

# DICOM Conformance Statement

## FORUM

Version 2.5

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# 1 Conformance Statement Overview

This document is structured as suggested in the DICOM Standard (PS 3.2, 2009).

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
<b>Verification</b>		
Verification	Yes	Yes
<b>Transfer Image Storage Classes</b>		
Secondary Capture Image Storage	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	Yes	Yes
Raw Data Storage	Yes	Yes
Visible Light Endoscopic Image Storage	Yes	Yes
Visible Light Microscopic Image Storage	Yes	Yes
Visible Light Photographic Image Storage	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage	Yes	Yes
Ophthalmic Tomography Image Storage	Yes	Yes
<b>Transfer Video Image Storage Classes</b>		
Video Endoscopic Image Storage	Yes	Yes
Video Microscopic Image Storage	Yes	Yes
Video Photographic Image Storage	Yes	Yes
<b>Transfer Other Storage Classes</b>		
Encapsulated PDF Storage	Yes	Yes
<b>Query/Retrieve</b>		
Study Root Query/Retrieve Information Model – FIND	No	Yes
Study Root Query/Retrieve Information Model – MOVE	No	Yes
<b>Workflow Management</b>		
Modality Worklist Information Model - FIND	No	Yes
Storage Commitment Push Model	No	Yes

FORUM does not support Media Interchange.

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## 3 Introduction

### 3.1 Revision History

Document Version	Author	Date	Change
1.0	Gunther Wiest	2010-04-21	Initial revision for FORUM v2.5

### 3.2 Audience

This document is intended for hospital staff, health system integrators, software designers or implementers. The reader should have a basic understanding of DICOM.

### 3.3 Remarks

If another device matches this conformance statement based on the comparison with its own conformance statement, there is a chance, but no guarantee, that they interoperate. DICOM only deals with communication; it does not specify what is needed for certain applications to run on a device.

### 3.4 Definitions, Terms and Abbreviations

Abbreviation	Definition
AE	Application Entity
AET	Application Entity Title
DICOM	Digital Imaging and Communications in Medicine
ILE	Implicit Little Endian
IOD	Information Object Definition
JPG-1	JPEG Coding Process 1 transfer syntax; JPEG Baseline; ISO 10918-1
MWL	Modality Work List
MPG2	Motion Picture Expert Group 2; Abbreviation and synonym for video encoding and compression transfer syntax.
NB	Network Broker
RLE	Run Length Encoding
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair, pair of user and provider.
SW	Software
TCP/IP	Transmission Control Protocol / Internet Protocol
UID	Unique Identifier
VL	Visible Light

