NIDEK

IMAGE FILING SOFTWARE

NAVIS-EX

DICOM 3.0 Conformance Statement

Original instructions

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1. Conformance Statement Overview

NAVIS-EX supports the SOP classes shown below.

SOP Class Name	SOP Class UID	SCU	SCP
Workflow Management			
Modality Worklist Information Model - Find	1.2.840.10008.5.1.4.31	Yes	No
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Yes	No
Storage Commitment Push Model	1.2.840.10008.1.20.1	Yes	No
Transfer			
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Tomography Image	1.2.840.10008.5.1.4.1.1.77.1.5.4	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No

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2. Introduction

2.1 Revision History

Document version	Software Version	Changes	Date of revision
1.0.1	1.5.0	First edition	2015-01-29
1.0.2	1.9.0	Addition of SOP class of Ophthalmic Tomography Image	2020-08-25

2.2 Audience

This document is for medical device users, medical system integrators, medical device manufacturers, and software designers. It is written with an assumption that the readers have basic knowledge of DICOM 3.0 standard.

2.3 Remarks

This document describes the conformance of NAVIS-EX to the DICOM 3.0 standard. However, it does not guarantee the interoperability in accordance with the actual DICOM standard.

2.4 Definitions Terms and Abbreviations

Abbreviation	Term
DICOM	Digital Imaging and Communications in Medicine
SCP	Service Class Provider
SCU	Service Class User
AE	Application Entity
SOP	Service-Object Pair
UID	Unique Identifier
MWL	Modality Worklist
MPPS	Modality Performed Procedure Step

2.5 References

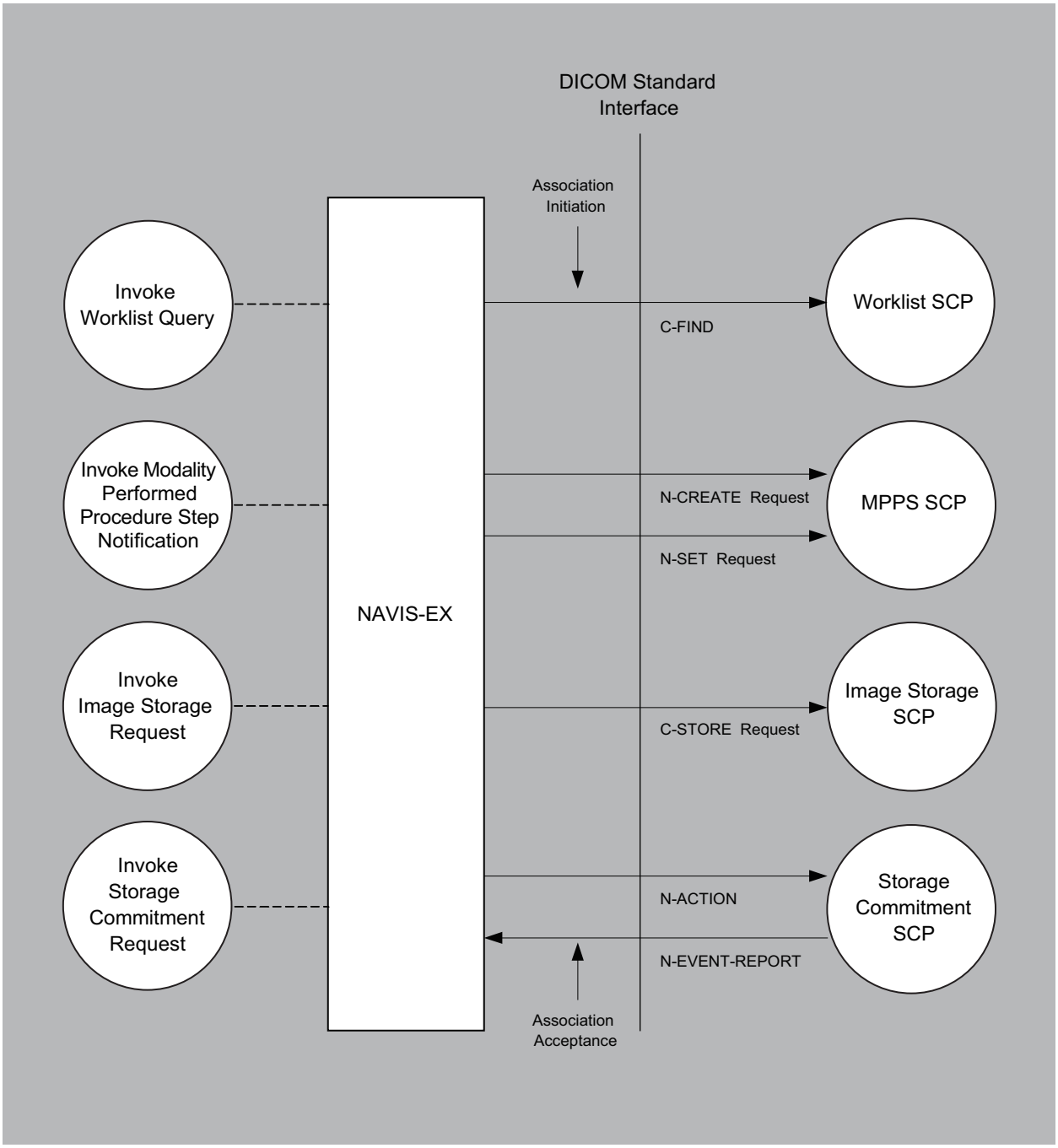
Digital Imaging and Communications in Medicine (DICOM), NEMA PS 3.1

