Canon

Retinal imaging control software MYD

DICOM Conformance Statement

To Customers

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0. Introduction

This Conformance Statement specifies the CANON Retinal imaging control Software MYD (hereinafter called Control Software) compliance to DICOM V3.0.
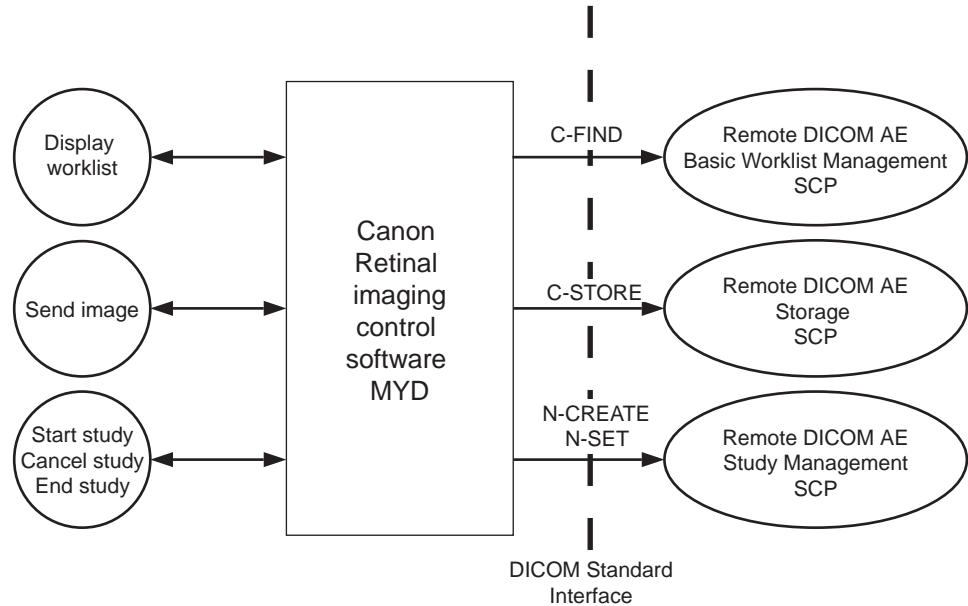
Abbreviations

AE	Application Entity
DICOM	Digital Imaging and Communications in Medicine
ISO	International Organization for Standardization
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. Implementational Model

Control Software runs on Microsoft Windows XP and Vista. Control Software includes functions for searching worklists (Basic Worklist Management SCU), sending study information (Study Management SCU), and sending images (Storage SCU).

1.1 Application Data Flow Diagram

1.2 Functional Definition of AE's

Control Software includes the SCU functions of Basic Worklist Management (Modality Worklist SOP Class), Study Management (Modality Performed Procedure Step SOP Class), and Storage (Storage SOP class).

Modality Worklist SOP Class	A worklist search request (C-FIND) is used to search and obtain study information.
Modality Performed Procedure Step SOP Class	In Progress, Discontinued, and Completed is sent for the study data obtained from a worklist search.
Storage SOP Class	DICOM images generated from a study are sent to the SCP (C-STORE).

1.3 Sequencing of Real-World Activities

Not applicable.

2. AE Specifications

Control Software generates a single association establishment request and operates as application entity.

2.1 Control Software AE Specifications

Control Software provides standard compatibility with DICOM V3.0 SOP Class as an SCU.

SOP Class Name	SOP Class UID	Role
Verification	1.2.840.10008.1.1	SCU
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	
Secondary Capture 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	
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31	
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	

2.1.1 Association Establishment Policies

2.1.1.1 General

When each function is started, Control Software tries to establish an association with the server. Maximum size of PDU that is used may be set to any value. The default setting is 16,384 bytes.

2.1.1.2 Number of Associations

Control Software generates a single association establishment request.

2.1.1.3 Asynchronous Nature

Asynchronous mode is not supported.

2.1.1.4 Implementation Identifying Information

Implementation Class UID for Control Software is:
1.2.392.200046.100.3.5.xxx (xxx stands for the version of Control Software).
Implementation version name is "CANON_CFx.xx" (x.xx stands for the version of Control Software).

2.1.2 Association Startup Systems

Control Software may test the association establishment request in the following real-world activities.

