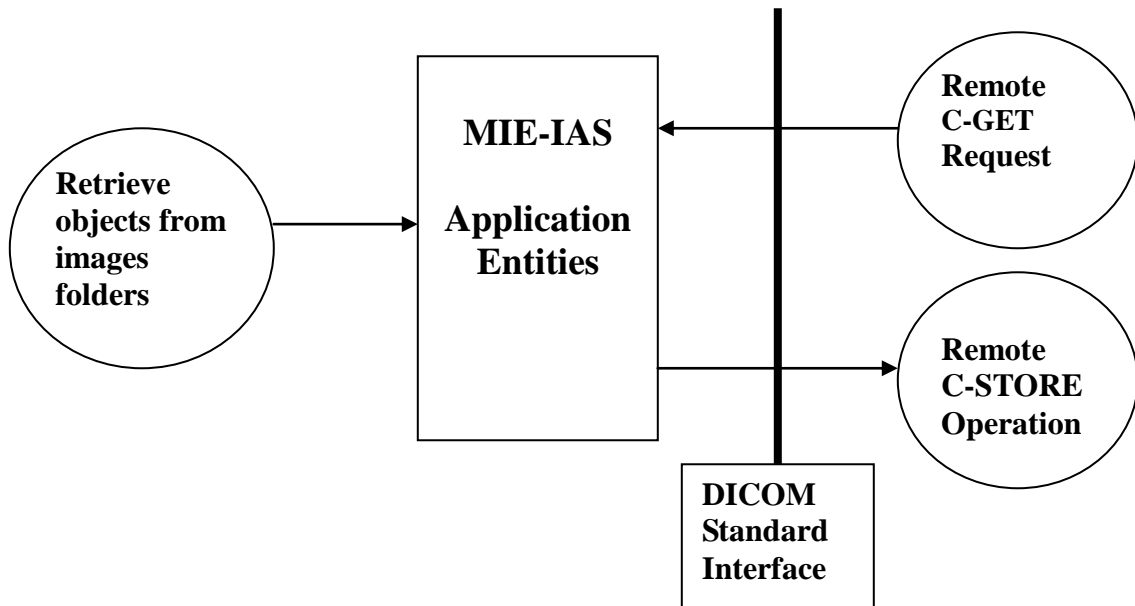
### 2.1.3 Respond to C-FIND queries



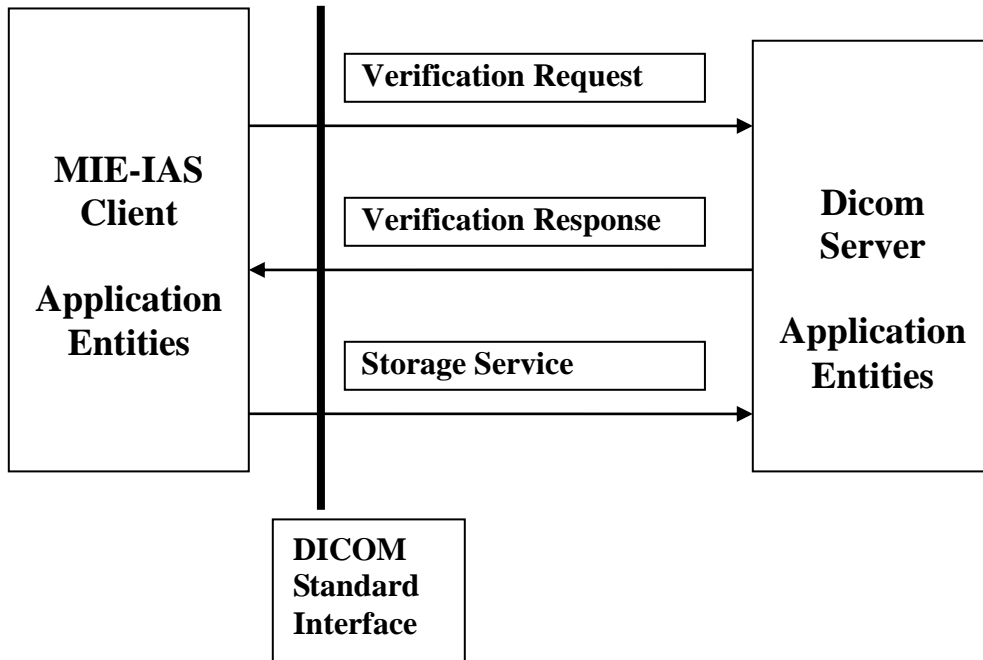
### 2.1.4 Respond to C-MOVE queries



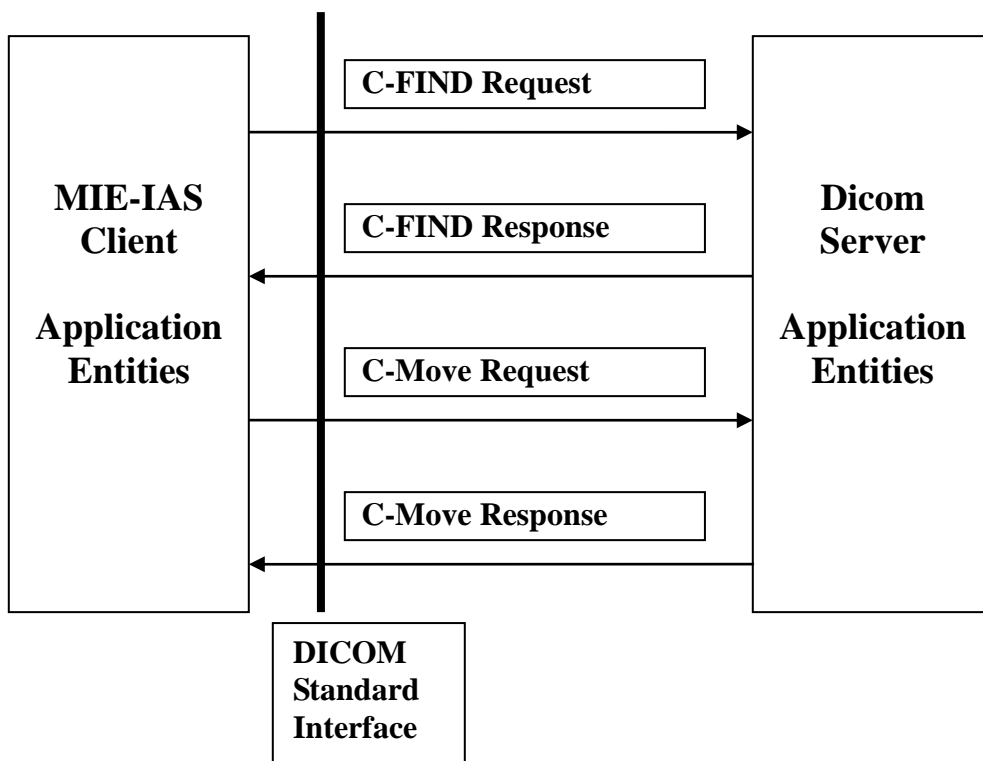
### 2.1.5 Respond to C-GET queries



### 2.1.6 Store dicom images to Dicom Server



### 2.1.7 Query/Retrieve Service





## **2.2 Functional definition of Application Entities**

**MIE-IAS** application entity acts as a Service Class Provider (SCP) for the following service classes:

- Verification Service Class
- Storage Service Class
- Query/Retrieve Service Class

And **MIE-IAS** application entity acts as a service class user (SCU) for the following service classes:

- Storage Service Class
- Query/Retrieve Service Class
- Move Service Class

## **2.3 Sequencing of Real World Activities**

Not applicable.

### 3 Application Entity specifications

#### 3.1 MIE-IAS AE Specifications

##### Verification SOP Class

The **MIE-IAS** AE provides standard conformance to the following DICOM V3.0 Service Object Pair (SOP) Class as a Verification Service Class is implemented as SCP only.

As an SCP it sends an Echo response when it receives an Echo request from a remote AE.

