

DICOM Conformance Statement
for
IMAGEnet 5

Ver.1.0

2013/6/3

TOPCON Corporation

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1. Foreword

This document declares conformance to DICOM V3.0 for IMAGENet 5.

1.1. References

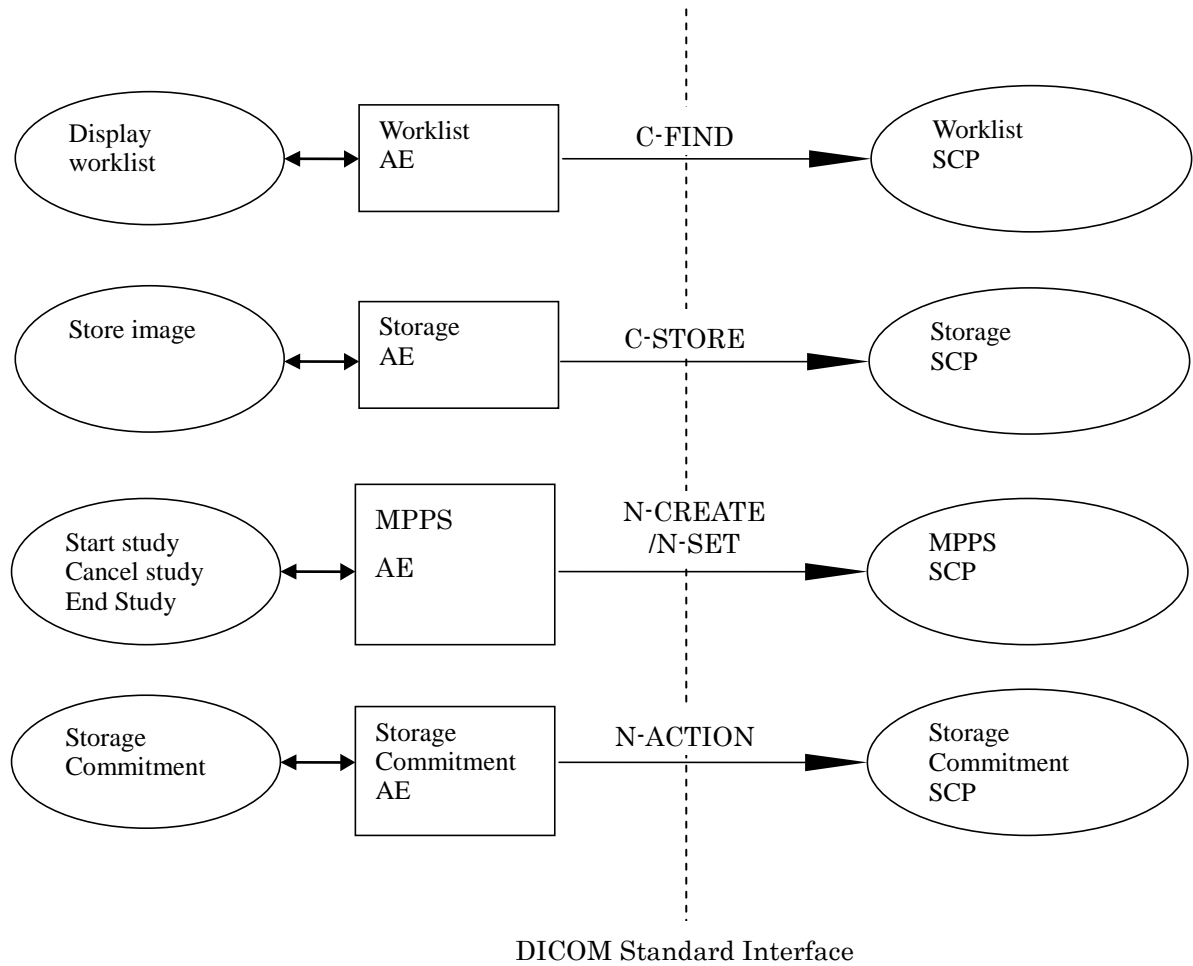
- ACR-NEMA DICOM (Digital Imaging and Communication in Medicine)

1.2. Abbreviations

- ACR American College of Radiology
- ASCII American Standard Code for Information Interchange
- AE Application Entity
- ANSI American National Standards Institute
- DICOM Digital Imaging and Communication in Medicine
- DIMSE DICOM Message Service Element
- DIMSE-C DICOM Message Service Element-Composite
- DIMSE-N DICOM Message Service Element-Normalized
- IE Information Entity
- IOD Information Object Definition
- ISO International Standards Organization
- NEMA National Electrical Manufacture 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

2. Implementation Model

2.1. Application Data Flow Diagram



2.2. AE Function Definition

2.2.1. Storage AE

Storage AE corresponds to VL, SC, and OP modality. Image transmission starts if an association request is sent to a transmission destination AE and the association negotiation succeeds.