- When a communication confirmation request to the setting server is issued.
- When a worklist search request is issued.
- When an image storage request to the server is issued.
- When modality performed procedure step generation or a set request is issued.

2.1.2.1 Worklist Searching

2.1.2.1.1 Related Real-World Activity

When Worklist tab is selected from the Study Input screen, a C-FIND request is issued for worklist server, and then the study information is obtained and displayed as a list. If a value is entered in the Worklist search screen, search is performed with this as the search key.

2.1.2.1.2 Proposed Presentation Context

The proposed presentation context is shown below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Modality Worklist - FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

2.1.2.1.3 SOP Specific Conformance Statement for Modality Worklist SOP Class

In the worklist search (C-FIND), inquiries are made for the following items.
Item that has O mark in its Key column may be used as search key.

Description/Module	Tag	Key	Return Key Type
SOP Common			
Specific Character Set	(0008,0005)		1C
Scheduled Procedure Step			
Scheduled Procedure Step Sequence	(0040,0100)		1
>Scheduled Station AE Title	(0040,0001)	O	1
>Scheduled Procedure Step Start Date	(0040,0002)	O	1
>Scheduled Procedure Step Start Time	(0040,0003)	O	1
>Modality	(0008,0060)	O	1
>Scheduled Performing Physician's Name	(0040,0006)	O	2
>Scheduled Procedure Step Description	(0040,0007)		1C
>Scheduled Station Name	(0040,0010)	O	2
>Scheduled Procedure Step Location	(0040,0011)	O	2

Description/Module	Tag	Key	Return Key Type
>Scheduled Action Item Code Sequence	(0040,0008)		1C
>>Code Value	(0008,0100)		1C
>>Coding Scheme Designator	(0008,0102)		1C
>>Coding Scheme Version	(0008,0103)		3
>>Code Meaning	(0008,0104)		3
>Pre-Medication	(0040,0012)		2C
>Scheduled Procedure Step ID	(0040,0009)		1
>Requested Contrast Agent	(0032,1070)		2C
>Scheduled Procedure Step Status	(0040,0020)		3
>Comments on the Scheduled Procedure Step	(0040,0400)		3
Requested Procedure			
Requested Procedure ID	(0040,1001)	O	1
Reason for the Requested Procedure	(0040,1002)		3
Requested Procedure Comment	(0040,1400)		3
Requested Procedure Description	(0032,1060)		1C
Requested Procedure Code Sequence	(0032,1064)		1C
>Code Value	(0008,0100)		1C
>Coding Scheme Designator	(0008,0102)		1C
>Coding Scheme Version	(0008,0103)		3
>Code Meaning	(0008,0104)		3
Study Instance UID	(0020,000D)		1
Referenced Study Sequence	(0008,1110)		2
>Referenced SOP Class UID	(0008,1150)		1C
>Referenced SOP Instance UID	(0008,1155)		1C
Imaging Service			
Accession Number	(0008,0050)	O	2
Requesting Physician	(0032,1032)		2
Referring Physician's Name	(0008,0090)		2
Requesting Service	(0032,1033)		3
Patient Identification			
Patient's Name	(0010,0010)	O	1
Patient ID	(0010,0020)	O	1
Other Patient IDs	(0010,1000)		3
Patient Demographic			
Patient Birth Date	(0010,0030)		2
Patient Sex	(0010,0040)		2
Patient's Age	(0010,1010)		3
Patient's Size	(0010,1020)		3
Patient's Weight	(0010,1030)		2

Description/Module	Tag	Key	Return Key Type
Patient Medical			
Pregnancy Status	(0010,21C0)		2
Medical Alerts	(0010,2000)		2
Contrast Allergies	(0010,2110)		2

2.1.2.2 Modality Performed Procedure Step

2.1.2.2.1 Related Real-World Activity

In the related real-world activity, an N-CREATE/N-SET request is issued to the remote system that was set as an study management server, and the study start, finish, and cancel information are provided for the modality performed procedure step.
Data obtained from searching the worklist, and data generated by performing the study is generated and set.
When study is performed, study start (N-CREATE/"IN PROGRESS") is sent. When study is finished, (N-SET/"COMPLETED") is sent, and when study is cancelled, (N-SET/"DISCONTINUED") is sent.