**Table 1: Valid SCP Verification SOP Class for MIE-IAS AE**

SOP Class Name	SOP Class UID	Role
Verification Service Class	1.2.840.10008.1.1	SCP

##### Storage SOP Classes

The **MIE-IAS** AE provides standard conformance to the following DICOM V3.0 SOP Classes as an SCP and an SCU.

**Table 2: Storage SOP Classes for MIE-IAS AE**

SOP Class UID	SOP Class Name
1.2.840.10008.5.1.4.1.1.1	Computed Radiography Image Storage
1.2.840.10008.5.1.4.1.1.2	CT Image Storage
1.2.840.10008.5.1.4.1.1.3	Ultrasound Multi-frame Image Storage (retired)
1.2.840.10008.5.1.4.1.1.3.1	Ultrasound Multi-frame Image Storage
1.2.840.10008.5.1.4.1.1.4	MR Image Storage
1.2.840.10008.5.1.4.1.1.5	Nuclear Medicine Image Storage (retired)
1.2.840.10008.5.1.4.1.1.6	Ultrasound Image Storage (retired)
1.2.840.10008.5.1.4.1.1.6.1	Ultrasound Image Storage
1.2.840.10008.5.1.4.1.1.7	Secondary Capture Image Storage
1.2.840.10008.5.1.4.1.1.12.1	X-Ray Angiographic Image Storage
1.2.840.10008.5.1.4.1.1.12.2	X-Ray Radiflouroscopic Image Storage
1.2.840.10008.5.1.4.1.1.12.3	X-Ray Angiographic Bi-plane Image Storage
1.2.840.10008.5.1.4.1.1.20	Nuclear Medicine Image Storage
1.2.840.10008.5.1.4.1.1.128	Positron Emission Tomography (PET) Image Storage
1.2.840.10008.5.1.4.1.1.481.1	Radiotherapy (RT) Image Storage
1.2.840.10008.5.1.4.1.1.481.2	Radiotherapy (RT) Dose Storage
1.2.840.10008.5.1.4.1.1.481.3	Radiotherapy (RT) Structure Set Storage

1.2.840.10008.5.1.4.1.1.481.4	Radiotherapy (RT) Beams Treatment Record Storage
1.2.840.10008.5.1.4.1.1.481.5	Radiotherapy (RT) Plan Storage
1.2.840.10008.5.1.4.1.1.481.6	Radiotherapy (RT) Brachy Treatment Record Storage
1.2.840.10008.5.1.4.1.1.481.7	Radiotherapy (RT) Summary Treatment Record Storage
1.2.840.10008.5.1.4.1.1.1.1	Digital X-Ray Image Storage – For Presentation
1.2.840.10008.5.1.4.1.1.1.1.1	Digital X-Ray Image Storage – For Processing
1.2.840.10008.5.1.4.1.1.88.33	Comprehensive SR

### Query/Retrieve SOP Classes

The **MIE-IAS** AE provides standard conformance to the following DICOM V3.0 SOP Classes as a Query/Retrieve SCP, when servicing queries about objects that have been stored. Extended negotiation for relational queries is not supported.

**Table 3: Valid SCP Query/Retrieve SOP Class for MIE-IAS AE**

SOP Class UID	SOP Class Name
1.2.840.10008.5.1.4.1.2.1.1	Patient Root Query/Retrieve Information Model – Find
1.2.840.10008.5.1.4.1.2.1.2	Patient Root Query/Retrieve Information Model – Move
1.2.840.10008.5.1.4.1.2.1.3	Patient Root Query/Retrieve Information Model – Get
1.2.840.10008.5.1.4.1.2.2.1	Study Root Query/Retrieve Information Model – Find
1.2.840.10008.5.1.4.1.2.2.2	Study Root Query/Retrieve Information Model – Move
1.2.840.10008.5.1.4.1.2.2.3	Study Root Query/Retrieve Information Model – Get

The **MIE-IAS** AE provides standard conformance to the following DICOM V3.0 SOP Classes as a Query/Retrieve SCU.

