DICOM Conformance Statement

VISUCONNECT 600

Version 2.0

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1 Conformance Statement Overview

VISUCONNECT 600 constists of a hardware adapter with device application software and PC software with a FORUM plug-in as user interface.

The main purpose is to capture data from medical devices which have no direct DICOM communication and to store these data records as appropriate SOP instances to the data repository of FORUM from ZEISS. The device application software of VISUCONNECT 600 hardware adapter does not offer any direct DICOM communication. However all DICOM communication of VISUCONNECT 600 is managed and provided by the PC software in combination with FORUM. Please refer to the FORUM DICOM Conformance Statement for further details.

The VISUCONNECT 600 application software allows to:

- capture data from configured devices for a selected patient
- create and preview report for captured data
- store report to FORUM's DICOM repository
- store appropriate SOP instances for captured data to FORUM's DICOM repository
- configure device connection

At minimum a report is generated for each data record captured from a configured device and stored as Encapsulated PDF SOP Instance. Depending on medical device type other SOP instances can be stored as well.

This document only describes the specifics for VISUCONNECT 600, mainly the created SOP instances.

The following medical devices are supported:

- VISULAS devices (VISULAS green, VISULAS yag, VISULAS combi)
- VISUREF 100
- VISUPLAN 500
- VISULENS 500

A hardware adapter is necessary to capture the data and can be configured in the software application.

This document is structured as suggested in the DICOM Standard (PS 3.2: Conformance).

2 Table of Contents

3 Introduction

3.1 Revision History

Table 3-1 Revision History

Document Version	Date	Changes
1.0	21.03.2022	Initial revision for VISUCONNECT 600 v2.0

3.2 Audience

This document is written for the people that need to understand how VISUCONNECT 600 will integrate into their healthcare facility. This includes both those responsible for overall imaging network policy and architecture, as well as integrators who need to have a detailed understanding of the DICOM features of the product. This document contains some basic DICOM definitions so that any reader may understand how this product implements DICOM features. However, integrators are expected to fully understand all the DICOM terminology, how the tables in this document relate to the product's functionality, and how that functionality integrates with other devices that support compatible DICOM features.

3.3 Remarks

The scope of this DICOM Conformance Statement is to facilitate integration between VISUCONNECT 600 and other DICOM products. The Conformance Statement should be read and understood in conjunction with the DICOM Standard. DICOM by itself does not guarantee interoperability. The Conformance Statement does, however, facilitate a first-level comparison for interoperability between different applications supporting compatible DICOM functionality.

This Conformance Statement is not supposed to replace validation with other DICOM equipment to ensure proper exchange of intended information. In fact, the user should be aware of the following important issues:

- The comparison of different Conformance Statements is just the first step towards assessing interconnectivity and interoperability between the product and other DICOM conformant equipment.
- Test procedures should be defined and executed to validate the required level of interoperability with specific compatible DICOM equipment, as established by the healthcare facility.

3.4 Definitions and Terms

Informal definitions are provided for the following terms used in this Conformance Statement.

The DICOM Standard is the authoritative source for formal definitions of these terms.

Application Entity (AE)

An end point of a DICOM information exchange, including the DICOM network or media interface software; i.e., the software that sends or receives DICOM information objects or messages. A single device may have multiple Application Entities.

Application Entity Title

The externally known name of an Application Entity, used to identify a DICOM application to other DICOM applications on the network.

Attribute

A unit of information in an object definition; a data element identified by a tag. The information may be a complex data structure (Sequence), itself composed of lower level data elements.

Examples: Patient ID (0010,0020), Accession Number (0008,0050), Photometric Interpretation (0028,0004), Procedure Code Sequence (0008,1032).

Information Object Definition (IOD)

The specified set of Attributes that comprise a type of data object; does not represent a specific instance of the data object, but rather a class of similar data objects that have the same properties. The Attributes may be specified as Mandatory (Type 1), Required but possibly unknown (Type 2), or Optional (Type 3), and there may be conditions associated with the use of an Attribute (Types 1C and 2C).

Examples: MR Image IOD, CT Image IOD, Print Job IOD.

Media Application Profile

The specification of DICOM information objects and encoding exchanged on removable media (e.g., CDs)

Module

A set of Attributes within an Information Object Definition that are logically related to each other.

Example: Patient Module includes Patient Name, Patient ID, Patient Birth Date,

Service/Object Pair (SOP) Class

The specification of the network or media transfer (service) of a particular type of data (object); the fundamental unit of DICOM interoperability specification.

Examples: Ultrasound Image Storage Service, Basic Grayscale Print Management.

Service/Object Pair (SOP) Instance

An information object; a specific occurrence of information exchanged in a SOP Class.

Examples: a specific x-ray image.

Tag

A 32-bit identifier for a data element, represented as a pair of four digit hexadecimal numbers, the “group” and the “element”. If the “group” number is odd, the tag is for a private (manufacturer-specific) data element.

Examples: (0010,0020) [Patient ID], (07FE,0010) [Pixel Data], (0019,0210) [private data element]

Transfer Syntax

The encoding used for exchange of DICOM information objects and messages.

Examples: JPEG compressed (images), little endian explicit value representation.

Unique Identifier (UID)

A globally unique “dotted decimal” string that identifies a specific object or a class of objects; an ISO-8824 Object Identifier.

Examples: Study Instance UID, SOP Class UID, SOP Instance UID.

Value Representation (VR)

The format type of an individual DICOM data element, such as text, an integer, a person’s name, or a code. DICOM information objects can be transmitted with either explicit identification of the type of each data element (Explicit VR), or without explicit identification (Implicit VR); with Implicit VR, the receiving application must use a DICOM data dictionary to look up the format of each data element.

3.5 Abbreviations

Table 3-2 Abbreviations used in this Document

Abbreviation	Definition
AE	Application Entity
AET	Application Entity Title
ANAP	Attribute is not always present - applicable for type 3 attributes
APP	Application
AR	Autorefraction
AUTO	Automatically generated, cannot be modified by the operator
BRQ	Broad Query mode of Modality Worklist Query
CCH	Cache
CONFIG	Configurable parameter
CZM	Carl Zeiss Meditec
DEF	Default Value
DICOM	Digital Imaging and Communications in Medicine
ELE	Explicit Little Endian
EMR	Electronic Medical Record
EPDF	Encapsulated Portable Document Format
ILE	Implicit Little Endian
IM	Information Model
IOD	Information Object Definition
KER	Keratometry
LEN	Lensometry
MWL	Modality Worklist
OD	Oculus Dexter, the right eye
OS	Oculus Sinister, the left eye
OU	Oculus Uterque, both eyes
PL	Pick list
PLD	Pick list item details
QR	Query
SCP	Service Class Provider
SCU	Service Class User
SEL	Selection from a list of values
SOP	Service Object Pair, union of a specific DICOM service and related IOD.
SRF	Subjective Refraction
TCP/IP	Transmission Control Protocol / Internet Protocol
UI	User Interface
UID	Unique Identifier
USER	User input
VM	Value Multiplicity

VNAP	Value not always present (attribute sent zero length if no value is present) - applicable for type 2 and 2C attributes
VR	Value Representation

3.6 References

NEMA PS3 / ISO 12052, Digital Imaging and Communications in Medicine (DICOM) Standard, National Electrical Manufacturers Association, Rosslyn, VA, USA (available free at http://medical.nema.org/).