2.1.2.2.2 Proposed Presentation Context

The proposed presentation context is shown below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

2.1.2.2.3 SOP Specific Conformance Statement for Modality Performed Procedure Step SOP Class

A DIMSE N-CREATE/N-SET service for the modality performed procedure step class is provided. The provided attributes are shown below.
None means there is no value (length: 0), - means neither tag nor value will be transferred.

Attribute Name	Tag	Req. Type N-CREATE/ N-SET	Value
Specific Character Set	(0008,0005)	1C/–	See 6.Support of Extended Character Sets
Performed Procedure Step Relationship			
Scheduled Step Attributes Sequence	(0040,0270)	1/–	

Attribute Name	Tag	Req. Type N-CREATE/ N-SET	Value
>Study Instance UID	(0020,000D)	1/–	Value obtained from worklist.
>Referenced Study Sequence	(0008,1110)	2/–	
>>Referenced SOP Class UID	(0008,1150)	1C/–	
>>Referenced SOP Instance UID	(0008,1155)	1C/–	
>Accession Number	(0008,0050)	2/–	
>Requested Procedure ID	(0040,1001)	2/–	
>Requested Procedure Description	(0032,1060)	2/–	
>Scheduled Procedure Step ID	(0040,0009)	2/–	
>Scheduled Procedure Step Description	(0040,0007)	2/–	
>Scheduled Action Item Code Sequence	(0040,0008)	2/–	
>>Code Value	(0008,0100)	1C/–	
>>Coding Scheme Designator	(0008,0102)	1C/–	
>>Coding Scheme Version	(0008,0103)	3/–	
>>Code Meaning	(0008,0104)	3/–	
Patient's Name	(0010,0010)	2/–	
Patient ID	(0010,0020)	2/–	
Patient Birth Date	(0010,0030)	2/–	
Patient's Sex	(0010,0040)	2/–	
Referenced Patient Sequence	(0008,1120)	2/–	None
Performed Procedure Step Information			
Performed Procedure Step ID	(0040,0253)	1/–	Internal study number (1 – 9999)
Performed Station AE Title	(0040,0241)	1/–	AE Title set on System screen (Default: CANON_CF)
Performed Station Name	(0040,0242)	2/–	Station Name set on System screen
Performed Location	(0040,0243)	2/–	Location set on System screen
Performed Procedure Step Start Date	(0040,0244)	1/–	Start date
Performed Procedure Step Start Time	(0040,0245)	1/–	Start time
Performed Procedure Step Status	(0040,0252)	1/3	IN PROGRESS, COMPLETED or DISCONTINUED
Performed Procedure Step Description	(0040,0254)	2/3	None / –
Performed Procedure Type Description	(0040,0255)	2/3	
Procedure Code Sequence	(0008,1032)	2/3	

Attribute Name	Tag	Req. Type N-CREATE/ N-SET	Value
Performed Procedure Step End Date	(0040,0250)	2/3	None / End date
Performed Procedure Step End Time	(0040,0251)	2/3	None / End time
Image Acquisition Results			
Modality	(0008,0060)	1/–	XC or OT or OP
Study ID	(0020,0010)	2/–	Internal study number (1 – 9999)
Performed Action Item Sequence	(0040,0260)	2/3	None / –
Performed Series Sequence	(0040,0340)	2/3	None / The following sequences are included only when there is a captured image at the end of exam.
>Performing Physician's Name	(0008,1050)	2C/2C	According to the setting, the user name or the Scheduled Performing Physician's Name obtained from worklist.
>Protocol Name	(0018,1030)	1C/1C	Fundus camera mode (either Color, Fluo, ICG, OPT or RedFree)
>Operator's Name	(0008,1070)	2C/2C	User name
>Series Instance UID	(0020,000E)	1C/1C	1.2.392.200046.100.3.Product code.Serial number.Internal study number.Date and time (YYYYMMDDH-HMMSS).Internal series number
>Series Description	(0008,103E)	2C/2C	When Fundus Camera Mode is By User Defined Code in Study Manager screen: User Defined Code corresponding to Fundus Camera Mode. When Fundus Camera Mode is Manual in Study Manager screen: Fundus Camera Mode. When Create Series for Right/Left Eye is checked in DICOM Tag screen: Fundus Camera Mode (User Defined Code) and "/R" or "/L."
>Retrieve AE Title	(0008,0054)	2C/2C	AE Title set on System screen (Default: CANON_CF)
>Reference Image Sequence	(0008,1140)	2C/2C	None / None
> Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	2C/2C	

2.1.2.3 Send Image

2.1.2.3.1 Related Real-World Activity

In the related real-world activity, an image send (C_STORE) request is issued to the remote system that was set as the image storage server.