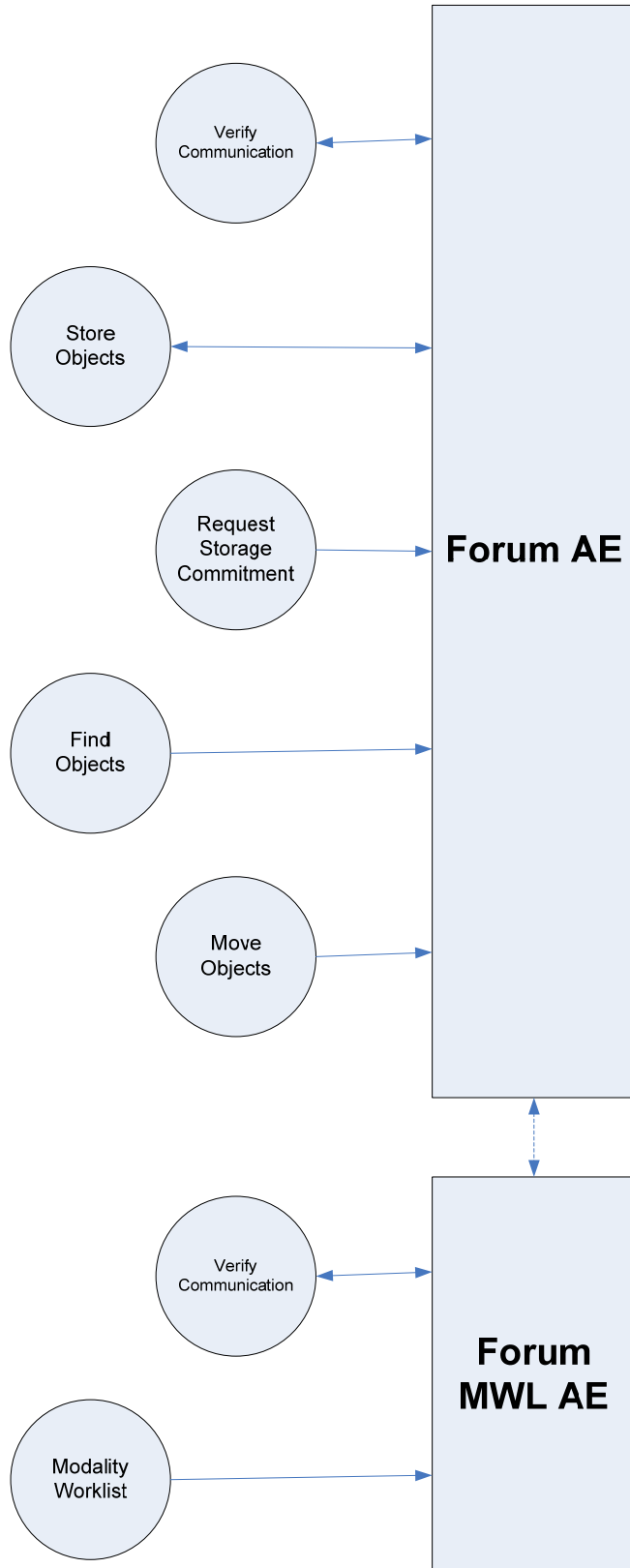
### 3.5 References

Digital Imaging and Communications in Medicine (DICOM), NEMA PS 3.1-3.18, 2009

## 4 Networking

### 4.1 Implementation Model

#### 4.1.1 Application Data Flow



The FORUM application can be configured in a way that the complete functionality is covered by one AE. The diagram above shows the configuration where Storage related activities and Worklist related activities are separate AEs.

## **4.1.2 Functional Definition of AEs**

### **4.1.2.1 Verification**

Both the FORUM AE and the FORUM MWL AE will respond to a DICOM C-Echo request from a remote AE in order to verify the communication.

The FORUM AE can also initiate an association and request verification to a remote AE.

### **4.1.2.2 Receive Images**

The FORUM AE stores a received image in its internal data storage. The FORUM AE stores each image with the File Meta Information attached to it.

The FORUM AE extracts the query information with respect to the patient, study, series, and instance, and stores this information in its internal index database.

### **4.1.2.3 Storage Commitment**

The FORUM AE acts as an SCP for Storage Commitment to take over the responsibility explicitly for storing received DICOM instances.

### **4.1.2.4 Query from other devices**

The FORUM AE responds to queries based on the information stored in its index database.

When a DICOM query request is received, the FORUM AE converts the request into a corresponding database query. The results of the database query are then returned to the remote AE.

### **4.1.2.5 Retrieve to other devices**

The FORUM AE acts as an SCP for C-Move requests to retrieve DICOM instances.

### **4.1.2.6 Store to other devices**

The FORUM AE acts as an SCU for C-Store requests to transmit DICOM instances to a remote DICOM AE.

### **4.1.2.7 Modality Worklist**

The FORUM MWL AE returns a Modality Worklist item in response to a request from a remote AE. In order to return a worklist item, the user of the FORUM MWL AE must schedule a patient using the MWL Scheduler UI. This information is cached in the local database.

When a DICOM MWL request is received, the FORUM MWL AE converts the request into a database query. The results of the database query are then returned via DICOM (as a MWL response) to the remote AE.

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## 4.2 AE Specifications

### 4.2.1 FORUM Application Entity Specification

#### 4.2.1.1 SOP Classes

SOP Class Name	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	Yes
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	No	Yes
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	Yes
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Yes	Yes
Visible Light Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes
Visible Light Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes
Visible Light Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	Yes
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	Yes
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	Yes	Yes
Patient Root Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.1.1	No	Yes
Study Root Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	No	Yes
Study Root Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	No	Yes
Storage Commitment Push Model	1.2.840.10008.1.20.1	No	Yes

#### 4.2.1.2 Associations Policies

##### 4.2.1.2.1 General

DICOM standard Application Context Name is DICOM 3.0.