2.2.2. Worklist AE

The Worklist AE receives all worklists when an association with a remote AE is established.

The results are listed.

2.2.3. Modality Performed Procedure Step AE

Modality Performed Procedure Step AE will notify an inspection start, inspection cancel, and the end of inspection, if an association is established with a remote AE.

2.2.4. Storage Commitment AE

Storage commitment AE will notify a storage commitment demand, if an association is established with a remote AE.

3. AE Specifications

3.1. Worklist AE

As shown below, the Worklist AE provides standard conformance as an SCU of the DICOM V3.0 SOP class:

Table 1 SOP Class for Worklist AE

SOP Class Name	SOP Class UID
Modality Worklist Information Model-FIND	1.2.840.10008.5.1.4.31

3.1.1. Association Policy of Worklist AE

3.1.1.1. Overview of Worklist AE

The Worklist AE uses an application context name.

Table 2 DICOM Application Context for Worklist AE

DICOM V3.0 Application Context	1.2.840.10008.3.1.1.1
--------------------------------	-----------------------

3.1.1.2. Number of Associations

The Worklist AE can establish only one association simultaneously.

3.1.1.3. Asynchronous Nature

Since the Worklist AE allows only a single operation for an association, asynchronous operation is not supported.

3.1.1.4. Implementation Identifying Information

The Worklist AE specifies the following implementation identifying information.

Implementation class UID	1.2.392.200106.1651.4.1
Implementation version name	TOPCON_MWL-SCU

3.1.1.4.1. Proposed Presentation Context

The presentation context proposed by the Worklist AE is as follows:

Table 3 Proposed Presentation Context for Worklist AE

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Modality Worklist Information Model-FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

3.1.1.4.1.1. SOP Specific Conformance

The Worklist AE determines that image transfer has succeeded when data communication succeeds even if association release fails.

The following explains the worklist request identifier for IMAGENet.

The description of each item is shown below:

- Description: Worklist attribute name
- Tag: Attribute DICOM tag
- Matching: Search key for updating the worklist. "S" provides an attribute for a single inspection.
 "*" indicates a wildcard search.
- Return key: "o" indicates a key that IMAGENet responds to.
- Display key: "o" indicates a key that IMAGENet displays to indicate patients.

Table 4 SOP in Common

Description	Tag	Matching	Return	Display
SOP Class UID	(0008,0016)			
Specific Character Set	(0008,0005)			

Table 5 Reserved Procedure Step

Description	Tag	Matching	Return	Display
Scheduled Procedure Step Sequence	(0040,0100)			
>Scheduled Station AE Title	(0040,0001)	S	o	o
>Scheduled Procedure Step Start Date	(0040,0002)	S	o	o
>Scheduled Procedure Step Start Time	(0040,0003)		o	o
>Modality	(0008,0060)	S	o	o
>Scheduled Performing Physicians Name	(0040,0006)			
>Scheduled Procedure Step Description	(0040,0007)		o	o
>Scheduled Station Name	(0040,0010)			
>Scheduled Procedure Step Location	(0040,0011)			
>Scheduled Action Item Code Sequence	(0040,0008)			
>>Code Value	(0008,0100)			
>>Coding Scheme Designator	(0008,0102)			
>>Coding Scheme Version	(0008,0103)			
>>Coding Meaning	(0008,0104)			
>Pre-Medication	(0040,0012)			
>Scheduled Procedure Step ID	(0040,0009)	S		
>Requested Contrast Agent	(0032,1070)			
>Scheduled Procedure Step Status	(0040,0020)			

Table 6 Requested Procedure

Description	Tag	Matching	Return	Display
Requested Procedure ID	(0040,1001)		o	o
Requested Procedure Description	(0032,1060)		o	o
Requested Procedure Code Sequence	(0032,1064)			
>Code Value	(0008,0100)			
>Coding Scheme Designator	(0008,0102)			
>Coding Meaning	(0008,0104)			
Study Instance UID	(0020,000D)		o	o
Study Date	(0008,0020)			
Study Time	(0008,0030)			
Requested Procedure Priority	(0040,1003)			
Patient Transport Arrangements	(0040,1004)			