Integrating the Healthcare Enterprise (IHE) EYECARE Technical Framework, rev 4.0, 2016 (available free at *http://www.ihe.net/Technical_Framework/index.cfm*).

FORUM DICOM Conformance Statements (available at http://www.zeiss.com/dicom).

4 Networking

4.1 Implementation Model

4.1.1 Application Data Flow

All DICOM related local and real-world activities of FORUM Archive as described in the FORUM DICOM Conformance Statement remain valid.

The local activities described in the application data flow diagram below are additional activities to the functional range of FORUM Archive described in FORUM DICOM Conformance Statement. These additional activities are added with the installation of the VISUCONNECT 600 as software plugin to FORUM.

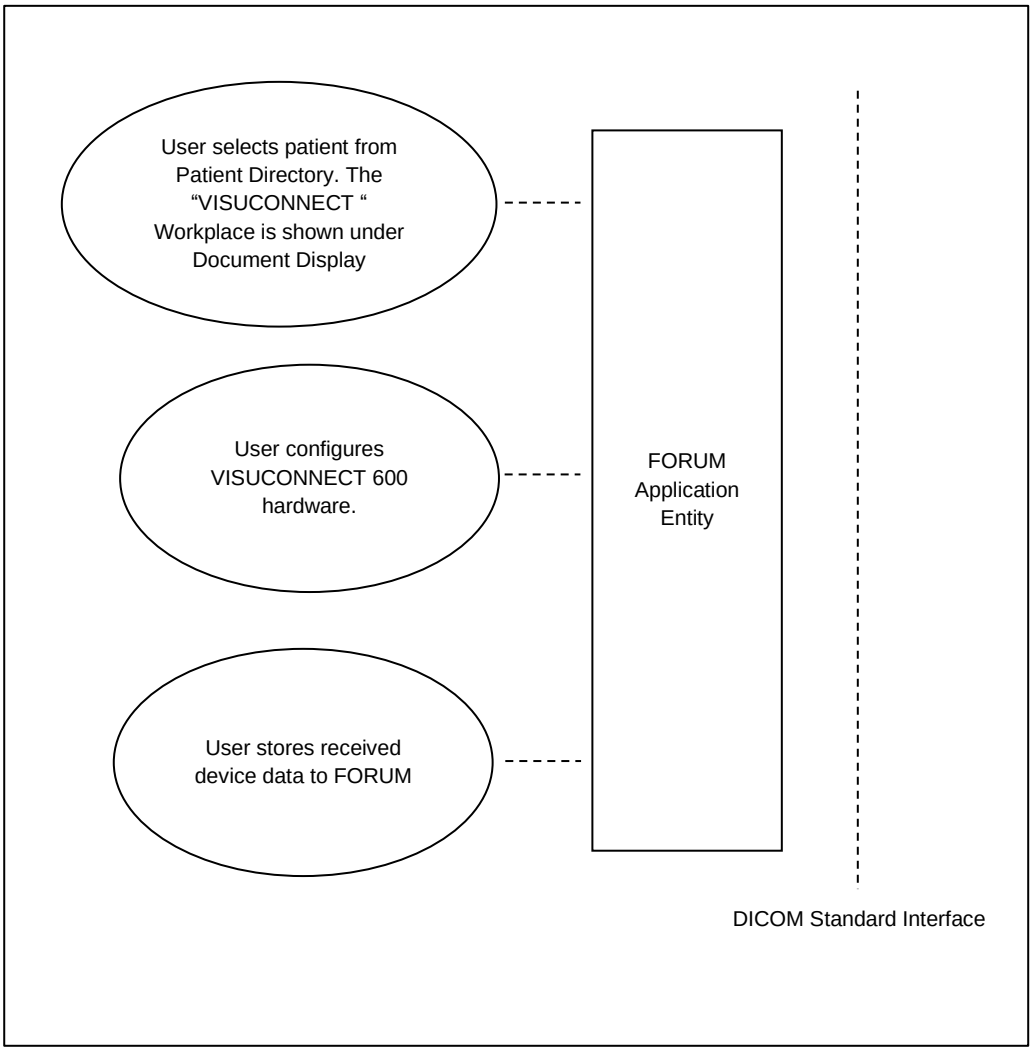

Figure 1: Functional Overview

4.1.2 Functional Definition of AEs

4.1.2.1 Functional Definition of FORUM Application Entity

See FORUM DICOM Conformance Statement.

4.1.2.2 Functional Definition of FORUM Worklist Application Entity

See FORUM DICOM Conformance Statement.

4.1.2.3 Functional Definition of VISUCONNECT 600

VISUCONNECT 600 is an application software that is integrated into CZM FORUM as a plugin.

The main purpose is to capture data from medical devices which have no direct DICOM communication and to store these data records as appropriate SOP instances to the data repository of FORUM from ZEISS. The application software does not offer any direct DICOM communication, however all DICOM communication of VISUCONNECT 600 is managed and provided by FORUM. Please refer to the FORUM DICOM Conformance Statement for any details.

The VISUCONNECT 600 application software allows to:

- capture data from configured devices for a selected patient
- create and preview report for captured data
- store report to FORUM's DICOM repository
- store appropriate SOP instances for captured data to FORUM's DICOM repository
- configure device connection

At minimum a report is generated for each data record captured from a configured device and stored as Encapsulated PDF SOP Instance. Depending on medical device type other SOP instances can be stored as well.

All data received and generated by VISUCONNECT 600 are automatically stored in FORUM Archive and made available for other DICOM activities like Storage to a remote AE, Query/Retrieve by a remote AE or export to local storage media.

4.1.3 Sequencing of Real-World Activities

See FORUM DICOM Conformance Statement.