Application Context Name	1.2.840.10008.3.1.1.1
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##### 4.2.1.2.2 Number of Associations

The FORUM SW can be configure to use either one AE or two separate AEs for Storage and Worklist related activities. The maximum number of association applies per AE.

Maximum number of simultaneous associations	50 per AE
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##### 4.2.1.2.3 Asynchronous Nature

FORUM does not support asynchronous communication (multiple outstanding transactions over a single Association).

##### 4.2.1.2.4 Implementation Identifying Information

Implementation Class UID	1.2.276.0.75.2.5.30
Implementation Version Name	FORUM 2.5

#### 4.2.1.3 Association Initiation Policy

##### 4.2.1.3.1 Activity - Verification (SCU)

###### 4.2.1.3.1.1 Description and Sequencing of Activities

The FORUM AE sends DICOM Verification requests when the user requests a test of validity of a DICOM connection through the GUI.

#### 4.2.1.3.1.2 Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	ILE	1.2.840.10008.1.2	SCU	No

#### 4.2.1.3.1.3 SOP Specific Conformance – Verification

The FORUM AE provides standard conformance to the DICOM Verification Service Class as an SCU.

### 4.2.1.3.2 Activity – Store Objects (SCU)

#### 4.2.1.3.2.1 Description and Sequencing of Activities

The FORUM AE will transmit instances either driven by user requests through the UI, by an automated forwarding mechanism or as reaction to a received C-MOVE request. The automatic forwarding can be configured by the user through the UI.

An association is established when the user or the forwarding mechanism initiates a transmit request.

The FORUM AE will establish an association automatically in response to a C-MOVE request.

#### 4.2.1.3.2.2 Proposed Presentation Contexts

The FORUM AE may request any of the Presentation Contexts listed in the following table for Storage. The FORUM AE will only propose the transfer syntax used when the object was initially accepted by the server.

Presentation Context Table					
Abstract Syntax	Transfer Syntax		Role	Ext. Neg.	
Name / UID	Name List	UID List			
All SOP classes listed in section "Transfer Image Storage Classes"	Implicit VR Little Endian Explicit VR Little Endian Explicit VR Big Endian RLE Lossless JPEG Baseline JPEG Lossless JPEG 2000 (Lossless Only) JPEG 2000 MPEG2 MPML MPEG2 MPHL	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2.5 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.4.90 1.2.840.10008.1.2.4.91 1.2.840.10008.1.2.4.100 1.2.840.10008.1.2.4.101	SCU	No	
All SOP classes listed in section "Transfer Video Image Storage Classes"	MPEG2 MPML MPEG2 MPHL	1.2.840.10008.1.2.4.100 1.2.840.10008.1.2.4.101	SCU	No	
All SOP classes listed in section "Transfer Other Storage Classes"	Implicit VR Little Endian Explicit VR Little Endian Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	No	

#### 4.2.1.3.2.3 SOP Specific Conformance – Store Objects

The FORUM AE provides limited Standard conformance to the DICOM Storage Service Class as an SCU: Neither is it guaranteed that the DICOM Default Transfer Syntax (Implicit VR Little Endian) is always proposed in a presentation context. Nor is an "on-the-fly" transcoding to the DICOM Default Transfer Syntax supported for instances received and stored in lossless compression.

A successful C-Store response status will not generate any actions.

### 4.2.1.4 Association Acceptance Policy

#### 4.2.1.4.1 Activity – Verification (SCP)

##### 4.2.1.4.1.1 Description and Sequencing of Activities

Both the FORUM AE and the FORUM MWL AE will respond to Verification requests to provide an SCU with the ability to determine if the respective AEs are able to receive and handle DICOM requests.

##### 4.2.1.4.1.2 Accepted Presentation Contexts

Presentation Context Table
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Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	ILE	1.2.840.10008.1.2	SCP	No

#### 4.2.1.4.1.3 SOP Specific Conformance – Verification

FORUM provides standard conformance to the DICOM Verification Service Class as an SCP. One of the following status codes are returned:

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	Operation performed properly.

Both the FORUM AE and the FORUM MWL AE will always accept a Presentation Context for the Verification SOP Class with the default DICOM transfer syntax.

