



DICOM Conformance Statement

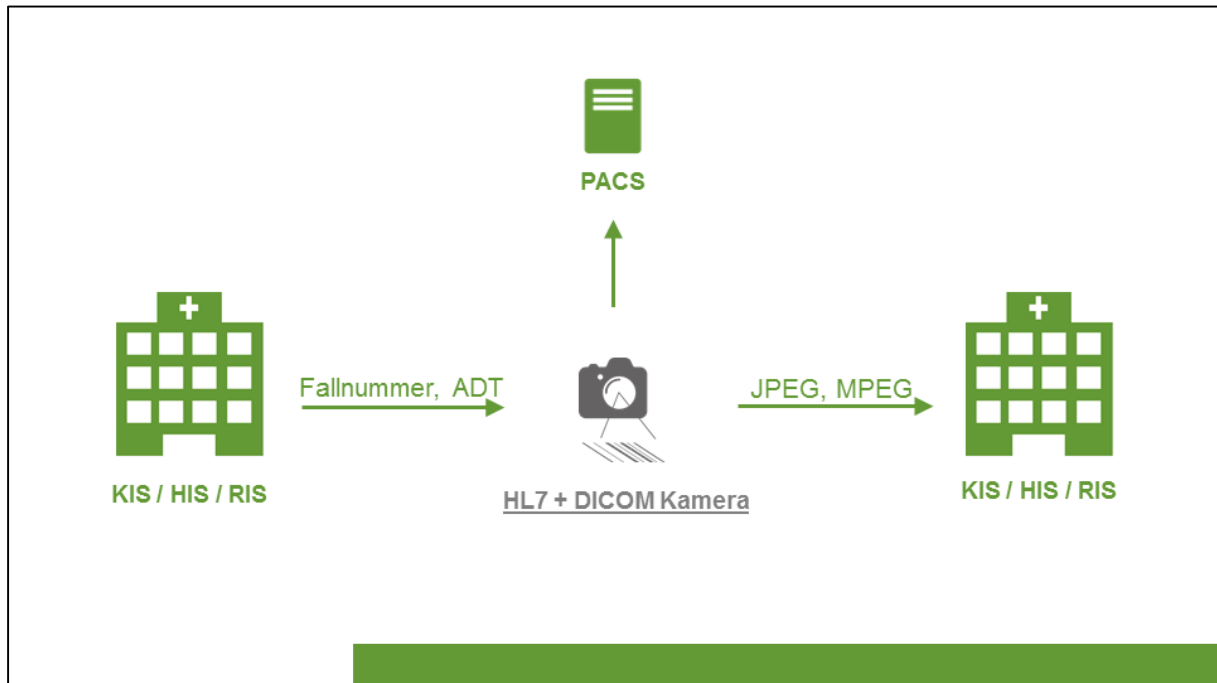
HL7-Kamera

Version 1.1

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1 Conformance Statement Overview

The HL7-Kamera is an image acquisition system which converts images taken by the camera module into a DICOM compliant format. It provides the following DICOM features:

- Save acquired images to the Image Archive (PACS) or other DICOM C-STORE Service Class Provider.

Table 1 presents an overview of the DICOM network services supported by DIANA.

Table 1: Network Services

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer		
Verification	Yes	No
Secondary Capture Image Storage	Yes	No
Multi-frame True Color Secondary Capture Image Storage	Yes	No
Visible Light Photographic Image Storage	Yes	No

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3 Introduction

3.1 Revision History

The revision history provides dates and differences of the different releases of the HL7Kamera

Version	Date	Author	Chapter	Remarks
1	16.06.2015	Edgar Lenz	All	Initial version

3.2 Audience

This Conformance Statement is intended for:

- (potential) customers,
- marketing staff interested in system and data exchange functionality,
- support engineers and system integrators of medical equipment,
- software designers and implementers of DICOM interfaces.
- It is assumed that the reader is familiar with the DICOM standard.

3.3 Remarks

This Conformance Statement by itself does not guarantee successful interoperability with other equipment. The user (or user's agent) should be aware of the following issues:

Interoperability

Integration of (networked) systems may require application functions that are not specified within the scope of DICOM.

It is the user's (or a user's agent) responsibility to analyse the application requirements and to specify a solution that integrates different vendors equipment.

Validation

If the comparison of Conformance Statements indicate that the required information exchange should be possible, additional validation tests will be necessary.

It is the responsibility of the user (or user's agent) to specify the appropriate test suite and to carry out the additional validation tests.

3.4 Contents and structure

The DICOM Conformance Statement is contained in chapter 2 through 7 and follows the contents and structuring requirements of DICOM PS 3.2-2014.

3.5 Used definitions and terms

For a description of these, see NEMA PS 3.3-2014 and PS 3.4-2014.

3.6 Abbreviations

The following acronyms and abbreviations are used in the document.

ACR	American College of Radiology
AE	Application Entity
ANSI	American National Standard Institute
CD-R	Compact Disk Recorder
DICOM	Digital Imaging and Communication in Medicine
EBE	Explicit VR Big Endian
ELE	Explicit VR Little Endian
FSC	File Set Creator
GUI	Graphical User Interface
HIS	Hospital Information System
ILE	Implicit VR Little Endian
IOD	Image Object Definition
N.A.	Not applicable
NEMA	National Electric Manufacturers Association
OS	Operating System
PACS	Picture Archiving and Communication System
PDU	Protocol Data Unit
RIS	Radiology Information System
RWA	Real World Activity
SC	Secondary Capture/Service Class
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair
TCP/IP	Transmission Control Protocol/Internet protocol
UID	Unique Identifier
VL	Visible Light
VR	Value Representation
XP	Microsoft Windows XP Operation System

3.7 References

[DICOM] The Digital Imaging and Communications in Medicine (DICOM) standard:
NEMA PS 3.X.