4.1.3.1 VISUCONNECT 600 Activities

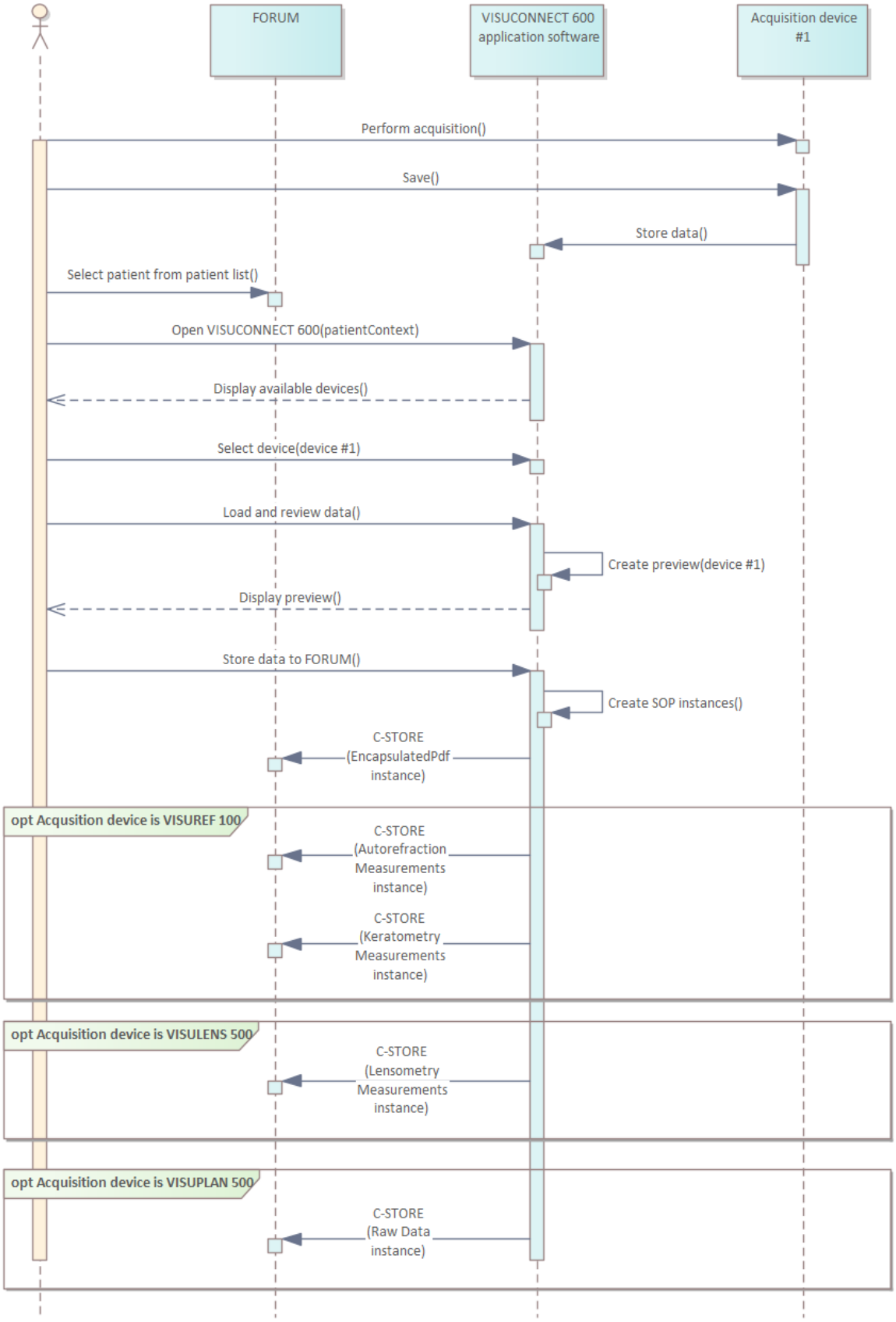

Figure 2: VISUCONNECT 600 activities

Perform Acquisition

User performs acquisition of data at any device configured for VISUCONNECT 600. After all required data is acquired, user selects “Save” and the device sends all acquired data in a non-DICOM format to VISUCONNECT 600 application software (server).

Data created by this activity might become subject of the activity "Store data to FORUM".

This activity can be repeated at any time and VISUCONNECT 600 application software will always keep only the most recent data set for each device.

Select patient

User selects an appropriate patient entry from FORUM’s patient list and opens the “Document Display” for this patient. The selected patient becomes subject for all further activities.

Open VISUCONNECT 600

From the “Document Display” in FORUM the user selects the VISUCONNECT workplace. The currently selected patient is set as patient context for VISUCONNECT 600 application software for all further activities.

VISUCONNECT 600 application software displays a list of connected acquisition devices and indicates for each device whether new acquired data is available.

Select device

The user selects a device entry from the presented device list. The selected device is set as device context for VISUCONNECT 600 application software for all further activities.

Load and review data

The user makes sure the data time stamp for the selected device is appropriate for the current patient and selects “Load data”. The VISUCONNECT 600 application software displays a data preview for the data captured from the device. The user can review the data for completeness and plausibility and can, optionally, add user comments.

Store data to FORUM

The user can trigger the storage of data by selecting “Create Report” from the data preview screen. The VISUCONNECT 600 application software creates an Encapsulated Pdf SOP instance for the captured and reviewed data and performs a DICOM C-STORE to the FORUM Storage Application Entity. Depending on device type additional SOP instances will be transferred to FORUM as well (see chapter 8.1.1 Created SOP Instance(s)).

4.2 AE Specifications

See FORUM DICOM Conformance Statement.

4.3 Network Interfaces

See FORUM DICOM Conformance Statement.

4.4 Configuration

4.4.1 AE Title/Presentation Address Mapping

See FORUM DICOM Conformance Statement for AE Title settings (local/remote) settings.

4.4.2 Parameters

4.4.2.1 General Parameters

See FORUM DICOM Conformance Statement.

5 Media Interchange

See FORUM DICOM Conformance Statement.

6 Support of Character Sets

See FORUM DICOM Conformance Statement.

7 Security

See FORUM DICOM Conformance Statement.

8 Annexes

8.1 IOD Contents

8.1.1 Created SOP Instance(s)

SOP Class UIDs	Supported by
1.2.840.1008.5.1.4.1.1.104.1	Reports of data captured from any supported device
1.2.840.10008.5.1.4.1.1.66	Raw Data Storage captured from VISUPLAN 500
1.2.840.10008.5.1.4.1.1.78.1	Lensometry measurements captured from VISULENS 500
1.2.840.10008.5.1.4.1.1.78.2	Autorefraction Measurements captured from VISUREF 100
1.2.840.10008.5.1.4.1.1.78.3	Keratometry Measurements captured from VISUREF 100

Abbreviations used for Presence of Values (PoV):

VNAP
Value Not Always Present (attribute sent zero length if no value is present)

ANAP
Attribute is not always present

ALWAYS
Attribute is always present with a value

EMPTY
Attribute is sent without a value

Abbreviations used for Sources of Data (Source):

USER
The attribute value source is from User input

AUTO
The attribute value is generated automatically

MWL
The attribute value is the same as the value received using a DICOM service such as Modality Worklist.

CONFIG
The attribute value source is a configurable parameter

ACQUISITION
The sources of data come from data acquisition process. Include Image and data relate to Image

FORUM
The attribute value is the same as the value of the dataset currently selected in FORUM.