#### 4.2.1.4.2 Activity – Store Objects (SCP)

##### 4.2.1.4.2.1 Description and Sequencing of Activities

The FORUM AE will store DICOM instances that are sent to it from a remote SCU. All images received by the FORUM AE can be retrieved at a later time from the FORUM AE.

##### 4.2.1.4.2.2 Accepted Presentation Contexts

Presentation Context Table				
Abstract Syntax	Transfer Syntax		Role	Ext. Neg.
Name / UID	Name List	UID List		
All SOP classes listed in section "Transfer Image Storage Classes"	Implicit VR Little Endian Explicit VR Little Endian Explicit VR Big Endian RLE Lossless JPEG Baseline JPEG Lossless JPEG 2000 (Lossless Only) JPEG 2000 MPEG2 MPML MPEG2 MPHL	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2 1.2.840.10008.1.2.5 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.4.90 1.2.840.10008.1.2.4.91 1.2.840.10008.1.2.4.100 1.2.840.10008.1.2.4.101	SCP	No
All SOP classes listed in section "Transfer Video Image Storage Classes"	MPEG2 MPML MPEG2 MPHL	1.2.840.10008.1.2.4.100 1.2.840.10008.1.2.4.101	SCP	No
All SOP classes listed in section "Transfer Other Storage Classes"	Implicit VR Little Endian Explicit VR Little Endian Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCP	No

##### 4.2.1.4.2.3 SOP Specific Conformance – Store Objects

The FORUM AE conforms to the DICOM Storage Service Class as a Level 2 (Full) SCP. No elements are discarded or coerced by the FORUM AE.

All Type 1, Type 2 and Type 3 attributes will be retained. Private attributes will be stored and included when the object is sent out later to a remote AE.

In case an instance is received with an SOP Instance UID (0008,0018) that is equal to an instance that is already present on the FORUM AE, the object will not be accepted.

One of the following Status codes are returned by the FORUM AE:

Service Status	Further Meaning	Error Code	Description
Refused	Out Of Resources	A700	Error while allocating enough storage space. Missing license for MPEG
	No Such SOP class	0118	If a SOP Class is used, which was not negotiated.
	Unrecognized Operation	0211	Unrecognized value in Command Filed
Error	Invalid Attribute Value	0106	Unsupported SOP Instance UID prefix.

			MpegFormatException
	Processing Failure	0110	Unexpected internal errors.
	Duplicate SOP instance	0111	SOP Instance UID is already present in this archive while a new C-STORE request is being processed.
	Invalid Object Instance	0117	The series of an incoming C-STORE request is already attached to another study.
	Missing Attribute Value	0121	An Instance UID is missing.
	SOP class Not Supported	0122	Incoming SOP Class is not supported by FORUM
	Unable To Process	C000	Unexpected internal errors.
Success	Success	0000	Operation performed properly.

The FORUM AE will accept any number of Presentation Contexts per association request. Any single Abstract Syntax may be specified more than once in an association request, if the Transfer Syntaxes differ between the Presentation Contexts.

Explicit VR Little Endian is preferred over Implicit VR Little Endian as the accepted Transfer Syntax when both Transfer Syntaxes are offered in a Presentation Context in an Associate Request.

For Verification, the FORUM AE will only accept association requests for known (configured) remote AEs.

#### 4.2.1.4.3 Activity – Request Storage Commitment (SCP)

##### 4.2.1.4.3.1 Description and Sequencing of Activities

The FORUM AE stores instances that are sent to it from a remote SCU. The request for Storage Commitment may then be transmitted to the FORUM AE together with a list of references to one or more DICOM SOP instances.

##### 4.2.1.4.3.2 Accepted Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Storage Commitment Push Model	1.2.840.10008.1.20.1	ILE	1.2.840.10008.1.2	SCP	No

##### 4.2.1.4.3.3 SOP Specific Conformance – Storage Commitment

The FORUM AE provides conformance to the DICOM Storage Commitment Service Class as an SCP.

The N-EVENT-REPORT message is always sent in a separate association from the N-ACTION operation.

For Storage Commitment operations, the FORUM AE will only accept association requests for known (configured) remote AEs.

#### 4.2.1.4.4 Activity – Find Objects (SCP)

##### 4.2.1.4.4.1 Description and Sequencing of Activities

The FORUM AE will respond to query requests that are sent to it by a remote SCU.