2.1.2.3.2 Proposed Presentation Context

The proposed presentation context is shown below.

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
VL Photo-graphic 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
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		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		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		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		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
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
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		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		

2.1.2.3.3 SOP Specific Conformance Statement for Storage SOP Class

If the status of storage response (C-STORE-RSP) is Success, the process continues as long as there are images to be sent. If the status of storage response (C-STORE-RSP) is Warning or Failure, an option is displayed for resending, and the process is performed again if the user selects the resending operation.
Details of each IOD will be indicated in A.Attachment.

3. Communication Profiles

3.1 Supported Communication Stack

Control Software provides DICOM V3.0 TCP/IP network communication support as stated in DICOM Standard Part 8.

3.2 TCP/IP Stack

Control Software inherits TCP/IP stack from the OS where the software is running.

3.3 Physical Media Support

Control Software supports 10BASE-T, 100BASE-T, 10BASE-2 (option) and 10BASE-5 (option) of Ethernet.

4. Extension / Specialization / Privatization

Not applicable.

5. Configurable Parameters

5.1 AE Title and Presentation Address Correspondence

The presentation information for the AE title and TCP/IP connection can be set with the following limitations. Only one AE title can be registered for the other communication station and your own station.

- The IP address (host name) and port number of the other communication station can be registered for only one station per SCP.
- The other communication station setting and your own station AE title can be set and changed at the setting screen.

5.2 Configurable Parameters

In Control Software, the following environment configuration data can be set.

Connection target information
- Calling AE title
- IP address (host name)
- Port number

Own station data
- Called AE title

6. Support of Extended Character Sets

Control Software supports extended character sets listed below.

Character Set Description	Defined Term
Default Repertoire	(NONE)
	ISO 2022 IR 6
Latin alphabet No.1	ISO_IR 100
Latin alphabet No.2	ISO_IR 101
Cyrillic	ISO_IR 144
Greek	ISO_IR 126
Latin alphabet No.5	ISO_IR 148
Japanese	ISO_IR 13
	ISO 2022 IR 13
	ISO 2022 IR 87

A.Attachment

All the IOD, which will be output when implementing Storage SCU in data communication AE, are listed below.
VL: VL Photographic Image Storage
SC: Secondary Capture Image Storage
OP8: Opthalmic Photography 8 Bit Image Storage

A.1 IOD Module

Control Software uses the IOD modules listed below.

Information Entities	Module	VL	SC	OP8	Reference
Patient	Patient	M	M	M	A.2
Study	General Study	M	M	M	A.3
	Patient Study	U	U	U	A.4
Series	General Series	M	M	M	A.5
Frame of Reference	Synchronization	-	-	M	A.6
Equipment	General Equipment	M	U	M	A.7
	SC Equipment	-	M	-	A.8
Image	General Image	M	M	M	A.9
	Image Pixel	M	M	M	A.10
	Enhanced Contrast/Bolus	-	-	*C	A.11
	Multi-Frame	-	-	M	A.12
	Acquisition Context	M	-	-	A.13
	VL Image	M	-	-	A.14
	Ophthalmic Photography Image	-	-	M	A.15
	Ophthalmic Photographic Parameters	-	-	M	A.16
	Ophthalmic Photography Acquisition Parameters	-	-	M	A.17
	Ocular Region Imaged	-	-	M	A.18
	Modality LUT	-	U	U	A.19
	VOI LUT	-	U	U	A.20
General	SOP Common	M	M	M	A.21

*Required when using a contrast agent.

A.2 Patient

Attribute Name	Tag	Type	Value
Patient's Name	(0010,0010)	2	Value obtained from worklist. Or, when study information is entered, the entered patient name.
Patient ID	(0010,0020)	2	Value obtained from worklist. Or, when study information is entered, the entered patient ID.
Patient's Birth Date	(0010,0030)	2	Value obtained from worklist. Or, when study information is entered, the entered patient birth date (YYYYMMDD).
Patient's Sex	(0010,0040)	2	Value obtained from worklist. Or, when study information is entered, the entered patient's sex (either M, F or O).
Other Patient IDs	(0010,1000)	3	Value obtained from worklist.
Ethnic Group	(0010,2160)	3	When study information is entered only, the entered ethnic group.