3. Networking

3.1 Implementation Model

NAVIS-EX is equipped with the functions for basic worklist management, examination management, data storage, and data storage commitment.

3.1.1 Application Data Flow Diagram



3.1.2 Functional Definition of AEs

Modality Worklist

Sends a C-FIND request to Remote DICOM Device. By receiving a C-FIND response, it acquires the basic worklist.

Modality Performed Procedure Step

Sends a N-CREATE request and N-SET request to Remote DICOM Device to send execution information.

Store Image to other devices

Sends a C-STORE request to Remote DICOM Device to send images.

Storage Commitment

Sends A-ACTION to Remote DICOM Device. By receiving N-EVENT-REPORT, it commits data storing.

3.2 AE Specifications

3.2.1 SOP Classes

The conformance of the DICOM SOP classes is shown below.

SOP Class Name	SOP Class UID	SCU	SCP
Modality Worklist Information Model - Find	1.2.840.10008.5.1.4.31	Yes	No
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Tomography Image	1.2.840.10008.5.1.4.1.1.77.1.5.4	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No
Storage Commitment Push Model	1.2.840.10008.1.20.1	Yes	No

3.2.2 Association Policies

3.2.2.1 General

For the application context name of DICOM, use the following UID.

Application Context Name	1.2.840.10008.3.1.1.1

3.2.2.2 Number of Associations

The maximum number of simultaneously used associations are as shown below.

Number of Associations as an Association Initiator

Maximum number of simultaneous associations	1

Number of Associations as an Association Acceptour

Maximum number of simultaneous associations	1

3.2.2.3 Implementation Identifying Information

For the implementation class, use the following UID.

Implementation Class UID	1.2.16.840.1.114333.19702.1.5.0
Implementation Version Number	NAVIS-EX_Ver150

3.2.3 Association Initiation Policy

3.2.3.1 Action of Query Modality Worklist

It is activated when a search request of Worklist to DICOM Remote Device is issued. C-FIND request is issued, and Modality Worklist is acquired.

Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Modality Worklist Information Model - Find	1.2.840.10008.5.1.4.31	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

3.2.3.2 Action of Modality Performed Procedure Step

It is activated when a execution-finishing step to DICOM Remote Device is generated, or setting is requested. It issues N-CREATE and N-SET requests to inform Performed Procedure Step Manager of the start and end of the procedure.

Proposed Presentation Contexts

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

3.2.3.3 Action of Image Storage

It is activated when an image storing request to DICOM Remote Device is issued. It issues a C-STORE request to send images to Image Archive.

Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		JPEG Baseline	1.2.840.10008.1.2.4.50	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		JPEG Baseline	1.2.840.10008.1.2.4.50	SCU	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		JPEG Baseline	1.2.840.10008.1.2.4.50	SCU	None
Ophthalmic Tomography Image	1.2.840.10008.5.1.4.1.1.77.1.5.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

3.2.3.4 Action of Storage Commitment

It is activated when a data storing commitment request to DICOM Remote Device is issued. It receives a N-ACTIONE request and N-EVENT-REPORT request, and executes Storage Commitment to Image Manager/Image Archive.

Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Storage Commitment Push Model	1.2.840.10008.1.20.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

4. Network Interfaces

4.1 Physical Network Interface

Because NAVIS-EX is an application, there is no specifications for physical network interface.

4.2 Additional Protocols

No additional protocol.

4.3 IPv4 and IPv6 Support

Only IPv4 is supported.

5. Support of Character Sets

The supported character sets are as shown below.

- •ISO 2022 IR 6 (Default)
- • ISO 2022 IR 87

6. Annexes

6.1 IOD Contents

6.1.1 Created SOP Instance

The abbreviations used for “Value” in the table are as shown below.

----	In accordance with the DICOM standard

The abbreviations used for “Presence of Module” and “Presence of Value” in the table are as shown below.