Table 7 Image List Service

Description	Tag	Matching	Return	Display
Accession Number	(0008,0050)	S*	○	○
Requesting Physician	(0032,1032)		○	○
Referring Physicians Name	(0008,0090)		○	○
Requesting Service	(0032,1033)	S*	○	○

Table 8 Hospital Visiting Identification

Description	Tag	Matching	Return	Display
Admission ID	(0038,0010)			

Table 9 Hospital Visiting Status

Description	Tag	Matching	Return	Display
Current Patient Location	(0038,0300)			

Table 10 Patient Identification

Description	Tag	Matching	Return	Display
Patient Name	(0010,0010)	S*	○	○
Patient ID	(0010,0020)	S	○	○
Other Patient IDs	(0010,1000)		○	○

Table 11 Patient Statistics

Description	Tag	Matching	Return	Display
Patient Birth Date	(0010,0030)		○	○
Patient Sex	(0010,0040)		○	○
Patient Weight	(0010,1030)			
Ethnic Group	(0010,2160)		○	○
Confidentiality Constraint On Patient Data	(0040,3001)			

Table 12 Patient Medical Examination and Treatment

Description	Tag	Matching	Return	Display
Patient State	(0038,0500)			
Pregnancy Status	(0010,21C0)			
Medical Alerts	(0010,2000)			
Contrast Allergies	(0010,2110)			
Special Needs	(0038,0050)			

3.1.1.4.2. Association Receiving Policy

The Worklist AE does not receive the association initiated by a remote AE.

3.2. Storage AE

As shown below, the storage AE provides standard conformance as an SCU of the DICOM V3.0 SOP class:

Table 13 SOP Class for Storage AE

SOP Class Name	SOP Class UID
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4
SC Image Storage	1.2.840.10008.5.1.4.1.1.7
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1

3.2.1. Storage AE Association Policy

3.2.1.1. Overview of Storage AE

The Storage AE uses an application context name.

Table 14 DICOM Application Context for Storage AE

DICOM V3.0 Application Context	1.2.840.10008.3.1.1.1
--------------------------------	-----------------------

Maximum PDU of the Storage AE can be specified.

3.2.1.2. Number of Associations

The Storage AE can establish only one association simultaneously.

3.2.1.3. Asynchronous Nature

Since the Storage AE allows only a single operation for an association, asynchronous operation is not supported.

3.2.1.4. Implementation Identifying Information

The Storage AE specifies the following Implementation Identifying Information:

Implementation class UID	1.2.392.200106.1651.4.2
Implementation version name	TOPCON_STO-SCU

3.2.2. Starting Association in Real-World Activity

The Storage AE starts association when a request is made to transfer an image to a remote DICOM device.

3.2.2.1. Real-World Activity Storage AE

Image storage request is queued by IMAGENet and storage is executed.

3.2.2.1.1. Proposed Presentation Context

The presentation contexts proposed by AE are as follows:

Table 15 Presentation Contexts Proposed to Worklist AE

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		JPEG Baseline Lossy Compression (*1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEG lossless, Non-Hierarchical, First-Order Prediction (*2)	1.2.840.10008.1.2.4.70	SCU	None
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		JPEG Baseline Lossy Compression (*1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEG lossless, Non-Hierarchical, First-Order Prediction (*2)	1.2.840.10008.1.2.4.70	SCU	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5 .1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		JPEG Baseline Lossy Compression (*1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEG lossless, Non-Hierarchical, First-Order Prediction (*2)	1.2.840.10008.1.2.4.70	SCU	None

(*1) JPEG Baseline (Process 1)

(*2) JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])

3.2.2.1.1.1. SOP Specific Conformance

The Storage AE determines that image transfer has succeeded when data communication succeeds even if association release fails.

3.2.2.1.2. Association Receiving Policy

The Storage AE does not receive the association initiated by a remote AE.

3.3. Modality Performed Procedure Step AE

The following Modality Performed Procedure Step AE provides standard conformity as SCU of DICOM V3.0 SOP class.

Table 16 SOP corresponding to class Modality Performed Procedure Step AE

SOP Class Name	SOP Class UID
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3

3.4. Association plan of Modality Performed Procedure Step AE

3.5. Outline of Modality Performed Procedure Step AE

Modality Performed Procedure Step AE use application context.

Table 17 DICOM application context corresponding to Modality Performed Procedure Step AE

DICOM V3.0 application context	1.2.840.10008.3.1.1.1
--------------------------------	-----------------------

3.5.1.1. Number of associations

Modality Performed Procedure Step AE can establish only one association simultaneously.