**Table 4: Valid SCU Query/Retrieve SOP Class for MIE-IAS AE**

SOP Class UID	SOP Class Name
1.2.840.10008.5.1.4.1.2.1.1	Patient Root Query/Retrieve Information Model – Find
1.2.840.10008.5.1.4.1.2.1.2	Patient Root Query/Retrieve Information Model – Move
1.2.840.10008.5.1.4.1.2.2.1	Study Root Query/Retrieve Information Model – Find
1.2.840.10008.5.1.4.1.2.2.2	Study Root Query/Retrieve Information Model – Move

## 3.1.1 Association establishment policies for MIE-IAS AE

### 3.1.1.1 General

All associations with the **MIE-IAS** AE shall be established using the DICOM 3.0 Application Context. A single DICOM Application Context Name is defined for this version of the DICOM standard. This name is “**1.2.840.10008.3.1.1.1**”.

The **MIE-IAS** AE accepts association for the following purposes:

- Supports the **C-ECHO** service to allow end-to-end verifications.
- Supports the **C-STORE** service to store objects into the database.
- Supports the **C-FIND** service to search the database.
- Supports the **C-MOVE** service to retrieve objects from the database.
- Supports the **C-GET** service to retrieve objects from the database.

### 3.1.1.2 Number of associations

The number of simultaneous DICOM associations that is accepted is theoretically unlimited. A new process or a new thread is created for each new association.

### 3.1.1.3 Asynchronous nature

The **MIE-IAS** AE does not support asynchronous communication (multiple outstanding transactions over a single association).

### 3.1.2 Association acceptance policy for MIE-IAS AE

The **MIE-IAS** Application Entity accepts associations for the Verification Service, Storage Services, Query/Retrieve Services.

**MIE-IAS** rejects association requests from application of which the AE Title is not registered within **MIE-IAS**. The same applies to the case where the remote system uses a wrong AE Title to connect with **MIE-IAS**.

An association is closed when there is no activity (i.e., no message received) for a configurable amount of time.

#### 3.1.2.1 Verify Communication with a Remote System

The **MIE-IAS** Application Entity waits for an association request and accepts associations to do, among other things, the Verification Service. The association is aborted if an error occurs and is closed when the initiator requests that it be closed.

##### 3.1.2.1.1 Associated real-world activity

**MIE-IAS** performs an echo response after it receives a DICOM Echo request.

##### 3.1.2.1.2 Accepted Presentation Contexts

Only the presentation context listed in the following table will be accepted by **MIE-IAS** for the Verification SOP Class.

**Table5: Echo Response Presentation Contexts of MIE-IAS**

Presentation Context Table					
Abstract Syntax		Transfer Syntax			
Name	UID	Name	UID	Role	Extended Negotiation
Verification SOP Class	1.2.840.10008.1.1	All Transfer Syntaxes list in Table		SCP	None

### **3.1.2.1.3 SOP Specific Conformance**

**MIE-IAS** AE provides standard conformance to the DICOM Verification Service Class.

### **3.1.2.1.4 Presentation Context Acceptance Criterion**

The shown presentation context above is always accepted.

### **3.1.2.2 Receive Objects from a Remote System**

The **MIE-IAS** Application Entity waits for an association request and accepts associations to do, among other things, the Image Storage Service. The association is aborted if an error occurs and is closed when the initiator requests that it be closed.

#### **3.1.2.2.1 Associated real-world activity**

Once the association has been established, the **MIE-IAS** AE waits for transmission of conformant Storage Service messages. Objects received are decoded, most important attributes are stored in the database, and the file is store in a local folder.

#### **3.1.2.2.2 Accepted Presentation Contexts**

The presentation contexts that will be accepted by the **MIE-IAS** AE for the Receive Object operation are listed in following table:

**Table 6: Receive Object Presentation Contexts of MIE-IAS**

Presentation Context Table					
Abstract Syntax		Transfer Syntax			
Name	UID	Name	UID	Role	Extended Negotiation
See Note		Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian, JPEG baseline encoded	1.2.840.10008.1.2.4.50	SCP	None
		Explicit VR Little Endian, JPEG baseline encoded	1.2.840.10008.1.2.4.51	SCP	None
		Explicit VR Little Endian, JPEG lossless encoded	1.2.840.10008.1.2.4.70	SCP	None
		Explicit VR Little Endian, RLE lossless	1.2.840.10008.1.2.5	SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
RT Summary Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None

**Note1:** Include all abstract syntaxes from table 2, except those explicitly listed.

### 3.1.2.2.3 SOP Specific Conformance

The **MIE-IAS** AE conforms to the SOP's of the Storage SOP Class at Level 2 (Full). No elements are discarded or coerced by **MIE-IAS** AE. In addition private attributes will be stored and included when the object is sent out again.