VNAP	The value does not always exist. (When the value does not exist, the attribute is sent with a length of “0”.)
ANAP	The attribute does not always exist.
ALWAYS	The value always exists.
EMPTY	The attribute is sent without the value.

The abbreviations used for “Source” in the table are as shown below.

USER	For the value, patient information or such input by the user with NAVIS-EX is input.
NAVIS-EX	The value is automatically generated or provided by NAVIS-EX.
MWL	The value is input from DICOM service such as MWL.
CONFIG	The value is input from a management setting that performs actions such as DICOM connection of NAVIS-EX.
NOTHING	No generation source

6.1.1.1 Secondary Capture Image Storage IOD

IE	Module	Reference	Presence of Module
Patient	Patient	6.1.2.1	ALWAYS
Study	General Study	6.1.2.2	ALWAYS
Series	General Series	6.1.2.3	ALWAYS
Equipment	General Equipment	6.1.2.7	ALWAYS
	SC Equipment	6.1.2.8	ALWAYS
Image	General Image	6.1.2.9	ALWAYS
	Image Pixel	6.1.2.10	ALWAYS
	SC Image	6.1.2.13	ALWAYS
	SOP Common	6.1.2.20	ALWAYS

6.1.1.2 VL Photographic Image Storage IOD

IE	Module	Reference	Presence of Module
Patient	Patient	6.1.2.1	ALWAYS
Study	General Study	6.1.2.2	ALWAYS
Series	General Series	6.1.2.3	ALWAYS
Equipment	General Equipment	6.1.2.7	ALWAYS
Image	General Image	6.1.2.9	ALWAYS
	Image Pixel	6.1.2.10	ALWAYS
	Acquisition Context	6.1.2.12	ALWAYS
	VL Image	6.1.2.14	ALWAYS
	SOP Common	6.1.2.20	ALWAYS

6.1.1.3 Ophthalmic Photography 8 Bit Image Storage IOD

IE	Module	Reference	Presence of Module
Patient	Patient	6.1.2.1	ALWAYS
Study	General Study	6.1.2.2	ALWAYS
Series	General Series	6.1.2.3	ALWAYS
	Ophthalmic Photography Series	6.1.2.4	ALWAYS
Frame of Reference	Synchronization	6.1.2.6	ALWAYS
Equipment	General Equipment	6.1.2.7	ALWAYS
Image	General Image	6.1.2.9	ALWAYS
	Image Pixel	6.1.2.10	ALWAYS
	Multi-Frame	6.1.2.11	ALWAYS
	Acquisition Context	6.1.2.12	ALWAYS
	Ophthalmic Photography Image	6.1.2.15	ALWAYS
	Ocular Region Imaged	6.1.2.16	ALWAYS
	Ophthalmic Photography Acquisition Parameters	6.1.2.17	ALWAYS
	Ophthalmic Photography Parameters	6.1.2.18	ALWAYS
	SOP Common	6.1.2.20	ALWAYS

6.1.1.4 Ophthalmic Tomography Image Storage IOD

IE	Module	Reference	Presence of Module
Patient	Patient	6.1.2.1	ALWAYS
Study	General Study	6.1.2.2	ALWAYS
Series	General Series	6.1.2.3	ALWAYS
	Ophthalmic Tomography Series	6.1.2.21	ALWAYS
Frame of Reference	Synchronization	6.1.2.6	ALWAYS
Equipment	General Equipment	6.1.2.7	ALWAYS
	Enhanced General Equipment	6.1.2.22	

IE	Module	Reference	Presence of Module
Image	Image Pixel	6.1.2.10	ALWAYS
	Multi-frame Functional Groups	6.1.2.23	ALWAYS
	Multi-frame Dimension	6.1.2.24	ALWAYS
	Acquisition Context	6.1.2.12	ALWAYS
	Ophthalmic Tomography Image	6.1.2.25	ALWAYS
	Ophthalmic Tomography Acquisition Parameters	6.1.2.26	ALWAYS
	Ophthalmic Tomography Parameters	6.1.2.27	ALWAYS
	Ocular Region Imaged	6.1.2.16	ALWAYS
	SOP Common	6.1.2.20	ALWAYS

6.1.1.5 Encapsulated PDF Storage IOD

IE	Module	Reference	Presence of Module
Patient	Patient	6.1.2.1	ALWAYS
Study	General Study	6.1.2.2	ALWAYS
Series	Encapsulated Document Series	6.1.2.5	ALWAYS
Equipment	General Equipment	6.1.2.7	ALWAYS
	SC Equipment	6.1.2.8	ALWAYS
Encapsulated Document	Encapsulated Document	6.1.2.19	ALWAYS
	SOP Common	6.1.2.20	ALWAYS