3.5.1.2. Asynchronous

Modality Performed Procedure Step AE permits only a single operation to an association. Therefore, asynchronous operation is not supported.

3.5.1.3. Implemented discernment information

Modality Performed Procedure Step AE specifies the following implemented discernment information:

Implemented class UID	1.2.392.200106.1651.4.3
Implemented version name	TOPCON_MPPS-SCU

3.5.2. The start of the association in real space activity

When there is a request to send a start / cancel / end of the inspection to a remote DICOM device, Modality Performed Procedure Step AE starts an association.

3.5.2.1.1. Layout of presentation context

Modality Performed Procedure Step AE presents the following presentation context.

Table 18 Layout of presentation context corresponding to Modality Performed Procedure Step AE.

Name	Abstract Syntax	Transfer Syntax		Role	Extended Negotiation
	UID	Name List	UID List		
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

3.5.2.1.1.1. SOP specific conformity

Even if the release of an association fails, when the result of data communications is successful, the Modality Performed Procedure Step AE judges that the start / cancel / end of inspection transmission was successful.

The explanation for the demand identifier of Modality Performed Procedure Step is as follows:

Table 19 Common SOP

Attribute Name	Tag	Req. Type N-CR EATE/ N-SET	Attribute Description
SOP Class UID	(0008,0016)	1/1	The value created by IMAGEnet. / The value created by IMAGEnet.
SOP Instance UID	(0008,0018)	1/1	The value created by IMAGEnet. / The value created by IMAGEnet.

Table 20 Modality Performed Procedure Step Relations

Attribute Name	Tag	Req. Type N-CR EATE/ N-SET	Attribute Description
Patient's Name	(0010,0010)	2/-	The value acquired from modality worklist or IMAGEnet database. / No value
Patient ID	(0010,0020)	2/-	The value acquired from modality worklist or IMAGEnet database. / No value
Patient's Birth Date	(0010,0030)	2/-	The value acquired from modality worklist or IMAGEnet database. / No value
Patient's Sex	(0010,0040)	2/-	The value acquired from modality worklist or IMAGEnet database. / No value
Scheduled Step Attribute Sequence	(0040,0270)	1/-	The value acquired from modality worklist or IMAGEnet database. / No value
>Study Instance UID	(0020,000D)	1/1	The value acquired from modality worklist or created by IMAGEnet.
>Accession Number	(0008,0050)	2/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value
>Placer Order Number/Imaging Service Request	(0040,2016)	3/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value
>Filler Order Number/Imaging Service Request	(0040,2017)	3/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value
>Requested Procedure ID	(0040,1001)	2/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value
>Requested Procedure Description	(0032,1060)	2/-	The value acquired from modality worklist. Or when it does not exist,

			no value. / No value
>Scheduled Procedure Step ID	(0040,0009)	2/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value
>Scheduled Procedure Step Description	(0040,0007)	2/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value

Table 21 Modality Performed Procedure Step Information

Attribute Name	Tag	Req. Type N-CR EATE/ N-SET	Attribute Description
Performed Station AE Title	(0040,0241)	1/-	Preset value. / No value.
Performed Station Name	(0040,0242)	2/-	Preset value. / No value.
Performed Procedure Step Start Date	(0040,0244)	1/-	The value created by IMAGE.net. / No value.
Performed Procedure Step Start Time	(0040,0245)	1/-	The value created by IMAGE.net. / No value.
Performed Procedure Step ID	(0040,0253)	1/-	The value created by IMAGE.net. / No value.
Performed Location	(0040,0243)	2/-	No value. / No value.
Performed Procedure Step End Date	(0040,0250)	-/3	No value. / The value created by IMAGE.net.
Performed Procedure Step End Time	(0040,0251)	-/3	No value. / The value created by IMAGE.net.
Performed Procedure Step Status	(0040,0252)	1/1	IN PROGRESS / COMPLETED or DISCONTINUED
Procedure Code Sequence	(0008,1032)	2/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Code Value	(0008,0100)	1C/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Coding Scheme Designator	(0008,0102)	1C/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Coding Scheme Version	(0008,0103)	3/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Code Meaning	(0008,0104)	3/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Mapping Resource	(0008,0105)	1C/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Context Group Version	(0008,0106)	1C/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Context Group Local Version	(0008,0107)	1C/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.
>Context Group Extension Creator UID	(0008,010D)	1C/-	The value acquired from modality worklist. Or when it does not exist, no value. / No value.