8.1.1.1 Encapsulated PDF Information Object Definition

Table 8-1 Encapsulated PDF IOD – Module Overview

IE	Module	References	Presence of Module
Patient			
	Patient	Table 8-6	ALWAYS
	Clinical Trial Subject		NEVER
Study			
	General Study	Table 8-7	ALWAYS
	Patient Study		NEVER
	Clinical Trial Study		NEVER
Series			
	Encapsulated Document Series	Table 8-10	ALWAYS
	Clinical Trial Series		NEVER
	CZM Encapsulated PDF Series Extension		NEVER
Equipment			
	General Equipment	Table 8-8	ALWAYS
	SC Equipment	Table 8-11	ALWAYS
Encapsulated Document			
	Encapsulated Document	Table 8-12	ALWAYS
	SOP Common	Table 8-13	ALWAYS
	CZM Encapsulated PDF Instance Extension	Table 8-14	ALWAYS
	CZM NIM Internal *(private)*	Table 8-15	ALWAYS

8.1.1.2 Autorefraction Measurements Information Object Definition

Table 8-2 Autorefraction Measurements IOD – Module Overview

IE	Module	Reference	Presence of Module
Patient			
	Patient	Table 8-6	ALWAYS
	Clinical Trial Subject		NEVER
Study			
	General Study	Table 8-7	ALWAYS
	Patient Study		NEVER
	Clinical Trial Study		NEVER
Series			
	General Series	Table 8-16	ALWAYS
	Autorefraction Measurements Series	Table 8-17	ALWAYS
	Clinical Trial Series		NEVER
Equipment			
	General Equipment	Table 8-8	ALWAYS
	Enhanced General Equipment	Table 8-9	ALWAYS
Measurements			
	General Ophthalmic Refractive Measurements	Table 8-18	ALWAYS
	Autorefraction Measurements	Table 8-19	ALWAYS
	CZM NIM Internal *(private)*	Table 8-20	ALWAYS
	SOP Common	Table 8-21	ALWAYS

8.1.1.3 Keratometry Measurements Information Object Definition

Table 8-3 Keratometry Measurements IOD – Module Overview

IE	Module	Reference	Presence of Module
Patient			
	Patient	Table 8 6	ALWAYS
	Clinical Trial Subject	Table 8-7	NEVER
Study			
	General Study	Table 8-7	ALWAYS
	Patient Study		NEVER
	Clinical Trial Study		NEVER
Series			
	General Series	Table 8-22	ALWAYS
	Keratometry Measurements Series	Table 8-23	ALWAYS
	Clinical Trial Series		NEVER
Equipment			
	General Equipment	Table 8-8	ALWAYS
	Enhanced General Equipment	Table 8-9	ALWAYS
Measurements			
	General Ophthalmic Refractive Measurements	Table 8-24	ALWAYS
	Keratometry Measurements	Table 8-25	ALWAYS
	CZM NIM Internal *(private)*	Table 8-26	ALWAYS
	SOP Common	Table 8-27	ALWAYS

8.1.1.4 Lensometry Measurements Information Object Definition

Table 8-4 Lensometry Measurements IOD – Module Overview

IE	Module	Reference	Presence of Module
Patient			
	Patient	Table 8-6	ALWAYS
	Clinical Trial Subject		NEVER
Study			
	General Study	Table 8-7	ALWAYS
	Patient Study		NEVER
	Clinical Trial Study		NEVER
Series			
	General Series	Table 8-28	ALWAYS
	Lensometry Measurements Series	Table 8-29	ALWAYS
	Clinical Trial Series		NEVER
Equipment			
	General Equipment	Table 8-8	ALWAYS
	Enhanced General Equipment	Table 8-9	ALWAYS
Measurements			
	General Ophthalmic Refractive Measurements	Table 8-30	ALWAYS
	Lensometry Measurements	Table 8-31	ALWAYS
	Visulens Lensometry Measurements *(private)*	Table 8-32	ALWAYS
	CZM NIM Internal *(private)*	Table 8-33	ALWAYS
	Sop Common	Table 8-34	ALWAYS

8.1.1.5 Raw Data Information Object Definition

Table 8-5 Raw Data IOD – Module Overview

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8-6	ALWAYS
	Clinical Trial Subject		NEVER
Study	General Study	Table 8-7	ALWAYS
	Patient Study		NEVER
	Clinical Trial Study		NEVER
Series	General Series	Table 8-35	ALWAYS
	Clinical Trial Series		NEVER
FrameOfReference	Frame Of Reference		NEVER
	Synchronization		NEVER
Equipment	General Equipment	Table 8-8	ALWAYS
Raw Data	Acquisition Context	Table 8-36	ALWAYS
	Specimen		NEVER
	Raw Data	Table 8-37	ALWAYS
	Non Contact Tonometry Measurements *(private)*	Table 8-38	ALWAYS
	CZM NIM Internal *(private)*	Table 8-39	ALWAYS
	Sop Common	Table 8-40	ALWAYS
	Czm Raw Data Instance Extension		NEVER

8.1.1.6 Common Modules

Table 8-6 Common Modules - Module "Patient"

Attribute Name	Tag	VR	Value	PoV	Source
Patient's Name	(0010,0010)	PN		ALWAYS	FORUM
Patient ID	(0010,0020)	LO		ALWAYS	FORUM
Issuer of Patient ID	(0010,0021)	LO		ANAP	FORUM
Patient's Birth Date	(0010,0030)	DA		VNAP	PRQ
Patient's Sex	(0010,0040)	CS		VNAP	PRQ

Table 8-7 Common Modules - Module "General Study"

Attribute Name	Tag	VR	Value	PoV	Source
Study Instance UID	(0020,000D)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.1." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Study Date	(0008,0020)	DA		ALWAYS	AUTO
Study Time	(0008,0030)	TM		ALWAYS	AUTO
Referring Physician's Name	(0008,0090)	PN		EMPTY	AUTO
Study ID	(0020,0010)	SH	Auto-generated ID	ALWAYS	AUTO
Accession Number	(0008,0050)	SH		EMPTY	AUTO
Study Description	(0008,1030)	LO	Only available in VISULAS	ANAP	AUTO

Table 8-8 Common Modules - Module "General Equipment"

Attribute Name	Tag	VR	Value	PoV	Source
Manufacturer	(0008,0070)	LO	Carl Zeiss Meditec AG	ALWAYS	AUTO
Institution Name	(0008,0080)	LO		ANAP	FORUM
Institution Address	(0008,0081)	ST		ANAP	FORUM
Station Name	(0008,1010)	SH	Host name of VISUCONNECT server	ALWAYS	CONFIG
Manufacturer's Model Name	(0008,1090)	LO	Depending on the acquisition device: - VISULAS - VISULENS 500 - VISUREF 100 - VISUPLAN 500	ALWAYS	AUTO
Device Serial Number	(0018,1000)	LO	Serial number of acquisition device	ALWAYS	AUTO
Software Version(s)	(0018,1020)	LO	Software version of acquisition device	ALWAYS	AUTO

Table 8-9 Common Modules - Module "Enhanced General Equipment"

Attribute Name	Tag	VR	Value	PoV	Source
Manufacturer	(0008,0070)	LO	Carl Zeiss Meditec AG	ALWAYS	AUTO
Manufacturer's Model Name	(0008,1090)	LO	Depending on the acquisition device: - VISULAS - VISULENS 500 - VISUREF 100 - VISUPLAN 500	ALWAYS	AUTO
Device Serial Number	(0018,1000)	LO	Serial number of acquisition device	ALWAYS	AUTO
Software Version(s)	(0018,1020)	LO	Software version of acquisition device	ALWAYS	AUTO