6.1.2 Modules

6.1.2.1 Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Name	(0010,0010)	PN	There is an input restriction depending on the NAVIS-EX specifications. For details, see the Operator's Manual.	VNAP	USER MWL
Patient ID	(0010,0020)	LO	There is an input restriction depending on the NAVIS-EX specifications. For details, see the Operator's Manual.	ALWAYS	USER MWL
Patient's Birth Date	(0010,0030)	DA	There is an input restriction depending on the NAVIS-EX specifications. For details, see the Operator's Manual.	VNAP	USER MWL
Patient's Sex	(0010,0040)	CS	Any of the following values is set. Male: M Female: F Others: O	ALWAYS	USER MWL
Other Patient IDs	(0010,1000)	LO	---	VNAP	MWL

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient Comments	(0010,4000)	LT	There is an input restriction depending on the NAVIS-EX specifications. For details, see the Operator's Manual.	VNAP	USER MWL

6.1.2.2 General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Study Instance UID	(0020,000D)	UI	---	ALWAYS	NAVIS-EX MWL
Study Date	(0008,0020)	DA	The date is set with the following format. yyyymmdd	ALWAYS	NAVIS-EX
Study Time	(0008,0030)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Referring Physician's Name	(0008,0090)	PN	---	VNAP	MWL
Study ID	(0020,0010)	SH	---	ALWAYS	NAVIS-EX
Accession Number	(0008,0050)	SH	---	VNAP	MWL
Study Description	(0008,1030)	LO	No value	EMPTY	NOTHING
Physician(s) of Record	(0008,1048)	PN	No value	EMPTY	NOTHING

6.1.2.3 General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	---	ALWAYS	CONFIG
Series Instance UID	(0020,000E)	UI	---	ALWAYS	NAVIS-EX
Series Number	(0020,0011)	IS	---	ALWAYS	NAVIS-EX
Laterality	(0020,0060)	CS	Any of the following values is set. Right eye: R Left eye: L Both eyes: B	VNAP	NAVIS-EX
Series Date	(0008,0021)	DA	The date is set with the following format. yyyymmdd	ALWAYS	NAVIS-EX
Series Time	(0008,0031)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Protocol Name	(0018,1030)	LO	---	VNAP	MWL
Operators' Name	(0008,1070)	PN	---	ALWAYS	NAVIS-EX
Referenced Performed Procedure Step Sequence	(0008,1111)	SQ	Sequence item	VNAP	MWL
Referenced SOP Class UID	(0008,1150)	UI	---	VNAP	MWL
Referenced SOP Instance UID	(0008,1155)	UI	---	VNAP	MWL

Attribute Name	Tag	VR	Value	Presence of Value	Source
Body Part Examined	(0018,0015)	CS	The following values are always set. HEAD	ALWAYS	NAVIS-EX
Patient Position	(0018,5100)	CS	No value	EMPTY	NOTHING
Request Attributes Sequence	(0040,0275)	SQ	Sequence item	VNAP	NAVIS-EX
Requested Procedure ID	(0040,1001)	SH	---	VNAP	MWL
Scheduled Procedure Step ID	(0040,0009)	SH	---	VNAP	MWL
Scheduled Procedure Step Description	(0040,0007)	LO	---	VNAP	MWL

6.1.2.4 Ophthalmic Photography Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	---	ALWAYS	CONFIG

6.1.2.5 Encapsulated Document Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	---	ALWAYS	CONFIG
Series Instance UID	(0020,000E)	UI	---	ALWAYS	NAVIS-EX
Series Number	(0020,0011)	IS	---	ALWAYS	NAVIS-EX
Referenced Performed Procedure Step Sequence	(0008,1111)	SQ	Sequence item	VNAP	MWL
Referenced SOP Class UID	(0008,1150)	UI	---	VNAP	MWL
Referenced SOP Instance UID	(0008,1155)	UI	---	VNAP	MWL

6.1.2.6 Synchronization Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Synchronization Frame of Reference UID	(0020,0200)	UI	---	ALWAYS	NAVIS-EX
Synchronization Trigger	(0018,106A)	CS	---	ALWAYS	NAVIS-EX
Acquisition Time Synchronized	(0018,1800)	CS	---	ALWAYS	NAVIS-EX

6.1.2.7 General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	(0008,0070)	LO	---	ALWAYS	NAVIS-EX
Institution Name	(0008,0080)	LO	---	VNAP	CONFIG
Institution Address	(0008,0081)	ST	---	VNAP	CONFIG
Station Name	(0008,1010)	SH	---	ALWAYS	CONFIG

Attribute Name	Tag	VR	Value	Presence of Value	Source
Institution Department Name	(0008,1040)	LO	---	VNAP	CONFIG
Manufacturer's Model Name	(0008,1090)	LO	---	ALWAYS	NAVIS-EX
Device Serial Number	(0018,1000)	LO	---	ALWAYS	NAVIS-EX
Software Versions	(0018,1020)	LO	---	ALWAYS	NAVIS-EX