Table 22 Image collection results

Attribute Name	Tag	Req. Type N-CR EATE/ N-SET	Attribute Description
Modality	(0008,0060)	1/-	Preset value. / No value.
Study ID	(0020,0010)	2/-	The value created by IMAGEnet. / No value.
Performed Action Item Code Sequence	(0040,0260)	2/3	No value. / No value.
>Code Value	(0008,0100)	1/1	No value. / The value acquired from modality worklist. Or the setting value of IMAGEnet. When it does not exist, no value.
>Coding Scheme Designator	(0008,0102)	1/1	No value. / The value acquired from modality worklist. Or the setting value of IMAGEnet. When it does not exist, no value.
>Coding Scheme Version	(0008,0103)	3/3	No value. / No value
>Code Meaning	(0008,0104)	3/3	No value. / The value acquired from modality worklist. Or the setting value of IMAGEnet. When it does not exist, no value.
Performed Series Sequence	(0040,0340)	-/3	No value. / No value.
>Series Instance UID	(0020,000E)	-/1C	No value. / The value created by IMAGEnet.
>Referenced Image Sequence	(0008,1140)	-/1C	No value. / No value.
>>Referenced SOP Class UID	(0008,1150)	-/1	No value. / The value created by IMAGEnet.
>>Referenced SOP Instance UID	(0008,1155)	-/1	No value. / The value created by IMAGEnet.

3.5.2.1.2. A receiving policy of association

Modality Performed Procedure Step does not receive the association generated from a remote AE.

3.6. Storage commitment AE

Storage commitment AE provides the following standard conformity as the DICOM V3.0 SOP class of the SCU:

Table 23 SOP class corresponding to storage commitment AE

SOP Class Name	SOP Class UID
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1

3.6.1. Association policy for Storage commitment AE

3.6.1.1. Outline of storage commitment AE

Storage commitment AE uses application context name.

Table 24 DICOM application context corresponding to storage commitment AE

DICOM V3.0 application context	1.2.840.10008.3.1.1.1
--------------------------------	-----------------------

3.6.1.2. Number of associations

Storage commitment AE can establish only one association simultaneously.

3.6.1.3. Asynchronous Nature

Since the storage commitment AE allows only a single operation for an association, asynchronous operation is not supported.

3.6.1.4. Implementation Identifying Information

The storage commitment AE specifies the following implementation identifying information:

Implementation class UID	1.2.392.200106.1651.4.4
Implementation version name	TOPCON_COM-SCU

3.6.2. The start of the association in real space activity

When there is a storage commitment request to a remote DICOM device, storage commitment AE starts an association.

3.6.2.1.1. Proposed Presentation Context

The presentation context proposed by the storage commitment AE is as follows:

Table 25 Proposed Presentation Context Corresponding to Storage Commitment AE

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

3.6.2.1.1.1. SOP specific conformity

If transmission of a storage commitment demand is successful, the storage commitment AE will receive a storage commitment result, and will receive a notification of the storage commitment success or failure.

The following is an explanation of the storage commitment identifier of IMAGEnet:

Table 26 Common SOP

Attribute Name	Tag	Type	Attribute Description
SOP Class UID	(0008,0016)	1	The value created by IMAGEnet.
SOP Instance UID	(0008,0018)	1	The value created by IMAGEnet.

Table 27 Storage commitment demand

Attribute Name	Tag	Type	Attribute Description
Transaction UID	(0008,1195)	1	The value created by IMAGEnet
Referenced SOP Sequence	(0008,1199)	1	The valued acquired from storage which performs the storage commitment.
>Referenced SOP Class UID	(0008,1150)	1	The valued acquired from storage which performs the storage commitment.
>Referenced SOP Instance UID	(0008,1155)	1	The valued acquired from storage which performs the storage commitment.

4. Communication Policy

4.1. Communication Protocol

Only TCP/IP is supported.

4.2. TCP/IP

An AE depends on the TCP/IP of the Windows system in which the AE is executed.

4.3. Support of Physical Network Medium

For AE, it is not important in which physical network medium the TCP/IP is executed. This is because it depends on the computer system where the physical network medium is executed.

5. Data Dictionary for a Private Attribute

A private attribute is not supported.

6. Standard Extended/Specialized/Private SOPs

Standard Extended/Specialized/Private SOPs are not supported.

7. Configuration

7.1. AE Title/Presentation Address Mapping

An AE title can be specified for an SCP and an SCU.

One port number and one SCP AE title can be specified for each SCP.