##### 4.2.1.4.4.2 Accepted Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Patient Root Q/R Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	ILE	1.2.840.10008.1.2	SCP	Yes
Study Root Q/R Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	ILE	1.2.840.10008.1.2	SCP	Yes

C-Find Extended Negotiation is supported: For the fields "Relational-queries" and "Date-time matching", the value "1" is returned, meaning that those are supported by the FORUM AE.

#### 4.2.1.4.4.3 SOP Specific Conformance – Find Objects

The FORUM AE provides standard conformance to the DICOM Query/Retrieve Service Class as an SCP.

The FORUM AE supports both Hierarchical Queries and the Relational-queries extended SCP behavior. Matching for PN VR attributes is always done case-insensitive.

The following tables contain detailed information on matching and returned keys.

##### Patient Root / Patient Level Attributes:

Description	Tag	Matching Type
Patient's Name	(0010,0010)	U S *
Patient ID	(0010,0020)	U S
Issuer of Patient ID	(0010,0021)	U S
Other Patient IDs	(0010,1000)	U S
Patient's Birth Date	(0010,0030)	U S R
Patient's Sex	(0010,0040)	U S
Ethnic Group	(0010,2160)	U S
Patient Comments	(0010,4000)	U S *

##### Patient Root / Study Level Attributes:

Description	Tag	Matching Type
Study Instance UID	(0020,000D)	U S
Study ID	(0020,0010)	U S
Accession Number	(0008,0050)	U S
Study Date	(0008,0020)	U CDT
Study Time	(0008,0030)	U CDT
Modalities in Study	(0008,0061)	U S
Referring Physician's Name	(0008,0090)	U S *
Study Description	(0008,1030)	U S *
Admitting Diagnoses Description	(0008,1080)	U S *

##### Study Root / Study Level Attributes:

Description	Tag	Matching Type
Study Instance UID	(0020,000D)	U S
Study ID	(0020,0010)	U S
Accession Number	(0008,0050)	U S
Study Date	(0008,0020)	U CDT
Study Time	(0008,0030)	U CDT
Modalities in Study	(0008,0061)	U S
Referring Physician's Name	(0008,0090)	U S *
Study Description	(0008,1030)	U S *
Admitting Diagnoses Description	(0008,1080)	U S *
Patient's Name	(0010,0010)	U S *
Patient ID	(0010,0020)	U S
Issuer of Patient ID	(0010,0021)	U S
Other Patient IDs	(0010,1000)	U S
Patient's Birth Date	(0010,0030)	U S R
Patient's Sex	(0010,0040)	U S
Ethnic Group	(0010,2160)	U S
Patient Comments	(0010,4000)	U S *

##### Series Level Attributes:

Description	Tag	Matching Type
Modality	(0008,0060)	U S
Series Number	(0020,0011)	U S
Series Instance UID	(0020,000E)	U S
Series Date	(0008,0021)	U CDT
Series Time	(0008,0031)	U CDT
Series Description	(0008,103E)	U S *
Laterality	(0020,0060)	U S
Number of Series Related Instances	(0020,1209)	return key only
Performing Physicians' Name	(0008,1050)	U S *
Manufacturer's Model Name	(0008,1090)	U S

##### Instance Level Attributes:

Description	Tag	Matching Type
Image Type	(0008,0008)	return key only
Instance Number	(0020,0013)	U S
SOP Instance UID	(0008,0018)	U S
SOP Class UID	(0008,0016)	U S
Instance Creation Date	(0008,0012)	U CDT
Instance Creation Time	(0008,0013)	U CDT
Acquisition Date Time	(0008,002A)	U CDT
Icon Image Sequence	(0088,0200)	return key only
Image Laterality	(0020,0062)	U S

Matching Types:

U – Universal Matching  
S – Single value Matching  
\* - Wildcard Matching  
R – Range Matching  
CDT – Combined Date Time Matching  
UNIQUE – Unique query key for that level

The FORUM AE returns one of the following status codes in a C-FIND response:

Service Status	Further Meaning	Error Code	Description
Refused	No Such SOP class	0118	If a SOP Class is used, which was not negotiated.
	Unrecognized Operation	0211	Unrecognized value in Command Filed
Failed	Invalid Attribute Value	0106	Wrong query retrieve level
	Processing Failure	0110	Unexpected internal errors.
	Unable To Process	C000	Unexpected internal errors.
Cancel		FE00	The original requester canceled this operation.
Pending	Pending	FF00	All Optional Keys are supported in the same manner as Required Keys.
Success	Success	0000	Operation performed properly.