6.1.2.8 SC Equipment Modules

Attribute Name	Tag	VR	Value	Presence of Value	Source
Conversion Type	(0008,0064)	CS	The following values are always set. DI	ALWAYS	NAVIS-EX
Modality	(0008,0060)	CS	---	ALWAYS	CONFIG

6.1.2.9 General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	(0020,0013)	IS	---	ALWAYS	NAVIS-EX
Content Date	(0008,0023)	DA	The date is set with the following format. yyyymmdd	ALWAYS	NAVIS-EX
Content Time	(0008,0033)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Image Type	(0008,0008)	CS	---	ALWAYS	NAVIS-EX
Acquisition Number	(0020,0012)	IS	---	ALWAYS	NAVIS-EX
Acquisition Date	(0008,0022)	DA	The date is set with the following format. yyyymmdd	ALWAYS	NAVIS-EX
Acquisition Time	(0020,0032)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Acquisition Date Time	(0008,002A)	DT	The date and time are set with the following format. yyyymmddhhmmss	ALWAYS	NAVIS-EX
Image Comments	(0020,4000)	LT	---	ALWAYS	NAVIS-EX
Burned In Annotation	(0028,0301)	CS	The following values are always set. NO	ALWAYS	NAVIS-EX
Lossy Image Compression	(0028,2110)	CS	---	ALWAYS	NAVIS-EX
Lossy Image Compression Ratio	(0028,2112)	DS	---	VNAP	NAVIS-EX

6.1.2.10 Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	(0028,0002)	US	---	ALWAYS	NAVIS-EX
Photometric Interpretation	(0028,0004)	CS	---	ALWAYS	NAVIS-EX

Attribute Name	Tag	VR	Value	Presence of Value	Source
Rows	(0028,0010)	US	---	ALWAYS	NAVIS-EX
Columns	(0028,0011)	US	---	ALWAYS	NAVIS-EX
Bits Allocated	(0028,0100)	US	The following values are always set. 8	ALWAYS	NAVIS-EX
Bits Stored	(0028,0101)	US	The following values are always set. 8	ALWAYS	NAVIS-EX
High Bit	(0028,0102)	US	The following values are always set. 7	ALWAYS	NAVIS-EX
Pixel Representation	(0028,0103)	US	The following values are always set. 0	ALWAYS	NAVIS-EX
Pixel Data	(7FE0,0010)	OW/OB	---	ALWAYS	NAVIS-EX
Planar Configuration	(0028,0006)	US	The following values are always set. 0	ALWAYS	NAVIS-EX

6.1.2.11 Multi-Frame Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Frames	(0028,0008)	IS	---	ALWAYS	NAVIS-EX
Frame Increment Pointer	(0028,0009)	AT	---	ALWAYS	NAVIS-EX

6.1.2.12 Acquisition Context Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Acquisition Context Sequence	(0040,0555)	SQ	No value	EMPTY	NOTHING

6.1.2.13 SC Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Date of Secondary Capture	(0018,1012)	DA	No value	EMPTY	NOTHING
Time of Secondary Capture	(0018,1014)	TM	No value	EMPTY	NOTHING

6.1.2.14 VL Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Type	(0008,0008)	CS	---	ALWAYS	NAVIS-EX
Photometric Interpretation	(0028,0004)	CS	---	ALWAYS	NAVIS-EX
Bits Allocated	(0028,0100)	US	The following values are always set. 8	ALWAYS	NAVIS-EX
Bits Stored	(0028,0101)	US	The following values are always set. 8	ALWAYS	NAVIS-EX
High Bit	(0028,0102)	US	The following values are always set. 7	ALWAYS	NAVIS-EX

Attribute Name	Tag	VR	Value	Presence of Value	Source
Pixel Representation	(0028,0103)	US	The following values are always set. 0	ALWAYS	NAVIS-EX
Samples per Pixel	(0028,0002)	US	---	ALWAYS	NAVIS-EX
Planar Representation	(0028,0006)	US	---	VNAP	NAVIS-EX
Content Time	(0008,0033)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Lossy Image Compression	(0028,2110)	CS	---	ALWAYS	NAVIS-EX
Pixel Spacing	(0028,0030)	DS	---	ALWAYS	NAVIS-EX