7.2. Parameters

Many parameters for general operation can be configured using a configuration user interface. The following shows the configurable parameters for DICOM communication:

Table 28 Parameters

	Parameter	Description
Common	Presentation Context: Abstract Syntax	VL, SC, OP
	Other names for SC	-
	Presentation Context: Transfer Syntax	Implicit VR Little Endian, Explicit VR Little Endian, JPEG lossless, Non-Hierarchical, First-Order Prediction JPEG Baseline Lossy Compression
Worklist	SCP AE Title	Default: MWL
	SCP IP Address	Default: 10.10.10.10
	SCP Port Number	Default: 105
	SCU AE Title	Default: CLIENT1
	Time Out Value (sec)	Default: 15
Storage	SCP AE Title	Default: STORAGE_SERVER
	SCP IP Address	Default: 10.10.10.10
	SCP Port Number	Default: 104
	SCU AE Title	Default: CLIENT1
	Maximum PDU Size (byte)	Default: 10000
	Time Out Value (sec)	Default: 15
	Presentation Context: Abstract Syntax	VL, SC, OP
	Other names for SC	-
Modality Performed Procedure Step	SCP AE title	Default : MPPS
	SCP IP address	Default : 10.10.10.10
	SCP port number	Default : 108
	SCU AE title	Default : CLIENT1
	Time out value(sec)	Default : 15
Storage Commitment	SCP AE title	Default : Commitment
	SCP IP address	Default : 10.10.10.10
	SCP port number	Default : 107
	SCU AE title	Default : CLIENT1
	SCU port number	Default : 0
	Time out value(sec)	Default : 15

8. Support of Character Sets

An AE supports the following character codes:

ISO-IR 6 (default)

9. Information Object Definition

The following shows IODs and modules defined in IMAGEnet.

9.1. IOD lists

9.1.1. VL Photographic Image IOD

Table 29 VL Photographic Image IOD

Information Entity	Module	Reference	Usage ^{*1}
Patient	Patient	9.2.1	M
Study	General Study	9.2.2	M
Series	General Series	9.2.3	M
Equipment	General Equipment	9.2.6	M
Image	General Image	9.2.7	M
	Image Pixel	9.2.8	M
	Acquisition Context	9.2.9	M
	VL Image	9.2.12	M
	SOP Common	9.2.10	M

*1: M=Mandatory, C=Conditional, U=User option

9.1.2. SC Image IOD

Table 30 SC Image IOD

Information Entity	Module	Reference	Usage ^{*1}
Patient	Patient	9.2.1	M
Study	General Study	9.2.2	M
Series	General Series	9.2.3	M
Equipment	General Equipment	9.2.6	U
	SC Equipment	9.2.11	M
Image	General Image	9.2.7	M
	Image Pixel	9.2.8	M
	SC Image	9.2.13	M
	SOP Common	9.2.10	M

*1: M=Mandatory, C=Conditional, U=User option

9.1.3. Ophthalmic Photography 8-Bit Image IOD

Table 31 Ophthalmic Photography 8-Bit Image IOD

Information Entity	Module	Reference	Usage ^{*1}
Patient	Patient	9.2.1	M
Study	General Study	9.2.2	M
Series	General Series	9.2.3	M
	Ophthalmic Photography Series	9.2.4	M
Frame Of Reference	Synchronization	9.2.5	M
Equipment	General Equipment	9.2.6	M
Image	General Image	9.2.7	M
	Image Pixel	9.2.8	M
	Enhanced Contrast / Bolus	9.2.20	C
	Cine	9.2.14	C
	Multi Frame	9.2.15	M
	Ophthalmic Photography Image	9.2.16	M
	Ocular Region Imaged	9.2.17	M
	Ophthalmic Photography Acquisition Parameters	9.2.18	M
	Ophthalmic Photographic Parameters	9.2.19	M
	SOP Common	9.2.10	M

*1: M=Mandatory, C=Conditional, U=User option

9.2. Module Lists

9.2.1. Patient Module

Table 32 Patient

Attribute Name	Tag	Type	Attribute Description
Patient's Name	(0010,0010)	2	A value obtained from a modality worklist or a value of the IMAGEnet database.
Patient ID	(0010,0020)	2	A value obtained from a modality worklist or a value of the IMAGEnet database.
Patient's Birth Date	(0010,0030)	2	A value obtained from a modality worklist or a value of the IMAGEnet database.
Patient's Sex	(0010,0040)	2	A value obtained from a modality worklist or a value of the IMAGEnet database.
Other Patient IDs	(0010,1000)	3	A value obtained from a modality worklist or a value of the IMAGEnet database.
Ethnic Group	(0010,2160)	3	A value obtained from a modality worklist or a value of the IMAGEnet database.