The **MIE-IAS** AE responds to a C-STORE request with one of these response codes:

Table 7: C-STORE Response Codes

Service Status	Status Description	Status Code (0000,0900)	Related Fields
Failed	Unable to Process – A condition arose which prevented the processing of the request.	C0000	(0000,0901) (0000,0902)
Success		0000	None

### 3.1.2.2.4 Presentation context acceptance criterion

The shown presentation context above is always accepted.

### 3.1.2.2.5 Transfer syntax selection policies

The **MIE-IAS** AE selects the first proposed transfer syntax as soon as it is compatible with table 7.

### 3.1.2.3 Query the MIE-IAS Database and Retrieve Objects

The **MIE-IAS** Application Entity waits for an association request and accepts associations to do, among other things, the DICOM Query/Retrieve Service. The association is closed after an error or when the initiator requests that it be closed.

#### 3.1.2.3.1 Associated real-world activity

Once the association has been established, **MIE-IAS** waits for transmission of conformant Query Service messages. If a valid Find is received, then the **MIE-IAS** database is searched and the requested information is returned to the Query SCU. If a valid Move request is received, then the **MIE-IAS** database is searched for the requested objects and they are sent to the remote network node specified by the SCU. If a valid Get request is received, then the **MIE-IAS** database is searched for the requested objects and they are sent to the SCU.

#### 3.1.2.3.2 Accepted Presentation Contexts

The presentation contexts that will be accepted by the **MIE-IAS** AE for the Find operation are listed in following table:

Table 8: Query/Retrieve Response Presentation Contexts of MIE-IAS  
[ reference the transfer syntax list]

Presentation Context Table					
Abstract Syntax		Transfer Syntax			
Name	UID	Name	UID	Role	Extended Negotiation
Patient Root Query/Retrieve Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Query/Retrieve Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Query/Retrieve Model – GET	1.2.840.10008.5.1.4.1.2.1.3	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None
Study Root Query/Retrieve Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None
Study Root Query/Retrieve Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None
Study Root Query/Retrieve Model – GET	1.2.840.10008.5.1.4.1.2.2.3	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None

### 3.1.2.3.3 SOP Specific Conformance

**MIE-IAS** supports only hierarchical queries.

The following table identifies the match support used by the **MIE-IAS** AE. The values in this table indicate how the **MIE-IAS** AE processes the received query attribute data.

**Table 9: Matching Key Types**

Type Code	Meaning
S	Single value Matching
*	Wildcard value Matching
L	UID list Matching
R	Range Matching
U	Universal Matching
NONE	No Matching, Return Value Only

**MIE-IAS** AE supports the following elements for Query/Retrieve service. DICOM attributes not listed in these table are handled in that a zero-length attribute will be returned in response to a query for the specified attribute.