6.1.2.15 Ophthalmic Photography Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Type	(0008,0008)	CS	---	ALWAYS	NAVIS-EX
Instance Number	(0020,0013)	IS	---	ALWAYS	NAVIS-EX
Samples per Pixel	(0028,0002)	US	---	ALWAYS	NAVIS-EX
Photometric Interpretation	(0028,0004)	CS	---	ALWAYS	NAVIS-EX
Pixel Representation	(0028,0103)	US	The following values are always set. 0	ALWAYS	NAVIS-EX
Planar Representation	(0028,0006)	US	---	VNAP	NAVIS-EX
Pixel Spacing	(0028,0030)	DS	---	ALWAYS	NAVIS-EX
Content Date	(0008,0023)	DA	The date is set with the following format. yyyymmdd	ALWAYS	NAVIS-EX
Content Time	(0008,0033)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Acquisition Date Time	(0008,002A)	DT	The date and time are set with the following format. yyyymmddhhmmss	ALWAYS	NAVIS-EX
Lossy Image Compression	(0028,2110)	CS	---	ALWAYS	NAVIS-EX
Lossy Image Compression Ratio	(0028,2112)	DS	---	VNAP	NAVIS-EX
Lossy Image Compression Method	(0028,2114)	CS	---	VNAP	NAVIS-EX
Burned In Annotation	(0028,0301)	CS	The following values are always set. NO	ALWAYS	NAVIS-EX

6.1.2.16 Ocular Region Imaged Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Laterality	(0020,0062)	CS	Any of the following values is set. Right eye: R Left eye: L Both eyes: B	ALWAYS	NAVIS-EX

6.1.2.17 Ophthalmic Photography Acquisition Parameters Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient Eye Movement Commanded	(0022,0005)	CS	No value	EMPTY	NOTHING
Refractive State Sequence	(0022,001B)	SQ	No value	EMPTY	NOTHING
Emmetropic Magnification	(0022,000A)	FL	No value	EMPTY	NOTHING
Intra Ocular Pressure	(0022,000B)	FL	No value	EMPTY	NOTHING
Pupil Dilated	(0022,000D)	CS	No value	EMPTY	NOTHING

6.1.2.18 Ophthalmic Photographic Parameters Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Acquisition Device Type Code Sequence	(0022,0015)	SQ	Sequence item	VNAP	NAVIS-EX
Code Value	(0008,0100)	SH	---	ALWAYS	NAVIS-EX
Coding Scheme Designator	(0008,0102)	SH	The following values are always set. SRT	ALWAYS	NAVIS-EX
Code Meaning	(0008,0104)	LO	---	ALWAYS	NAVIS-EX
Illumination Type Code Sequence	(0022,0016)	SQ	No value	EMPTY	NOTHING
Light Path Filter Type Stack Code Sequence	(0022,0017)	SQ	No value	EMPTY	NOTHING
Image Path Filter Type Stack Code Sequence	(0022,0018)	SQ	No value	EMPTY	NOTHING
Lenses Code Sequence	(0022,0019)	SQ	No value	EMPTY	NOTHING
Detector Type	(0018,7004)	CS	No value	EMPTY	NOTHING

6.1.2.19 Encapsulated Document Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	(0020,0013)	IS	---	ALWAYS	NAVIS-EX
Content Date	(0008,0023)	DA	The date is set with the following format. yyyymmdd	ALWAYS	NAVIS-EX
Content Time	(0008,0033)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Image Type	(0008,0008)	CS	---	ALWAYS	NAVIS-EX
Acquisition Date Time	(0008,002A)	DT	The date and time are set with the following format. yyyymmddhhmmss	ALWAYS	NAVIS-EX
Burned In Annotation	(0028,0301)	CS	The following values are always set. YES	ALWAYS	NAVIS-EX
Document Title	(0042,0010)	ST	No value	EMPTY	NOTHING
Concept Name Code Sequence	(0040,A043)	SQ	No value	EMPTY	NOTHING

Attribute Name	Tag	VR	Value	Presence of Value	Source
MIME Type of Encapsulated Document	(0042,0012)	LO	The following values are always set. Application/pdf	ALWAYS	NAVIS-EX
Encapsulated Document	(0042,0011)	OB	---	ALWAYS	NAVIS-EX

6.1.2.20 SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source
SOP Class UID	(0008,0016)	UI	---	ALWAYS	NAVIS-EX
SOP Instance UID	(0008,0018)	UI	---	ALWAYS	NAVIS-EX
Specific Character Set	(0008,0005)	CS	In accordance with the NAVIS-EX language setting, the corresponding character set is input.	ALWAYS	CONFIG
Instance Creation Date	(0008,0012)	DA	---	ALWAYS	NAVIS-EX
Instance Creation Time	(0008,0013)	TM	---	ALWAYS	NAVIS-EX
Instance Creation UID	(0008,0014)	UI	---	ALWAYS	NAVIS-EX
Instance Number	(0020,0013)	IS	---	ALWAYS	NAVIS-EX