9.2.2. General Study Module

Table 33 General Study

Attribute Name	Tag	Type	Attribute Description
Study Instance UID	(0020,000D)	1	A value obtained from a worklist or created by IMAGEnet.
Study Date	(0008,0020)	2	A value created by IMAGEnet.
Study Time	(0008,0030)	2	A value created by IMAGEnet.
Referring Physician's Name	(0008,0090)	2	A value obtained from a modality worklist. No value if none exists.
Study ID	(0020,0010)	2	No value in the case of Study Instance UID obtained from a modality worklist.
Accession Number	(0008,0050)	2	A value obtained from a modality worklist. No value if none exists.
Study Description	(0008,1030)	3	Setting value

9.2.3. General Series Module

Table 34 General Series

Attribute Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	Setting value
Series Instance UID	(0020,000E)	1	A value created by IMAGEnet.
Series Number	(0020,0011)	2	A value created by IMAGEnet.
Laterality	(0020,0060)	2C	R, L or B
Series Description	(0008,103E)	3	Setting value

9.2.4. Ophthalmic Photography Series Module

Table 35 Ophthalmic Photography Series

Attribute Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	OP

9.2.5. Synchronization Module

Table 36 Synchronization

Attribute Name	Tag	Type	Attribute Description
Synchronization Frame of Reference UID	(0020,0200)	1	A value created by IMAGEnet.
A value created by the IMAGEnet.Synchronization Trigger	(0018,106A)	1	NO TRIGGER
Acquisition Time Synchronized	(0018,1800)	1	N

9.2.6. General Equipment Module

Table 37 General Equipment

Attribute Name	Tag	Type	Attribute Description
Manufacturer	(0008,0070)	2	Setting value
Institution Name	(0008,0080)	3	Setting value
Station Name	(0008,1010)	3	Setting value
Institutional Department Name	(0008,1040)	3	Setting value
Manufacturer's Model Name	(0008,1090)	3	Setting value
Software Versions	(0018,1020)	3	Setting value

9.2.7. General Image Module

Table 38 General Image

Attribute Name	Tag	Type	Attribute Description
Instance Number	(0020,0013)	2	A value created by IMAGEnet.
Content Date	(0008,0023)	2C	A value created by IMAGEnet.
Content Time	(0008,0033)	2C	A value created by IMAGEnet.
Acquisition Date	(0008,0022)	3	Same as Content Date
Acquisition Time	(0008,0032)	3	Same as Content Time

9.2.8. Image Pixel Module

Table 39 Image Pixel

Attribute Name	Tag	Type	Attribute Description
Sample per Pixel	(0028,0002)	1	A value created by IMAGEnet.
Photometric Interpretation	(0028,0004)	1	A value created by IMAGEnet.
Rows	(0028,0010)	1	A value created by IMAGEnet.
Columns	(0028,0011)	1	A value created by IMAGEnet.
Bits Allocated	(0028,0100)	1	A value created by IMAGEnet.
Bits Stored	(0028,0101)	1	A value created by IMAGEnet.
High Bit	(0028,0102)	1	A value created by IMAGEnet.
Pixel Representation	(0028,0103)	1	A value created by IMAGEnet.
Pixel Data	(7FE0,0010)	1	A value created by IMAGEnet.
Planar Configuration	(0028,0006)	1C	A value created by IMAGEnet.

9.2.9. Acquisition Context Module

Table 40 Acquisition Context

Attribute Name	Tag	Type	Attribute Description
Acquisition Context Sequence	(0040,0555)	2	No value

9.2.10. SOP Common Module

Table 41 SOP Common

Attribute Name	Tag	Type	Attribute Description
SOP Class UID	(0008,0016)	1	A value created by IMAGEnet.
SOP Instance UID	(0008,0018)	1	A value created by IMAGEnet.

9.2.11. SC Equipment Module

Table 42 SC Equipment

Attribute Name	Tag	Type	Attribute Description
Conversion Type	(0008,0064)	1	DF

9.2.12. VL Image Module

Table 43 VL Image

Attribute Name	Tag	Type	Attribute Description
Image Type	(0008,0008)	1	ORIGINAL\0PRIMARY
Photometric Interpretation	(0028,0004)	1	A value created by IMAGEnet.
Bits Allocated	(0028,0100)	1	A value created by IMAGEnet.
Bits Stored	(0028,0101)	1	A value created by IMAGEnet.
High Bit	(0028,0102)	1	A value created by IMAGEnet.
Pixel Representation	(0028,0103)	1	A value created by IMAGEnet.
Sample per Pixel	(0028,0002)	1	A value created by IMAGEnet.
Planar Configuration	(0028,0006)	1C	A value created by IMAGEnet.
Lossy Image Compression	(0028,2110)	2	No value
Pixel Data	(7FE0,0010)	1	A value created by IMAGEnet.
Pixel Spacing	(0028,0030)	3	A value created by IMAGEnet.