A.3 General Study

Attribute Name	Tag	Type	Value
Study Instance UID	(0020,000D)	1	Value obtained from worklist. Or, when no value is obtained from worklist and study information is entered, 1.2.392.200046.100.3.Product code.Serial number.Internal study number (1 - 9999).Date and time (YYYYMMDDHHMMSSS).
Study Date	(0008,0020)	2	Date the study was started. (YYYYMMDD)
Study Time	(0008,0030)	2	Time the study was started. (HHMMSS)
Referring Physician's Name	(0008,0090)	2	Value obtained from worklist.
Study ID	(0020,0010)	2	Internal study number (1–9999)
Accession Number	(0008,0050)	2	Value obtained from worklist. Or, when study information is entered, the entered accession number.
Study Description	(0008,1030)	3	Study comment + (Space) + Scheduled Procedure Step Description (0040,0007) obtained from worklist.

A.4 Patient Study

Attribute Name	Tag	Type	Value
Patient's Age	(0010,1010)	3	Patient's age when image was taken. When the worklist is used, the age is found with Patient Birth Date (0010,0030). If Patient Birth Date cannot be obtained, the value for Patient's Age (0010,1010) in the worklist is used.
Patient's Size	(0010,1020)	3	Value obtained from worklist.
Patient's Weight	(0010,1030)	3	Value obtained from worklist.

A.5 General Series

Attribute Name	Tag	Type	Value
Modality	(0008,0060)	1	VL: XC SC: OT OP8: OP
Series Instance UID	(0020,000E)	1	1.2.392.200046.100.3.Product code.Serial number.Internal study number (1–9999).Date and time (YYYYMMDDHHMMSS).Internal series number
Series Number	(0020,0011)	2	Internal series number
Laterality	(0020,0060)	2C	Right (R) or left (L) eye information OP8: No value
Series Date	(0008,0021)	3	Date the series started (YYYYMMDD)
Series Time	(0008,0031)	2	Time the series started (HHMMSS)
Performing Physician's Name	(0008,1050)	3	Performing Physician's Name
Protocol Name	(0018,1030)	3	Photography mode (either Color, Fluo, ICG or OPT)
Series Description	(0008,103E)	3	When Fundus Camera Mode is By User Defined Code in Study Manager screen: User Defined Code corresponding to Fundus Camera Mode. When Fundus Camera Mode is Manual in Study Manager screen: Fundus Camera Mode. When Create Series for Right/Left Eye is checked in DICOM Tag screen: Fundus Camera Mode (User Defined Code) and "/R" or "/L."
Operator's Name	(0008,1070)	3	User Name

A.6 Synchronization

Attribute Name	Tag	Type	Value
Synchronization Frame of Reference UID	(0020,0200)	1	1.2.392.200046.100.3. Product code. Serial number
Synchronization Trigger	(0018,106A)	1	NO TRIGGER
Acquisition Time Synchronized	(0018,1800)	1	N

A.7 General Equipment

Attribute Name	Tag	Type	Value
Manufacturer	(0008,0070)	2	Canon Inc.
Institution Name	(0008,0080)	3	Institution name set on System screen
Station Name	(0008,1010)	3	Station name set on System screen
Institution Department Name	(0008,1040)	3	Department name set on System screen
Manufacturer's Model Name	(0008,1090)	3	Model of the fundus camera obtained from the fundus camera by communication.
Device Serial Number	(0018,1000)	3	Serial number obtained from the fundus camera by communication.
Software Version(s)	(0018,1020)	3	Vx.x.x.x (Control Software Version)

A.8 SC Equipment

Attribute Name	Tag	Type	Value
Conversion Type	(0008,0064)	1	DI

A.9 General Image

Attribute Name	Tag	Type	Value
Instance Number	(0020,0013)	2	Internal image number
Patient Orientation	(0020,0020)	2C	L\F
Content Date	(0008,0023)	2C	Date the image was taken (YYYYMMDD)
Content Time	(0008,0033)	2C	Time the image was taken (HHMMSS)
Image Type	(0008,0008)	1	For VL and SC ORIGINAL\PRIMARY For OP8 Color: ORIGINAL\PRIMARY\\COLOR Fluo: ORIGINAL\PRIMARY\\FA ICG: ORIGINAL\PRIMARY\\ICG OPT: ORIGINAL\PRIMARY RedFree: ORIGINAL\PRIMARY\\REDFREE
Acquisition Number	(0020,0012)	3	1
Image Comments	(0020,4000)	3	When "Save as "Image comments"" is checked on the DICOM Tag screen, items set to "Enabled items" on the Image Comment Settings Screen are saved. When "Save as "Image comments"" is not checked on the DICOM Tag screen, text entered in "Image comment" field on the Image Property screen is saved.