6.1.2.21 Ophthalmic Tomography Series

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	---	ALWAYS	CONFIG
Series Number	(0020,0011)	IS	---	ALWAYS	NAVIS-EX
Referenced Performed Procedure Step Sequence	(0008,1111)	SQ	Sequence item	VNAP	MWL
Referenced SOP Class UID	(0008,1150)	UI	---	VNAP	MWL
Referenced SOP Instance UID	(0008,1155)	UI	---	VNAP	MWL

6.1.2.22 Enhanced General Equipment

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	(0008,0070)	LO	---	ALWAYS	NAVIS-EX
Manufacturer's Model Name	(0008,1090)	LO	---	ALWAYS	NAVIS-EX
Device Serial Number	(0018,1000)	LO	---	ALWAYS	NAVIS-EX
Software Versions	(0018,1020)	LO	---	ALWAYS	NAVIS-EX

6.1.2.23 Multi-frame Functional Groups

Attribute Name	Tag	VR	Value	Presence of Value	Source
Shared Functional Groups Sequence	(5200,9229)	SQ	Sequence item	ALWAYS	NAVIS-EX
Frame Anatomy Sequence	(0020,9071)	SQ	Sequence item	ALWAYS	NAVIS-EX
Anatomic Region Sequence	(0008,2218)	SQ	Sequence item	ALWAYS	NAVIS-EX

Attribute Name	Tag	VR	Value	Presence of Value	Source
Code Value	(0008,0100)	SH	The following values are always set. T-AA610	ALWAYS	NAVIS-EX
Coding Scheme Designator	(0008,0102)	SH	The following values are always set. SRT	ALWAYS	NAVIS-EX
Code Meaning	(0008,0104)	LO	The following values are always set. Retina	ALWAYS	NAVIS-EX
Frame Lateraity	(0020,9072)	CS	Any of the following values is set. Right eye: R Left eye: L Both eyes: B	ALWAYS	NAVIS-EX
Plane Orientation Sequence	(0020,9116)	SQ	Sequence item	ALWAYS	NAVIS-EX
Image Orientation (Patient)	(0020,0037)	DS	---	ALWAYS	NAVIS-EX
Pixel Measures Sequence	(0028,9110)	SQ	Sequence item	VNAP	NAVIS-EX
Pixel Spacing	(0028,0030)	DS	---	ALWAYS	NAVIS-EX
Slice Thickness	(0018,0050)	DS	---	ANAP	NAVIS-EX
Pre-frame Functional Group Sequence	(5200,9230)	SQ	Sequence item	VNAP	NAVIS-EX
Frame Content Sequence	(0020,9111)	SQ	Sequence item	VNAP	NAVIS-EX
Frame Reference DateTime	(0018,9151)	DT	The date and time are set with the following format. YYYYMMDDhhmmss	ALWAYS	NAVIS-EX
Frame Acquisition DateTime	(0018,9074)	DT	The date and time are set with the following format. YYYYMMDDhhmmss	ALWAYS	NAVIS-EX
Frame Acquisition Duration	(0018,9220)	FD	---	ALWAYS	NAVIS-EX
Dimension Index Values	(0020,9157)	UL	---	ALWAYS	NAVIS-EX
Stack ID	(0020,9056)	SH	---	ALWAYS	NAVIS-EX
In-Stack Position Number	(0020,9057)	UL	---	ALWAYS	NAVIS-EX
Plane Position Sequence	(0020,9113)	SQ	Sequence item	VNAP	NAVIS-EX
Image Position (Patient)	(0020,0032)	DS	---	ALWAYS	NAVIS-EX
Instance Number	(0020,0013)	IS	---	ALWAYS	NAVIS-EX
Content Date	(0008,0023)	DA	The date is set with the following format. YYYYMMDD	ALWAYS	NAVIS-EX
Content Time	(0008,0033)	TM	The time is set with the following format. hhmmss	ALWAYS	NAVIS-EX
Number of Frames	(0028,0008)	IS	---	ALWAYS	NAVIS-EX
Concatenation Frame Offset Number	(0020,9228)	UL	The following values are always set. 0	ALWAYS	NAVIS-EX
Concatenation UID	(0020,9161)	UI	---	ALWAYS	NAVIS-EX
SOP Instance UID of Concatenation Source	(0020,0242)	UI	---	ALWAYS	NAVIS-EX

Attribute Name	Tag	VR	Value	Presence of Value	Source
In-concatenation Number	(0020,9162)	US	The following values are always set. 1	ALWAYS	NAVIS-EX
In-concatenation Total Number	(0020,9163)	US	The following values are always set. 1	ALWAYS	NAVIS-EX