**Table 10: Supported keys for Patient Root Query/Retrieve**

Level Name	Attribute Name	TAG	VR	Types of Matching	Note
	SOP Common Specific Character Set	(0008,0005)	CS	NONE	
PATIENT	Patient's Name	(0010,0010)	PN	S,*,U	*1
	Patient ID	(0010,0020)	LO	S,*,U	
	Patient's Birth Data	(0010,0030)	DA	S,U	
	Patient's Sex	(0010,0040)	CS	S,U	
STUDY	Study Date	(0008,0020)	DA	S,R,U	
	Study Time	(0008,0030)	TM	R,U	
	Accession Number	(0008,0050)	SH	S,*,U	
	Study ID	(0020,0010)	SH	S,*,U	
	Study Instance UID	(0020,000D)	UI	S,U,L	
	Modalities in Study	(0008,0061)	CS	S,U	
	Referring Physician's Name	(0008,0090)	PN	NONE	
	Study Description	(0008,1030)	LO	NONE	
	Number of Study Related Series	(0020,1206)	IS	NONE	
	Number of Study Related Instances	(0020,1208)	IS	NONE	
SERIES	SOP Class UID	(0008,0016)	UI	NONE	
	Modality	(0008,0060)	CS	S,U	
	Series Description	(0008,103E)	LO	NONE	
	Body Part Examined	(0018,0015)	CS	NONE	
	Series Number	(0020,0011)	IS	S,U	
	Series Instance UID	(0020,000E)	UI	S,U,L	
	Number of Series Related Instances	(0020,1209)	IS	NONE	
INSTANCE	Instance Number	(0020,0060)	IS	S,U	
	SOP Instance UID	(0008,0018)	UI	S,U,L	
	Rows	(0028,0010)	US	NONE	
	Columns	(0028,0011)	US	NONE	
	Bits Allocated	(0028,0100)	US	NONE	
	Number of Frames	(0028,0008)	IS	NONE	

\*1: According to the setting of system, wild card (\*) can be automatically included into this item before and after like this (\*PatientName\*).

**Table 11: STUDY ROOT C-FIND SCP SUPPORTED ELEMENTS**

Level Name	Attribute Name	TAG	VR	Types of Matching	
	SOP Common Specific Character Set	(0008,0005)	CS	NONE	
STUDY	Patient's Name	(0010,0010)	PN	S,*,U	*1
	Patient ID	(0010,0020)	LO	S,*,U	
	Birth Date	(0010,0030)	DA	S,U	
	Patient's Sex	(0010,0040)	CS	S,U	
	Study Date	(0008,0020)	DA	S,R,U	
	Study Time	(0008,0030)	TM	R,U	
	Accession Number	(0008,0050)	SH	S,*,U	

	Study ID	(0020,0010)	SH	S,*,U	
	Study Instance UID	(0020,000D)	UI	S,U,L	
	Modalities in Study	(0008,0061)	CS	S,U	
	Referring Physician's Name	(0008,0090)	PN	NONE	
	Study Description	(0008,1030)	LO	NONE	
	Number of Study Related Series	(0020,1206)	IS	NONE	
	Number of Study Related Instances	(0020,1208)	IS	NONE	
SERIES	SOP Class UID	(0008,0016)	UI	NONE	
	Modality	(0008,0060)	CS	S,U	
	Series Description	(0008,103E)	LO	NONE	
	Body Part Examined	(0018,0015)	CS	NONE	
	Series Number	(0020,0011)	IS	S,U	
	Series Instance UID	(0020,000E)	UI	S,U,L	
	Number of Series Related Instances	(0020,1209)	IS	NONE	
INSTANCE	Instance Number	(0020,0060)	IS	S,U	
	SOP Instance UID	(0008,0018)	UI	S,U,L	
	Rows	(0028,0010)	US	NONE	
	Columns	(0028,0011)	US	NONE	
	Bits Allocated	(0028,0100)	US	NONE	
	Number of Frames	(0028,0008)	IS	NONE	

\*1: According to the setting of system, wild card (\*) can be automatically included into this item before and after like this (\*PatientName\*).

### C-FIND Response Codes

The **MIE-IAS** AE responds to a C-FIND request with one of these response codes:

Table 12: C-FIND Response Codes

Service Status	Status Description	Status Code (0000,0900)	Related Fields
Failed	<b>Unable to Process</b> – A condition arose which prevented the processing of the request.	C000	(0000,0901) (0000,0902)
Success	<b>Matching is complete</b> – No final identifier is supplied	0000	None

Table 13: C-MOVE Response Codes

Service Status	Status Description	Status Code (0000,0900)	Related Fields*
Failed	<b>Unable to Process</b> – A condition arose which prevented the processing of the request.	C803	(0000,0902)
Success	<b>Sub-operations complete</b> – No Failure	0000	None

\*Related fields:

(0000,0902): Contains a text description of the error detected.

### 3.1.2.3.4 Presentation Context Acceptance Criterion

The shown presentation contexts above are always accepted.