8.1.1.7 Encapsulated PDF IOD Modules

Table 8-10 Encapsulated PDF IOD – Module "Encapsulated Document Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Modality	(0008,0060)	CS	DOC (VISULAS) LEN (VISULENS 500) IOP (VISUPLAN 500) AR (VISUREF 100)	ALWAYS	AUTO
Series Instance UID	(0020,000E)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.2." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO
Series Description	(0008,103E)	LO	Only available in VISULAS	ALWAYS	AUTO

Table 8-11 Encapsulated PDF IOD – Module "SC Equipment Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Conversion Type	(0008,0064)	CS	Describes the kind of image conversion. DI = Digital Interface	ALWAYS	AUTO
Secondary Capture Device Manufacturer	(0018,1016)	LO	Carl Zeiss Meditec AG	ALWAYS	
Secondary Capture Device Manufacturer's Model Name	(0018,1018)	LO	VISUCONNECT 600	ALWAYS	
Secondary Capture Device Software Version(s)	(0018,1019)	LO	2.0.0.152 and higher 2.0.x.y	ALWAYS	

Table 8-12 Encapsulated PDF IOD – Module "Encapsulated Document" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Instance Number	(0020,0013)	IS	1	ALWAYS	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO

Content Time	(0008,0033)	TM		ALWAYS	AUTO
Acquisition Datetime	(0008,002A)	DT		ALWAYS	AUTO
Image Laterality	(0020,0062)	CS		ALWAYS	AUTO
Burned In Annotation	(0028,0301)	CS	YES	ALWAYS	AUTO
Source Instance Sequence	(0042,0013)	SQ		ANAP	AUTO
> Referenced SOP Class UID	(0008,1150)	UI		ALWAYS	AUTO
> Referenced SOP Instance UID	(0008,1155)	UI		ALWAYS	AUTO
> Purpose of Reference Code Sequence	(0040,A170)	SQ		ALWAYS	AUTO
>> Code Value	(0008,0100)	SH	“109102”, “DCM”, “Processing Equipment”	ALWAYS	AUTO
>> Coding Scheme Designator	(0008,0102)	SH	Carl Zeiss Meditec AG	ALWAYS	AUTO
>> Coding Scheme Version	(0008,0103)	SH			
>> Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
Document Title	(0042,0010)	ST	Depending on acquisition device: - Therapeutic Laser (VISULAS) - Automated Lensmeter (VISULENS 500) - Tonometer (VISUPLAN 500) - Autorefractor/Keratometer (VISUREF 100)	ALWAYS	AUTO
Concept Name Code Sequence	(0040,A043)	SQ		EMPTY	AUTO
MIME Type of Encapsulated Document	(0042,0012)	LO	application/pdf	ALWAYS	AUTO
Encapsulated Document	(0042,0011)	OB		ALWAYS	AUTO

Table 8-13 Encapsulated PDF IOD – Module “SOP Common” of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.104.1	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.3." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Specific Character Set	(0008,0005)	CS	“ISO_IR 192”.	ALWAYS	AUTO
Instance Creation Date	(0008,0012)	DA	Current system date	ALWAYS	AUTO
Instance Creation Time	(0008,0013)	TM	Current system time	ALWAYS	AUTO
Timezone Offset From UTC	(0008,0201)	SH		ALWAYS	AUTO

Contributing Equipment Sequence	(0018,A001)	SQ		ALWAYS	AUTO
> Purpose of Reference Code Sequence	(0040,A170)	SQ		ALWAYS	AUTO
>> Include 'Code Sequence Macro'.			“109102”, “DCM”, “Processing Equipment”	ALWAYS	AUTO
> Manufacturer	(0008,0070)	LO	Carl Zeiss Meditec AG	ALWAYS	AUTO
> Manufacturer's Model Name	(0008,1090)	LO	VISUCONNECT 600	ALWAYS	AUTO
> Software Version(s)	(0018,1020)	LO	2.0.0.152 and higher versions 2.0.x.y	ALWAYS	AUTO
> Contribution Date Time	(0018,A002)	DT		ALWAYS	AUTO

Table 8-14 Encapsulated PDF IOD – Module “CZM Encapsulated PDF Instance Extension” (private) of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Image Comments	(0020,4000)	LT		ALWAYS	AUTO

Table 8-15 Encapsulated PDF IOD – Module “CZM NIM Internal” (private) of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Private Creator	(2201,00xx)	LO	99CZM_NIM_INTERNAL_01	ALWAYS	AUTO
Iod_name_meta_info	(2201,xx00)	LT	EncapsulatedPdf	ALWAYS	AUTO
Czm_xml_version	(2201,xx01)	LT	3.0	ALWAYS	AUTO

8.1.1.8 Autorefraction Measurements IOD Modules

Table 8-16 Autorefraction Measurements IOD – Module "General Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Series Instance UID	(0020,000E)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.2." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO

Table 8-17 Autorefraction Measurements IOD – Module "Autorefraction Measurements Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Modality	(0008,0060)	CS	AR	ALWAYS	AUTO

Table 8-18 Autorefraction Measurements IOD – Module "General Ophthalmic Refractive Measurements" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Instance Number	(0020,0013)	IS	1	ALWAYS	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO
Measurement Laterality	(0024,0113)	CS	R, L or B	ALWAYS	AUTO

Table 8-19 Autorefraction Measurements IOD – Module "Autorefraction Measurements" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Autorefraction Right Eye Sequence	(0046,0050)	SQ	Only present if right eye has been measured.	ANAP	ACQUISITION
> Sphere Power	(0046,0146)	FD		ALWAYS	ACQUISITION
> Cylinder Sequence	(0046,0018)	SQ		ANAP	ACQUISITION
>> Cylinder Power	(0046,0147)	FD		ALWAYS	ACQUISITION
>> Cylinder Axis	(0022,0009)	FL		ALWAYS	ACQUISITION
Autorefraction Left Eye Sequence	(0046,0052)	SQ	Only present if left eye has been measured.	ANAP	ACQUISITION
> Sphere Power	(0046,0146)	FD		ALWAYS	ACQUISITION
> Cylinder Sequence	(0046,0018)	SQ		ANAP	ACQUISITION
>> Cylinder Power	(0046,0147)	FD		ALWAYS	ACQUISITION
>> Cylinder Axis	(0022,0009)	FL		ALWAYS	ACQUISITION
Distance Pupillary Distance	(0046,0060)	FD		ANAP	ACQUISITION

Table 8-20 Autorefraction Measurements IOD – Module "CZM NIM Internal" (private) of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Private Creator	(2201,0010)	LO	99CZM_NIM_INTERNAL_01	ALWAYS	AUTO
IOD Name Meta Info	(2201,1000)	LT	VisurefAutorefractionMeasurements	ALWAYS	AUTO
Czm_xml_version	(2201,xx01)	LT	3.0	ALWAYS	AUTO
private_module_names_and_versions	(2201,xx02)	LT	ExtendedAutorefractionMeasurements\ ExtendedAutorefractionParameters	ALWAYS	AUTO
Private Creator	(2909,0010)	LO	99CZM_VISUREF_AR_Parameters	ALWAYS	AUTO