6.1.2.24 Multi-frame Dimension

Attribute Name	Tag	VR	Value	Presence of Value	Source
Dimension Organization Sequence	(0020,9221)	SQ	Sequence item	ALWAYS	NAVIS-EX
Dimension Organization UID	(0020,9164)	UI	---	ALWAYS	NAVIS-EX
Dimension Index Sequence	(0020,9222)	SQ	Sequence item	ALWAYS	NAVIS-EX
Dimension Index Pointer	(0020,9165)	AT	---	ALWAYS	NAVIS-EX
Functional Group Pointer	(0020,9167)	AT	The following values are always set. (0020,9111)	ALWAYS	NAVIS-EX

6.1.2.25 Ophthalmic Tomography Image

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Type	(0008,0008)	CS	---	ALWAYS	NAVIS-EX
Samples per Pixel	(0028,0002)	US	---	ALWAYS	NAVIS-EX
Acquisition Date Time	(0008,002A)	DT	The date and time are set with the following format. YYYYMMDDhhmmss	ALWAYS	NAVIS-EX
Acquisition Duration	(0018,9073)	FD	---	ALWAYS	NAVIS-EX
Acquisition Number	(0020,0012)	IS	---	ALWAYS	NAVIS-EX
Photometric Interpretation	(0028,0004)	CS	---	ALWAYS	NAVIS-EX
Pixel Representation	(0028,0103)	US	The following values are always set. 0	ALWAYS	NAVIS-EX
Bits Allocated	(0028,0100)	US	The following values are always set. 8	ALWAYS	NAVIS-EX
Bits Stored	(0028,0101)	US	The following values are always set. 8	ALWAYS	NAVIS-EX
High Bit	(0028,0102)	US	The following values are always set. 7	ALWAYS	NAVIS-EX
Presentation LUT Shape	(2050,0020)	CS	The following values are always set. IDENTITY	ALWAYS	NAVIS-EX
Lossy Image Compression	(0028,2110)	CS	---	ALWAYS	NAVIS-EX
Lossy Image Compression Ratio	(0028,2112)	DS	---	ANAP	NAVIS-EX
Lossy Image Compression Method	(0028,2114)	CS	---	VNAP	NAVIS-EX
Burned In Annotation	(0028,0301)	CS	The following values are always set. NO	ALWAYS	NAVIS-EX

Attribute Name	Tag	VR	Value	Presence of Value	Source
Concatenation Frame Offset Number	(0020,9228)	UL	The following values are always set. 0	ALWAYS	NAVIS-EX
In-concatenation Number	(0020,9162)	US	The following values are always set. 1	ALWAYS	NAVIS-EX
In-concatenation Total Number	(0020,9163)	US	The following values are always set. 1	ALWAYS	NAVIS-EX

6.1.2.26 Ophthalmic Tomography Acquisition Parameters

Attribute Name	Tag	VR	Value	Presence of Value	Source
Axial Length of the Eye	(0022,0030)	FL	---	ALWAYS	NAVIS-EX USER
Horizontal Field of View	(0022,000C)	FL	No value	EMPTY	NOTHING

6.1.2.27 Ophthalmic Tomography Parameters

Attribute Name	Tag	VR	Value	Presence of Value	Source
Acquisition Device Type Code Sequence	(0022,0015)	SQ	Sequence item	VNAP	NAVIS-EX
Code Value	(0008,0100)	SH	The following values are always set. A-00FBE	ALWAYS	NAVIS-EX
Coding Scheme Designator	(0008,0102)	SH	The following values are always set. SRT	ALWAYS	NAVIS-EX
Code Meaning	(0008,0104)	LO	The following values are always set. Optical Coherence Tomography Scanner	ALWAYS	NAVIS-EX
Light Path Filter Type Stack Code Sequence	(0022,0017)	SQ	Sequence item	EMPTY	NOTHING
Detector Type	(0018,7004)	CS	---	ALWAYS	NAVIS-EX
Illumination Wave Length	(0022,0055)	FL	---	ALWAYS	NAVIS-EX
Illumination Power	(0022,0056)	FL	---	ALWAYS	NAVIS-EX
Illumination Bandwidth	(0022,0057)	FL	---	ALWAYS	NAVIS-EX
Depth Spatial Resolution	(0022,0035)	FL	---	ALWAYS	NAVIS-EX
Maximum Depth Distortion	(0022,0036)	FL	---	ALWAYS	NAVIS-EX
Along-scan Spatial Resolution	(0022,0037)	FL	---	ALWAYS	NAVIS-EX
Maximum Along-scan Resolution	(0022,0038)	FL	---	ALWAYS	NAVIS-EX
Across-scan Spatial Resolution	(0022,0048)	FL	---	ALWAYS	NAVIS-EX
Maximum Across-scan Distortion	(0022,0049)	FL	---	ALWAYS	NAVIS-EX