9.2.13. SC Image Module

Table 44 SC Image

Attribute Name	Tag	Type	Attribute Description

Please note: This section is left blank because no SC Image module tag is outputted.

9.2.14. Cine Module

Table 45 Cine

Attribute Name	Tag	Type	Attribute Description
Frame Time	(0018,1063)	1C	0

9.2.15. Multi Frame Module

Table 46 Multi Frame

Attribute Name	Tag	Type	Attribute Description
Number of Frames	(0028,0008)	1	1
Frame Increment Pointer	(0028,0009)	1	0018,1063

9.2.16. Ophthalmic Photography Image Module

Table 47 Ophthalmic Photography Image

Attribute Name	Tag	Type	Attribute Description
Image Type	(0008,0008)	1	ORIGINAL 0 PRIMARY
Lossy Image Compression	(0028,2110)	1	00
Burned In Annotation	(0028,0301)	1	NO
Pixel Spacing	(0028,0030)	1C	A value created by IMAGENet.

9.2.17. Ocular Region Imaged Module

Table 48 Ocular Region Imaged

Attribute Name	Tag	Type	Attribute Description
Image Laterality	(0020,0062)	1	R, L, or B

9.2.18. Ophthalmic Photography Acquisition Parameters Module

Table 49 Ophthalmic Photography Acquisition Parameters

Attribute Name	Tag	Type	Attribute Description
Patient Eye Movement Commanded	(0022,0005)	2	No value
Refractive State Sequence	(0022,001B)	2	No value
Emmetropic Magnification	(0022,000A)	2	A value created by IMAGENet.
Intra Ocular Pressure	(0022,000B)	2	No value
Horizontal Field of View	(0022,000C)	2	A value created by IMAGENet.
Pupil Dilated	(0022,000D)	2	No value

9.2.19. Ophthalmic Photographic Parameters Module

Table 50 Ophthalmic Photographic Parameters

Attribute Name	Tag	Type	Attribute Description
Acquisition Device Type Code Sequence	(0022,0015)	1	
> Code Value	(0008,0100)	2	A value created by IMAGEnet.
> Coding Scheme Designator	(0008,0102)	2	A value created by IMAGEnet.
> Code Meaning	(0008,0104)	2	A value created by IMAGEnet.
Detector Type	(0022,0016)	2	No value
Light Path Filter Type Stack Code Sequence	(0022,0017)	2	No value
Image Path Filter Type Stack Code Sequence	(0022,0018)	2	No value
Lenses Code Sequence	(0022,0019)	2	No value

9.2.20. Enhanced Contrast / Bolus

表 51 Enhanced Contrast / Bolus

Attribute Name	Tag	Type	Attribute Description
Contrast/Bolus Agent Sequence	(0018,0012)	1	
>Code Value	(0008,0100)	1	A value created by IMAGEnet.
>Coding Scheme Designator	(0008,0102)	1	A value created by IMAGEnet.
>Code Meaning	(0008,0104)	1	A value created by IMAGEnet.
>Contrast/Bolus Administration Route Sequence	(0018,0014)	1	A value created by IMAGEnet.
>>Code Value	(0008,0100)	1	A value created by IMAGEnet.
>>Coding Scheme Designator	(0008,0102)	1	A value created by IMAGEnet.
>>Code Meaning	(0008,0104)	2	A value created by IMAGEnet.
>Contrast/Bolus Volume	(0018,1041)	2	A value created by IMAGEnet.
>Contrast/Bolus Ingredient Concentration	(0018,1049)	1	A value created by IMAGEnet.
>Contrast/Bolus Agent Number	(0018,9337)	2	A value created by IMAGEnet.
>Contrast/Bolus Ingredient Code Sequence	(0018,9338)	3	A value created by IMAGEnet.
>Contrast Administration Profile Sequence	(0018,9340)	2	A value created by IMAGEnet.
>>Contrast/Bolus Volume	(0018,1041)	3	A value created by IMAGEnet.
>>Contrast/Bolus Start Time	(0018,1042)	3	A value created by IMAGEnet.
>>Contrast/Bolus Stop Time	(0018,1043)	1	A value created by IMAGEnet.
>>Contrast/Flow Duration	(0018,1047)	3	A value created by IMAGEnet.

End of report