A.10 Image Pixel

Attribute Name	Tag	Type	Value
Samples per Pixel	(0028,0002)	1	Grayscale: 1 Color: 3
Photometric Interpretation	(0028,0004)	1	Grayscale: MONOCHROME2 Color: RGB
Rows	(0028,0010)	1	Number of pixels in vertical direction of image data
Columns	(0028,0011)	1	Number of pixels in horizontal direction of image data
Bits Allocated	(0028,0100)	1	8
Bits Stored	(0028,0101)	1	8
High Bit	(0028,0102)	1	7
Pixel Representation	(0028,0103)	1	0
Planar Configuration	(0028,0006)	1C	0 when (0028,0002) is 3
Pixel Data	(7FE0,0010)	1	Image data

A.11 Enhanced Contrast/Bolus

Attribute Name	Tag	Type	Value
Contrast/Bolus Agent Sequence	(0018,0012)	1	Used in Fluo and ICG. Context ID = 4200
>Code Value	(0008,0100)	1C	Fluo: C-B02CC ICG: C-B0156
>Coding Scheme Designator	(0008,0102)	1C	Fluo: SRT ICG: SRT
>Code Meaning	(0008,0104)	1C	Fluo: Fluorescein ICG: Indocyanin green
>Contrast/Bolus Agent Number	(0018,9337)	1	1
>Contrast/Bolus Administration Route Sequence	(0018, 0014)	1	Context ID = 11
>>Code Value	(0008,0100)	1C	G-D101
>> Coding Scheme Designator	(0008,0102)	1C	SNM3
>> Code Meaning	(0008,0104)	1C	Intraveneous route
> Contrast/Bolus Ingredient Code Sequence	(0018,9338)	2	No value
> Contrast/Bolus Volume	(0018,1041)	2	No value
> Contrast/Bolus Ingredient Concentration	(0018,1049)	2	No value

A.12 Multi-Frame

Attribute Name	Tag	Type	Value
Number of Frames	(0028,0008)	1	1
Frame Increment Pointer	(0028,0009)	1	0008002A

A.13 Acquisition Context

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

A.14 VL Image

Attribute Name	Tag	Type	Value
Lossy Image Compression	(0028,2110)	3	No Compression or Lossless JPEG: 00 Lossy JPEG: 01
Window Center	(0028,1050)	3	128 only when Window Center/Window Width is checked in the DICOM Tag screen and (0028,0004) is MONOCHROME2.
Window Width	(0028,1051)	1C	256 only when Window Center/Window Width is checked in the DICOM Tag screen and (0028,0004) is MONOCHROME2.

A.15 Ophthalmic Photography Image

Attribute Name	Tag	Type	Value
Acquisition Datetime	(0008,002A)	1	Date and time the image was taken (YYYYMMDDHHMMSS.FFFFFF)
Lossy Image Compression	(0028,2110)	1	00=No Compression, Lossless JPEG 01=Lossy JPEG
Lossy Image Compression Ratio	(0028,2112)	1C	Integer value (of uncompressed image size/lossy image size) when (0028,2110) is 01.
Lossy Image Compression Method	(0028,2114)	1C	ISO_10918_1 when (0028,2110) is 01.
Burned In Annotation	(0028,0301)	1	NO
Pixel Spacing	(0028,0030)	1C	Pixel spacing in the retina
Presentation LUT Shape	(2050,0020)	1C	IDENTITY when (0028,0004) is MONOCHROME2.