For C-FIND operations, the FORUM AE will only accept association requests for known (configured) remote AEs.

#### 4.2.1.4.5 Activity – Move Objects (SCP)

##### 4.2.1.4.5.1 Description and Sequencing of Activities

The FORUM AE will respond to C-MOVE requests that are sent to it by a remote SCU.  
The FORUM AE will establish a new Association with the remote AE specified in the Move Destination for the C-STORE sub operation.  
The FORUM AE will always only propose the transfer syntax used when the object was initially sent to the server.

##### 4.2.1.4.5.2 Accepted Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Study Root Q/R Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	ILE	1.2.840.10008.1.2	SCP	No

##### 4.2.1.4.5.3 SOP Specific Conformance – Move Objects

The FORUM AE will establish an association with the destination specified in the C-MOVE request. One or more of the Presentation Contexts listed in chapter 4.2.1.4.2.2 may be negotiated in this association.

The FORUM AE returns one of the following status codes in a C-MOVE response:

Service Status	Further Meaning	Error Code	Description
Refused	No Such SOP class	0118	If a SOP Class is used, which was not negotiated.
	Unrecognized Operation	0211	Unrecognized value in Command Filed
Error	Processing Failure	0110	Unexpected internal errors.
	No Such Object Instance	0112	C-MOVE request for non existing SOP instance
	Unable To Process	C000	Unexpected internal errors.

Success	Success	0000	Operation performed properly.
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#### 4.2.1.4.6 Activity – Query Modality Worklist (SCP)

##### 4.2.1.4.6.1 Description and Sequencing of Activities

The FORUM MWL AE will respond to DICOM C-FIND requests in response to a remote AE querying for a Modality Worklist.

Before the FORUM MWL AE can respond to a DICOM Modality Worklist query, the integrated MWL Scheduler UI needs to be used by the user to schedule Procedure Steps.

##### 4.2.1.4.6.2 Accepted Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	ILE	1.2.840.10008.1.2	SCP	Yes

C-Find Extended Negotiation is supported: For the field "Date-time matching" the value "1" is returned, meaning that this is supported by the FORUM AE.

##### 4.2.1.4.6.3 SOP Specific Conformance – MWL

The FORUM MWL AE provides standard conformance to the DICOM Basic Worklist Management Service Class. The FORUM application can be configured to use only one AE for MWL and all the other described transactions.

The following table contains detailed information on matching and returned keys:

Description	Tag	Matching Type
Accession Number	(0008,0050)	U S
Requested Procedure ID	(0040,1001)	U S
Scheduled Procedure Step Sequence	(0040,0100)	
>Scheduled Station AE Title	(0040,0001)	U S
>Scheduled Procedure Step Start Date	(0040,0002)	U CDT
>Scheduled Procedure Step Start Time	(0040,0003)	U CDT
>Modality	(0008,0060)	U S
Patient's Name	(0010,0010)	U S *
Patient ID	(0010,0020)	U S
Issuer of Patient ID	(0010,0021)	U S
Patient's Birth Date	(0010,0030)	U S R
Patient's Sex	(0010,0040)	U S
Patient Comments	(0010,4000)	Patient Comments

The following table contains the supported return keys:

<b>Description</b>	<b>Tag</b>
Scheduled Procedure Step Sequence	(0040,0100)
>Scheduled Station AE Title	(0040,0001)
>Scheduled Procedure Step Start Date	(0040,0002)
>Scheduled Procedure Step Start Time	(0040,0003)
>Modality	(0008,0060)
>Scheduled Performing Physician's Name	(0040,0006)
>Scheduled Procedure Step Description	(0040,0007)
> Scheduled Protocol Code Sequence	(0040,0008)
>> Code Meaning	(0008,0104)
>> Code Value	(0008,0100)
>> Coding Scheme Designator	(0008,0102)
>> Coding Scheme Version	(0008,0103)
>Scheduled Procedure Step ID	(0040,0009)
Requested Procedure ID	(0040,1001)
Requested Procedure Description	(0032,1060)
Study Instance UID	(0020,000D)
Study Date (=Scheduled Procedure Step Start Date)	(0008,0020)
Study Time (=Scheduled Procedure Step Start Time)	(0008,0030)
Accession Number	(0008,0050)
Requesting Physician	(0032,1032)
Requested Procedure Code Sequence (=Scheduled Protocol Code Sequence)	(0032,1064)
> Code Meaning	(0008,0104)
> Code Value	(0008,0100)
> Coding Scheme Designator	(0008,0102)
> Coding Scheme Version	(0008,0103)
Referring Physician's Name	(0008,0090)
Patient's Name	(0010,0010)
Patient ID	(0010,0020)
Issuer of Patient ID	(0010,0021)
Patient's Birth Date	(0010,0030)
Patient's Sex	(0010,0040)
Other Patient IDs	(0010,1000)
Ethnic Group	(0010,2160)

The FORUM MWL AE returns one of the following status codes in a C-FIND response:

<b>Service Status</b>	<b>Further Meaning</b>	<b>Error Code</b>	<b>Description</b>
Refused	No Such SOP class	0118	If a SOP Class is used, which was not negotiated.
	Unrecognized Operation	0211	Unrecognized value in Command Filed
Failed	Processing Failure	0110	Unexpected internal errors.
	Unable To Process	C000	Unexpected internal errors.
Cancel		FE00	The original requester canceled this operation.
Pending	Pending	FF00	All Optional Keys are supported in the same manner as Required Keys.
Success	Success	0000	Operation performed properly.

Note:

MWL entries (Scheduled Procedure Steps) are removed from the FORUM MWL AE as soon as the first SOP Instance with the Study Instance UID from the respective Requested Procedure is received.

Furthermore MWL entries (Scheduled Procedure Steps) which are created via the "Automatic Order Functionality" or via the EMR Gateway are removed from the FORUM MWL AE at midnight.

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## **4.3 Network Interfaces**

### **4.3.1 Physical Network Interface**

The physical network interface is not visible for the applications. The application uses the communication stack as offered by the Operating System.

### **4.3.2 Additional Protocols**

No additional protocols are supported.

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## **4.4 Configuration**

### **4.4.1 AE Title/Presentation Address Mapping**

The translation from Application Entity Title to Presentation Address (TCP/IP address) is stored in the local database. Along with this mapping, the database stores those AE titles that are allowed to communicate with the FORUM AE and the FORUM MWL AW.

#### **4.4.1.1 Local AE Titles**

The IP is not configurable. The IP is administrated by the Operating System. The AE titles for the FORUM AE and the FORUM MWL AE is configurable.

The FORUM application can be configured to use only one AE for all transactions.

#### **4.4.1.2 Remote AE Titles**

The mapping of external AE Titles to TCP/IP addresses and ports is configurable.

## **5 Media Interchange**

Media Interchange is not scope of this document since Media Interchange is not supported by FORUM.

## 6 Support Of Character Sets

Supported Specific Character Set	
Character Set Description	Defined Term
Unicode	ISO_IR 192

## 7 Security

The DICOM capabilities of the FORUM Application do not support any specific security measures.

It is assumed that FORUM is used within a secured environment. It is assumed that a secured environment includes at a minimum:

- ❖ Firewall or router protections to ensure that only approved external hosts have network access to FORUM.
- ❖ Firewall or router protections to ensure that FORUM only has network access to approved external hosts and services.
- ❖ Any communication with external hosts and services outside the locally secured environment use appropriate secure network channels (e.g. such as a Virtual Private Network (VPN))

Other network security procedures such as automated intrusion detection may be appropriate in some environments. Additional security features may be established by the local security policy and are beyond the scope of this conformance statement.

## 8 Annexes

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### 8.1 IOD Contents

#### 8.1.1 Created SOP Instance(s)

FORUM does not create instances.

#### 8.1.2 Usage Of Attributes From Received IOD's

#### 8.1.3 Attribute Mapping

#### 8.1.4 Coerced/Modified Files

No coercion of elements is done by FORUM.

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### 8.2 Data Dictionary of Private Attributes

FORUM does not use any own private attributes.

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### 8.3 Private Transfer Syntaxes

No Private Transfer Syntaxes are supported.