Table 8-21 Autorefraction Measurements IOD – Module "SOP Common" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.78.2	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.3." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Specific Character Set	(0008,0005)	CS	"ISO_IR 192".	ALWAYS	AUTO
Instance Creation Date	(0008,0012)	DA	Current system date	ALWAYS	AUTO
Instance Creation Time	(0008,0013)	TM	Current system time	ALWAYS	AUTO
Timezone Offset From UTC	(0008,0201)	SH		ALWAYS	AUTO
Contributing Equipment Sequence	(0018,A001)	SQ		ALWAYS	AUTO
> Purpose of Reference Code Sequence	(0040,A170)	SQ		ALWAYS	AUTO
>> Include 'Code Sequence Macro'.			"109102", "DCM", "Processing Equipment"	ALWAYS	AUTO
> Manufacturer	(0008,0070)	LO	Carl Zeiss Meditec AG	ALWAYS	AUTO
> Manufacturer's Model Name	(0008,1090)	LO	VISUCONNECT 600	ALWAYS	AUTO
> Software Version(s)	(0018,1020)	LO	2.0.0.152 and higher versions 2.0.x.y	ALWAYS	AUTO
> Contribution Date Time	(0018,A002)	DT		ALWAYS	AUTO

8.1.1.9 Keratometry Measurements IOD Modules

Table 8-22 Keratometry Measurements IOD – Module "General Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Series Instance UID	(0020,000E)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.2." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO

Table 8-23 Keratometry Measurements IOD – Module "Keratometry Measurements Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Modality	(0008,0060)	CS	KER	ALWAYS	AUTO

Table 8-24 Keratometry Measurements IOD – Module "General Ophthalmic Refractive Measurements" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Instance Number	(0020,0013)	IS	1	ALWAYS	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO

Table 8-25 Keratometry Measurements IOD – Module "Keratometry Measurements" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Keratometry Right Eye Sequence	(0046,0070)	SQ	Only present if right eye has been measured.	ANAP	ACQUISITION
> Steep Keratometric Axis Sequence	(0046,0074)	SQ		ALWAYS	ACQUISITION
>> Radius of Curvature	(0046,0075)	FD		ALWAYS	ACQUISITION
>> Keratometric Power	(0046,0076)	FD		ALWAYS	ACQUISITION
>> Keratometric Axis	(0046,0077)	FD		ALWAYS	ACQUISITION
> Flat Keratometric Axis Sequence	(0046,0080)	SQ		ALWAYS	ACQUISITION
>> Radius of Curvature	(0046,0075)	FD		ALWAYS	ACQUISITION
>> Keratometric Power	(0046,0076)	FD		ALWAYS	ACQUISITION
>> Keratometric Axis	(0046,0077)	FD		ALWAYS	ACQUISITION
Keratometry Left Eye Sequence	(0046,0071)	SQ	Only present if right eye has been measured.	ANAP	ACQUISITION
> Steep Keratometric Axis Sequence	(0046,0074)	SQ		ALWAYS	ACQUISITION

>> Radius of Curvature	(0046,0075)	FD		ALWAYS	ACQUISITION
>> Keratometric Power	(0046,0076)	FD		ALWAYS	ACQUISITION
>> Keratometric Axis	(0046,0077)	FD		ALWAYS	ACQUISITION
> Flat Keratometric Axis Sequence	(0046,0080)	SQ		ALWAYS	ACQUISITION
>> Radius of Curvature	(0046,0075)	FD		ALWAYS	ACQUISITION
>> Keratometric Power	(0046,0076)	FD		ALWAYS	ACQUISITION
>> Keratometric Axis	(0046,0077)	FD		ALWAYS	ACQUISITION

Table 8-26 Keratometry Measurements IOD – Module "CZM NIM Internal" (private) of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Private Creator	(2201,0010)	LO	99CZM_NIM_INTERNAL_01	ALWAYS	AUTO
IOD Name Meta Info	(2201,1000)	LT	VisurefKeratometryMeasurements	ALWAYS	AUTO
Czm_xml_version	(2201,xx01)	LT	3.0	ALWAYS	AUTO
private_module_names_and_versions	(2201,xx02)	LT	ExtendedKeratometryMeasurements\ ExtendedKeratometryParameters	ALWAYS	AUTO

Table 8-27 Keratometry Measurements IOD – Module "SOP Common" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.78.3	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.3." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Specific Character Set	(0008,0005)	CS	"ISO_IR 192".	ALWAYS	AUTO
Instance Creation Date	(0008,0012)	DA	Current system date	ALWAYS	AUTO
Instance Creation Time	(0008,0013)	TM	Current system time	ALWAYS	AUTO
Timezone Offset From UTC	(0008,0201)	SH		ALWAYS	AUTO
Contributing Equipment Sequence	(0018,A001)	SQ		ALWAYS	AUTO
> Purpose of Reference Code Sequence	(0040,A170)	SQ		ALWAYS	AUTO
>> Include 'Code Sequence Macro'.			"109102", "DCM", "Processing Equipment"	ALWAYS	AUTO
> Manufacturer	(0008,0070)	LO	Carl Zeiss Meditec AG	ALWAYS	AUTO

> Manufacturer's Model Name	(0008,1090)	LO	VISUCONNECT 600	ALWAYS	AUTO
> Software Version(s)	(0018,1020)	LO	2.0.0.152 and higher versions 2.0.x.y	ALWAYS	AUTO
> Contribution Date Time	(0018,A002)	DT		ALWAYS	AUTO

8.1.1.10 Lensometry Measurements IOD Modules

Table 8-28 Lensometry Measurements IOD – Module "General Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Series Instance UID	(0020,000E)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.2." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO

Table 8-29 Lensometry Measurements IOD – Module "Lensometry Measurements Series" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Modality	(0008,0060)	CS	LEN	ALWAYS	AUTO

Table 8-30 Lensometry Measurements IOD – Module "General Ophthalmic Refractive Measurements" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Instance Number	(0020,0013)	IS	1	ALWAYS	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO

Table 8-31 Lensometry Measurements IOD – Module "Lensometry Measurements" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Lens Description	(0046,0012)	LO		VNAP	ACQUISITION
Right Lens Sequence	(0046,0014)	SQ		ANAP	ACQUISITION
> Sphere Power	(0046,0146)	FD		ALWAYS	ACQUISITION
> Cylinder Sequence	(0046,0018)	SQ		ANAP	ACQUISITION
>> Cylinder Power	(0046,0147)	FD		ALWAYS	ACQUISITION
>> Cylinder Axis	(0022,0009)	FL		ALWAYS	ACQUISITION