### 3.1.2.4 Storage Communication – Storage SCU

The **MIE-IAS** Application Entity initiate an association request and store DICOM images to a remote host.

### 3.1.2.4.1 Associated real-world activity

**MIE-IAS** can store all images in a disk folder or can store the images in study window.

### 3.1.2.4.2 Accepted Presentation Contexts

**Table 14: Transfer Syntax**

SOP Class UID	SOP Class Name
1.2.840.10008.1.2	Implicit VR Little Endian Transfer Syntax
1.2.840.10008.1.2.1	Explicit VR Little Endian Transfer Syntax
1.2.840.10008.1.2.2	Explicit VR Big Endian Transfer Syntax
1.2.840.10008.1.2.4.50	JPEG Baseline Transfer Syntax
1.2.840.10008.1.2.4.51	JPEG Extended Transfer Syntax
1.2.840.10008.1.2.4.57	JPEG Lossless, Non-Hierarchical Transfer Syntax
1.2.840.10008.1.2.4.70	JPEG Lossless, Non-Hierarchical, First-Order Prediction Transfer Syntax
1.2.840.10008.1.2.5	RLE Transfer Syntax

The presentation context listed in the following table will be accepted by **MIE-IAS**.

**Table15: Storage Presentation Contexts of MIE-IAS**

Presentation Context Table					
Abstract Syntax		Transfer Syntax			
Name	UID	Name	UID	Role	Extended Negotiation
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	All Transfer Syntaxes list in Table 14		SCU	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	All Transfer Syntaxes list in Table 14		SCU	None
Ultrasound Multi-frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.3	All Transfer Syntaxes list in Table 14		SCU	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	All Transfer Syntaxes list in Table 14		SCU	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	All Transfer Syntaxes list in Table 14		SCU	None
Nuclear Medicine Image Storage (retired)	1.2.840.10008.5.1.4.1.1.5	All Transfer Syntaxes list in Table 14		SCU	None

Ultrasound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	All Transfer Syntaxes list in Table 14	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	All Transfer Syntaxes list in Table 14	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	All Transfer Syntaxes list in Table 14	SCU	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	All Transfer Syntaxes list in Table 14	SCU	None
X-Ray Radifluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	All Transfer Syntaxes list in Table 14	SCU	None
X-Ray Angiographic Bi-plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	All Transfer Syntaxes list in Table 14	SCU	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	All Transfer Syntaxes list in Table 14	SCU	None
Positron Emission Tomography (PET) Image Storage	1.2.840.10008.5.1.4.1.1.128	All Transfer Syntaxes list in Table 14	SCU	None
Radiotherapy (RT) Image Storage	1.2.840.10008.5.1.4.1.1.481.1	All Transfer Syntaxes list in Table 14	SCU	None
Radiotherapy (RT) Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	All Transfer Syntaxes list in Table 14	SCU	None
Radiotherapy (RT) Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	All Transfer Syntaxes list in Table 14	SCU	None
Radiotherapy (RT) Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	All Transfer Syntaxes list in Table 14	SCU	None
Radiotherapy (RT) Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	All Transfer Syntaxes list in Table 14	SCU	None
Radiotherapy (RT) Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	All Transfer Syntaxes list in Table 14	SCU	None
Radiotherapy (RT) Summary Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.7	All Transfer Syntaxes list in Table 14	SCU	None
Digital X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.1	All Transfer Syntaxes list in Table 14	SCU	None
Digital X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	All Transfer Syntaxes list in Table 14	SCU	None

### 3.1.2.4.3 SOP Specific Conformance

**MIE-IAS** AE Upon receiving a C-STORE confirmation containing a successful status, this implementation will perform the next C-STORE operation. The association will be maintained if possible. Upon receiving a CSTORE confirmation containing an Error or a Refused status, this implementation will terminate the association. The current C-STORE operation is considered as failed.

### 3.1.2.5 Query/Retrieve Communication – Query/Retrieve SCU

#### 3.1.2.5.1 Associated real-world activity

The **MIE-IAS** Application Entity can query patients/studies/series/images from a remote host, and can retrieve images from the remote host.