A.16 Ophthalmic Photographic Parameters

Attribute Name	Tag	Type	Value
Acquisition Device Type Code Sequence	(0022,0015)	1	Context ID = 4202
> Code Value	(0008,0100)	1C	R-1021A
> Coding Scheme Designator	(0008,0102)	1C	SRT
> Code Meaning	(0008,0104)	1C	Fundus Camera
Illumination Type Code Sequence	(0022,0016)	2	No value
Light Path Filter Type Stack Code Sequence	(0022,0017)	2	Exciter Filter Context ID = 4204
> Code Value	(0008,0100)	1C	Color: 111609 Fluo: 111603 ICG: 111606 OPT: 111603,111601 RedFree: 111601
> Coding Scheme Designator	(0008,0102)	1C	Color: DCM Fluo: DCM ICG: DCM OPT: DCM RedFree: DCM
> Code Meaning	(0008,0104)	1C	Color: No filter Fluo: Blue filter ICG: Infrared filter OPT: Blue filter, Green filter RedFree: Green filter
Image Path Filter Type Stack Code Sequence	(0022,0018)	2	Barrier Filter Context ID = 4204
> Code Value	(0008,0100)	1C	Color: 111609 Fluo: 111604 ICG: 111606 OPT: 111604, 111609 RedFree: 111609
> Coding Scheme Designator	(0008,0102)	1C	Color: DCM Fluo: DCM ICG: DCM OPT: DCM RedFree: DCM
> Code Meaning	(0008,0104)	1C	Color: No filter Fluo: Yellow-green filter ICG: Infrared filter OPT: Yellow-green filter, No filter RedFree: No filter
Lenses Code Sequence	(0022,0019)	2	No value
Detector Type	(0018,7004)	2	Color, Fluo, OPT, RedFree: CMOS ICG: CCD

A.17 Ophthalmic Photography Acquisition Parameters

Attribute Name	Tag	Type	Value
Patient Eye Movement Commanded	(0022,0005)	2	No value
Refractive State Sequence	(0022,001B)	2	No value
Emmetropic Magnification	(0022,000A)	2	No value
Intra Ocular Pressure	(0022,000B)	2	No value
Horizontal Field of View	(0022,000C)	2	No value
Pupil Dilated	(0022,000D)	2	When use of the Mydriatic Agent is selected: YES When non-use of the Mydriatic Agent is selected: NO When neither is selected: None
Mydriatic Agent Code Sequence	(0022,001C)	2C	When the value for (0022,000D) is "YES", it will be output.
> Code Value	(0008,0100)	1C	C-677B9, C-677C0, C-97520, C-68165, C-97580
> Coding Scheme Designator	(0008,0102)	1C	SRT
> Code Meaning	(0008,0104)	1C	Atropine, Homatropine, Cyclopento-late, Phenylephrine, Tropicamide
Degree of Dilation	(0022,000E)	2C	When the value for (0022,000D) is "YES", it will be output.

A.18 Ocular Region Imaged

Attribute Name	Tag	Type	Value
Image Laterality	(0020,0062)	1	Right or left eye information R, L
Anatomic Region Sequence	(0008,2218)	1	Context ID = 4209
> Code Value	(0008,0100)	1C	T-AA610
> Coding Scheme Designator	(0008,0102)	1C	SRT
> Code Meaning	(0008,0104))	1C	Retina

A.19 Modality LUT

Attribute Name	Tag	Type	Value
Rescale Intercept	(0028,1052)	1C	0
Rescale Slope	(0028,1053)	1C	1
Rescale Type	(0028,1054)	1C	US

A.20 VOI LUT

Attribute Name	Tag	Type	Value
Window Center	(0028,1050)	3	128 only when Window Center/Window Width is checked in the DICOM Tag screen and (0028,0004) is MONOCHROME2.
Window Width	(0028,1051)	1C	256 only when Window Center/Window Width is checked in the DICOM Tag screen and (0028,0004) is MONOCHROME2.

A.21 SOP Common

Attribute Name	Tag	Type	Value
SOP Class UID	(0008,0016)	1	VL:1.2.840.10008.5.1.4.1.1.77.1.4 SC:1.2.840.10008.5.1.4.1.1.7 OP8: 1.2.840.10008.5.1.4.1.1.77.1.5.1
SOP Instance UID	(0008,0018)	1	Series Instance UID (0020,000E). Acquisition Number (0020,0012). Instance Number (0020,0013).storage suffix
Specific Character Set	(0008,0005)	1C	See 6.Support of Extended Character Sets

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