> Add Near Sequence	(0046,0100)	SQ		ANAP	ACQUISITION
>> Add Power	(0046,0104)	FD		ALWAYS	ACQUISITION
> Add Intermediate Sequence	(0046,0101)	SQ		ANAP	ACQUISITION
>> Add Power	(0046,0104)	FD		ALWAYS	ACQUISITION
> Prism Sequence	(0046,0028)	SQ		ANAP	ACQUISITION
>> Horizontal Prism Power	(0046,0030)	FD		ALWAYS	ACQUISITION
>> Horizontal Prism Base	(0046,0032)	CS		ALWAYS	ACQUISITION
>> Vertical Prism Power	(0046,0034)	FD		ALWAYS	ACQUISITION
>> Vertical Prism Base	(0046,0036)	CS		ALWAYS	ACQUISITION
Left Lens Sequence	(0046,0015)	SQ		ANAP	ACQUISITION
> Sphere Power	(0046,0146)	FD		ALWAYS	ACQUISITION
> Cylinder Sequence	(0046,0018)	SQ		ANAP	ACQUISITION
>> Cylinder Power	(0046,0147)	FD		ALWAYS	ACQUISITION
>> Cylinder Axis	(0022,0009)	FL		ALWAYS	ACQUISITION
> Add Near Sequence	(0046,0100)	SQ		ANAP	ACQUISITION
>> Add Power	(0046,0104)	FD		ALWAYS	ACQUISITION
> Add Intermediate Sequence	(0046,0101)	SQ		ANAP	ACQUISITION
>> Add Power	(0046,0104)	FD		ALWAYS	ACQUISITION
> Prism Sequence	(0046,0028)	SQ		ANAP	ACQUISITION
>> Horizontal Prism Power	(0046,0030)	FD		ALWAYS	ACQUISITION
>> Horizontal Prism Base	(0046,0032)	CS		ALWAYS	ACQUISITION
>> Vertical Prism Power	(0046,0034)	FD		ALWAYS	ACQUISITION
>> Vertical Prism Base	(0046,0036)	CS		ALWAYS	ACQUISITION

Table 8-32 Lensometry Measurements IOD - Module “Visulens Lensometry Measurements "

Attribute Name	Tag	VR	Value	PoV	Source
Prescription Right Lens sequence	(2801,xx00)	SQ	The fraction of UV - light light that passes through the measured lens optical media, in percent. Contains only one item.	ANAP	ACQUISITION
UV transmittance sequence	>(2801,xx02)	SQ	Contains 4 items, each item representing the UV transmittance measurement at a different wavelength (365 nm, 375 nm, 395 nm and 405 nm)	ANAP	ACQUISITION
UV Transmittance wave length	>>(2801, xx03)	FD	Wavelength in nm the UV transmittance is measured at.	ALWAYS	ACQUISITION
UV Transmittance	>>(2801, xx04))	FD	UV transmittance in percentage measured at the specified wavelength.	ALWAYS	ACQUISITION

Presprition Left Lens sequence	(2801, xx01)	SQ	The fraction of UV- light light that passes through the measured lens optical media, in percent. Contains only one item.	ANAP	ACQUISITION
UV transmittance sequence	>(2801, xx02)	SQ	Contains 4 items, each item representing the UV transmittance measurement at a different wavelength (365 nm, 375 nm, 395 nm and 405 nm)	ANAP	ACQUISITION
UV Transmittance wave length	>>(2801, xx03)	FD	Wavelength in nm the UV transmittance is measured at.	ALWAYS	ACQUISITION
UV Transmittance	>>(2801, xx04)	FD	UV transmittance in percentage measured at the specified wavelength.	ALWAYS	ACQUISITION

Table 8-33 Lensometry Measurements IOD – Module "CZM NIM Internal" (private) of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Private Creator	(2201,0010)	LO	99CZM_NIM_INTERNAL_01	ALWAYS	AUTO
IOD Name Meta Info	(2201,1000)	LT	VisulensLensometryMeasurements	ALWAYS	AUTO
Czm_xml_version	(2201,xx01)	LT	3.0	ALWAYS	AUTO
private_module_names_and_versions	(2201,xx02)	LT	VisulensLensometryMeasurements\ VisulensLensometryParameters	ALWAYS	AUTO
Private Creator	(2801,0010)	LO	99CZM_VISULENS_LensometryMeasurements	ALWAYS	AUTO

Table 8-34 Lensometry Measurements IOD – Module "SOP Common" of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.78.1	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.3." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Specific Character Set	(0008,0005)	CS	"ISO_IR 192".	ALWAYS	AUTO
Instance Creation Date	(0008,0012)	DA	Current system date	ALWAYS	AUTO
Instance Creation Time	(0008,0013)	TM	Current system time	ALWAYS	AUTO
Timezone Offset From UTC	(0008,0201)	SH		ALWAYS	AUTO

Contributing Equipment Sequence	(0018,A001)	SQ		ALWAYS	AUTO
> Purpose of Reference Code Sequence	(0040,A170)	SQ		ALWAYS	AUTO
>> Include 'Code Sequence Macro'.			“109102”, “DCM”, “Processing Equipment”	ALWAYS	AUTO
> Manufacturer	(0008,0070)	LO	Carl Zeiss Meditec AG	ALWAYS	AUTO
> Manufacturer's Model Name	(0008,1090)	LO	VISUCONNECT 600	ALWAYS	AUTO
> Software Versions	(0018,1020)	LO	2.0.0.152 and higher versions 2.0.x.y	ALWAYS	AUTO
> Contribution DateTime	(0018,A002)	DT		ALWAYS	AUTO

8.1.1.11 Raw Data IOD Modules

Table 8-35 Raw Data IOD – Module “General Series” of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Modality	(0008,0060)	CS			
Series Instance UID	(0020,000E)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.2." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO

Table 8-36 Raw Data IOD - Module "Acquisition Context"

Attribute Name	Tag	VR	Value	PoV	Source
Acquisition Context Sequence	(0040,0555)	SQ		EMPTY	AUTO

Table 8-37 Raw Data IOD - Module "Raw Data"

Attribute Name	Tag	VR	Value	PoV	Source
Instance Number	(0020,0013)	IS	1	ALWAYS	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO
Image Laterality	(0020,0062)	CS		ALWAYS	ACQUISITION
Creator-Version UID	(0008,9123)	UI	120.2.0.0.152	ALWAYS	AUTO

Table 8-38 Raw Data IOD - Module "Non Contact Tonometry Measurements"