#### 3.1.2.5.2 Accepted Presentation Contexts

**Table 16: Transfer Syntax**

SOP Class UID	SOP Class Name
1.2.840.10008.1.2	Implicit VR Little Endian Transfer Syntax
1.2.840.10008.1.2.1	Explicit VR Little Endian Transfer Syntax
1.2.840.10008.1.2.2	Explicit VR Big Endian Transfer Syntax
1.2.840.10008.1.2.4.50	JPEG Baseline Transfer Syntax
1.2.840.10008.1.2.4.51	JPEG Extended Transfer Syntax
1.2.840.10008.1.2.4.57	JPEG Lossless, Non-Hierarchical Transfer Syntax
1.2.840.10008.1.2.4.70	JPEG Lossless, Non-Hierarchical, First-Order Prediction Transfer Syntax
1.2.840.10008.1.2.5	RLE Transfer Syntax

The presentation context listed in the following table will be accepted by **MIE-IAS**.

**Table17: Query/Retrieve Presentation Contexts of MIE-IAS**

Presentation Context Table					
Abstract Syntax		Transfer Syntax			
Name	UID	Name	UID	Role	Extended Negotiation
Patient Root Query/Retrieve – FIND	1.2.840.10008.5.1.4.1.2.1.1	All Syntaxes Table 16	Transfer list in	SCU	None
Patient Root Query /Retrieve – MOVE	1.2.840.10008.5.1.4.1.2.1.2	All Syntaxes Table 16	Transfer list in	SCU	None

Study Root Query /Retrieve – FIND	1.2.840.10008.5.1.4.1.2.2.1	All Syntaxes Table 16	Transfer list in	SCU	None
Study Root Query /Retrieve – MOVE	1.2.840.10008.5.1.4.1.2.2.2	All Syntaxes Table 16	Transfer list in	SCU	None

### 3.1.2.5.3 SOP Specific Conformance for Query/Retrieve (FIND) SOP Class

This implementation performs a C-FIND operation over an association. The following required and optional keys are supported for C-FIND. The fields of Patient ID, Patient's Name, Study ID, Study Date, Accession Number and Study Description may be queried based on user specification. All other values for the fields are requested as part of the query.

**Table18: Patient Level Keys for Query/Retrieve Information Model**

Description	Element Tag	Query Key	Response	Note
Patient's Name	(0010,0010)	Yes	Need	
Patient ID	(0010,0020)	Yes	Need	
Patient Birth	(0010,0030)		Need	
Patient Sex	(0010,0040)		Need	

**Table19: Study Level Keys for Query/Retrieve Information Model**

Description	Element Tag	Query Key	Response	Note
Study ID	(0020,0010)		Need	
Study Date	(0008,0020)	Yes	Need	
Accession Number	(0008,0050)		Need	
Study Description	(0008,1050)		Need	
Study Instance UID	(0020,000D)	Yes	Need	

**Table20: Series Level Keys for Query/Retrieve Information Model**

Description	Element Tag	Query Key	Response	Note
Series Number	(0020,0011)		Need	
Modality	(0008,0060)	Yes	Need	
Series Description	(0008,103E)		Need	
Series Instance UID	(0020,000E)	Yes	Need	

**Table21: Instance Level Keys for Query/Retrieve Information Model**

<b>Description</b>	<b>Element Tag</b>	<b>Query Key</b>	<b>Response</b>	<b>Note</b>
Instance Number	(0020,0013)		Need	
SOP Instance UID	(0008,0018)	Yes	Need	

### **3.1.2.5.3 SOP Specific Conformance for Query/Retrieve (MOVE) SOP Class**

This implementation performs a C-MOVE operation over an association.

## **4 Communication Profiles**

### **4.1 Supported Communications Stacks**

**MIE-IAS** provides DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3.8.

### **4.2 TCP/IP Stack**

**MIE-IAS** inherits the TCP/IP stack from the MS Windows system upon which it executes.

### **4.3 Physical Media Support**

**MIE-IAS** is indifferent to the physical medium over which TCP/IP executes; they inherit this from the MS Windows system upon which they execute.