Attribute Name	Tag	VR	Value	PoV	Source
tonometry right eye sequence	(2601, xx00)	SQ	A sequence that specifies tonometry measurements of a patient's right eye. Only a single Item shall be included in this sequence. Required if Image Laterality (0020,0062) is R or B.	ANAP	ACQUISITION
intraocular pressure sequence	>(2601, xx02)	SQ	Sequence of intraocular pressure measurements. Depends on the measurements taken. This sequence contains between one and four items.	ALWAYS	ACQUISITION
iop	>>(2601, xx03)	FL	Value of intraocular pressure in mmHg.	ALWAYS	ACQUISITION
iop suspicious	>>(2601,xx04)	CS	The value of intraocular pressure may be suspect. Enumerated values: YES, NO	ALWAYS	ACQUISITION
average iop	>(2601, xx05)	FL	Value of average intraocular pressure in mmHg.	ALWAYS	ACQUISITION
average iop suspicious	>(2601, xx06)	CS	The value of average intraocular pressure may be suspect. Enumerated values: YES, NO	ALWAYS	ACQUISITION
tonometry left eye sequence	(2601, xx01)	SQ	A sequence that specifies tonometry measurements of a patient's left eye. Only a single Item shall be included in this sequence. Required if Image Laterality (0020,0062) is L or B.	ANAP	ACQUISITION
intraocular pressure sequence	>(2601, xx02)	SQ	Sequence of intraocular pressure measurements. Depends on the measurements taken. This sequence contains between one and four items.	ALWAYS	ACQUISITION
iop	>>(2601,xx03)	FL	Value of intraocular pressure in mmHg.	ALWAYS	ACQUISITION
iop suspicious	>>(2601, xx04)	CS	The value of intraocular pressure may be suspect. Enumerated values: YES, NO	ALWAYS	ACQUISITION
average iop	>(2601,xx05)	FL	Value of average intraocular pressure in mmHg.	ALWAYS	ACQUISITION
average iop suspicious	>(2601, xx06)	CS	The value of average intraocular pressure may be suspect. Enumerated values: YES, NO	ALWAYS	ACQUISITION

Table 8-39 Raw Data IOD – Module "CZM NIM Internal" (private) of Created SOP Instances

Attribute Name	Tag	VR	Value	PoV	Source
Private Creator	(2201,0010)	LO	99CZM_NIM_INTERNAL_01	ALWAYS	AUTO
IOD Name Meta Info	(2201,1000)	LT	NonContactTonometryRawData	ALWAYS	AUTO
Czm_xml_version	(2201,xx01)	LT	3.0	ALWAYS	AUTO
private_module_names_and_versions	(2201,xx02)	LT	NonContactTonometryMeasurements	ALWAYS	AUTO
Private Creator	(2601,0010)	LO	99CZM_VISUPLAN_NonContactTonometry	ALWAYS	AUTO

Table 8-40 Raw Data IOD - Module "Sop Common"

Attribute Name	Tag	VR	Value	PoV	Source
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.66	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	VISUCONNECT 600 generates a new unique identifier with a constant prefix of " 1.2.276.0.75.2.5.120.25.3." followed by a date/time stamp and machine specific identifier.	ALWAYS	AUTO
Specific Character Set	(0008,0005)	CS	“ISO_IR 192”.	ALWAYS	AUTO
Instance Creation Date	(0008,0012)	DA	Current system date	ALWAYS	AUTO
Instance Creation Time	(0008,0013)	TM	Current system time	ALWAYS	AUTO
Timezone Offset From UTC	(0008,0201)	SH		ALWAYS	AUTO
Contributing Equipment Sequence	(0018,A001)	SQ		ALWAYS	AUTO
> Purpose of Reference Code Sequence	(0040,A170)	SQ		ALWAYS	AUTO
>> Include 'Code Sequence Macro'.			“109102”, “DCM”, “Processing Equipment”	ALWAYS	AUTO
> Manufacturer	(0008,0070)	LO	Carl Zeiss Meditec AG	ALWAYS	AUTO
> Manufacturer's Model Name	(0008,1090)	LO	VISUCONNECT 600	ALWAYS	AUTO
> Software Versions	(0018,1020)	LO	2.0.0.152 and higher versions 2.0.x.y	ALWAYS	AUTO
> Contribution DateTime	(0018,A002)	DT		ALWAYS	AUTO

8.1.2 Usage of Attributes from Received IOD’s

See FORUM DICOM Conformance Statement.

8.1.3 Attribute Mapping

8.1.4 Coerced/Modified Files

See FORUM DICOM Conformance Statement.

8.2 Data Dictionary of Private Attributes

Group ID: 2801
Private Creator String: “99CZM_VISULENS_LensometryMeasurements”
Occurs in: LensometryMeasurements SOP Instance

Attribute Name	Element ID	VR	VM
Prescription Left Lens Sequence	00	SQ	1
Prescription Right Lens Sequence	01	SQ	1
UV transmittance Sequence	02	SQ	1
UV transmittance wavelength	03	FD	1
UV transmittance	04	FD	1

Group ID: 2601
Private Creator String: “99CZM_VISUPLAN_NonContactTonometry”
Occurs in: Non Contact Tonometry Measurements

Attribute Name	Element ID	VR	VM
Tonometry Right Eye Sequence	00	SQ	1
Tonometry Left Eye Sequence	01	SQ	1
Intraocular Pressure Sequence	02	SQ	1
IOP	03	FL	1
IOP Suspicious	04	CS	1
Average IOP	05	FL	1
Average IOP Suspicious	06	CS	1

Table 8-41 Private Dictionary Group (2201,00xx) = “99CZM_NIM_INTERNAL_01”
Occurs in: all instances generated by VISUCONNECT 600

Tag	Attribute Name	VR	VM
(2201,00xx)	Private Creator	LO	1
(2201,xx00)	iod_name_meta_info	LT	1
(2201,xx01)	czm_xml_version	LT	1
(2201,xx02)	private_module_names_and_versions (not for ePDF)	LT	1

8.3 Coded Terminology and Templates

This chapter describes the coded terminology and templates used by the application entity. This includes especially the used codes and DICOM Content Mapping Resource context groups where the codes are taken from.

VISUCONNECT 600 uses (0040,A170) Purpose of Reference Code Sequence with following codes to track the processing equipment.

Occurs in: all instances generated by VISUCONNECT 600

Table 8-42 Purpose of Reference Code Sequence

Code Value	Coding Scheme Designator	Code Meaning
109102	DCM	" Processing Equipment"

8.3.1 Context Groups

N/A as no Context Groups are used.

8.3.2 Template Specifications

N/A as no extensions to standard templates or private templates are used.

8.3.3 Private Code Definitions

N/A as no private codes are used.

8.4 Greyscale Image Consistency

N/A as the DICOM Grayscale Standard Display Function is not supported.

8.5 Standard Extended / Specialized/ Private SOP Classes

VISUCONNECT 600 uses Standard Extended SOP Classes by adding the following private Modules to created SOP Instances (see Section 8.1.1 for details):

- CZM NIM Internal Module (Table 8-20) is added to the Autorefraction Measurements IOD.
- CZM NIM Internal Module (Table 8-26) is added to the Keratometry Measurements IOD.
- Visulens Lensometry Measurements Module (Table 8-32) and CZM NIM Internal Module (Table 8-33) are added to the Lensometry Measurement IOD.
- Non Contact Tonometry Measurements Module (Table 8-38) and CZM NIM Internal Module (Table 8-41) are added to the RAW IOD.

VISUCONNECT 600 does not use or support any Specialized SOP Class or Private SOP Class.

8.6 Private Transfer Syntaxes

N/A as no Private Transfer Syntax is supported.

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