National Electrical Manufacturers Association (NEMA) Publication Sales
1300 N. 17th Street, Suite 1847
Rosslyn, Va. 22209, United States of America

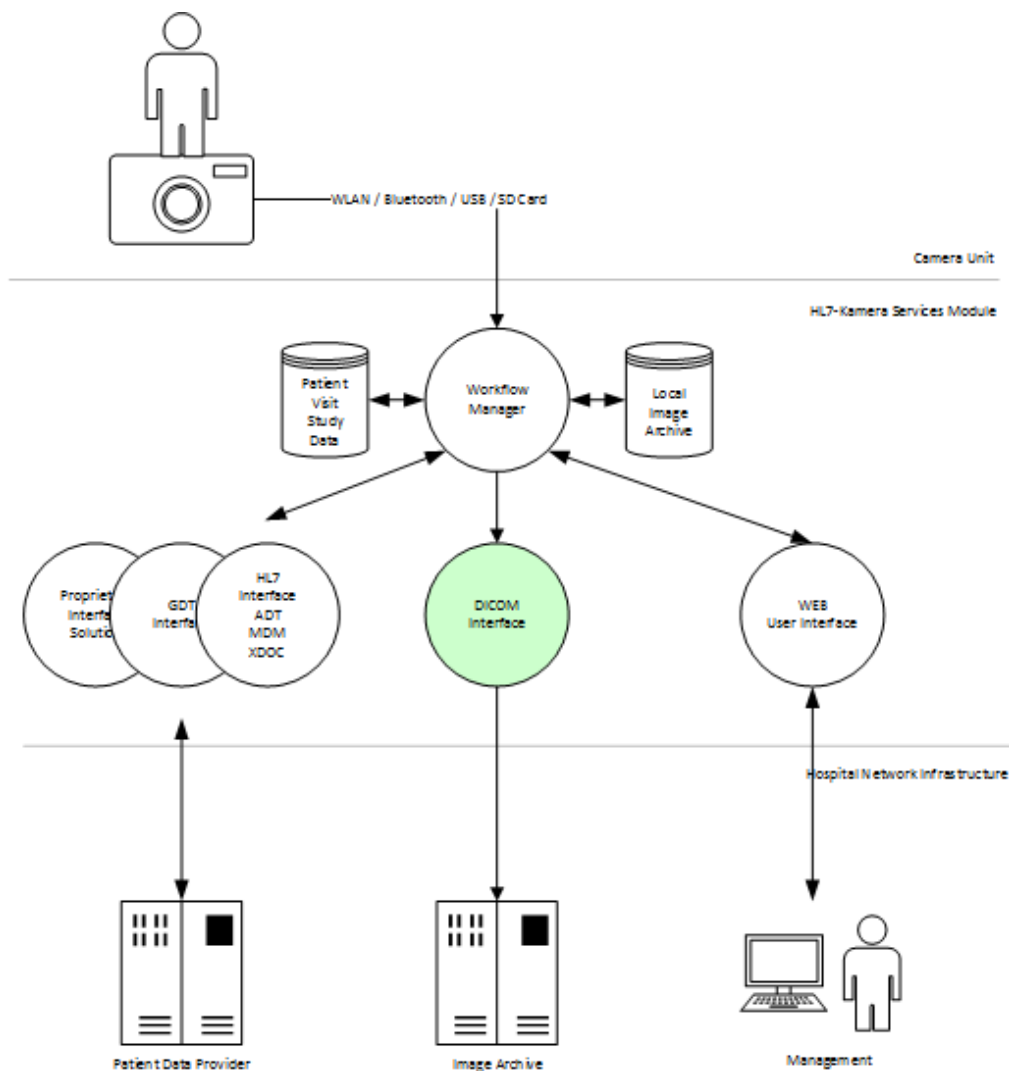
[DicomNet] DEKOM ENGINEERING DicomNet Systems Product Line
DEKOM ENGINEERING GmbH (see address at page ii)

4 Networking

4.1 Implementation Model

The HL7-Kamera System consists of services running on a computer to interact with Digital Cameras on one end and with the local hospital network infrastructure on the other hand. It shall help to relate images to patient / study data, manage and view images and interact with a given infrastructure using standard interfaces like HL7 and DICOM.

4.1.1 System Overview



The HL7-Kamera Services Module detects images received from the Camera Module by WLAN, Bluetooth, USB or SD Card, uses the provided Image Meta Data and/or Barcode information to match against Patient or Visit information gathered by HL7 / GDT or other proprietary interfaces. The HL7-Kamera Services Module's DICOM Interface can store those images as DICOM compliant image IODs to an Image Archive using standard DICOM C-STORE operations.

The above DICOM functionality is described in this document.

4.1.2 Application Data Flow

The Application Entity (AE) QStore AE represents the DICOM connectivity of the HL7-Kamera system.

The related Application Data Flow for this AE is shown in the next figure.

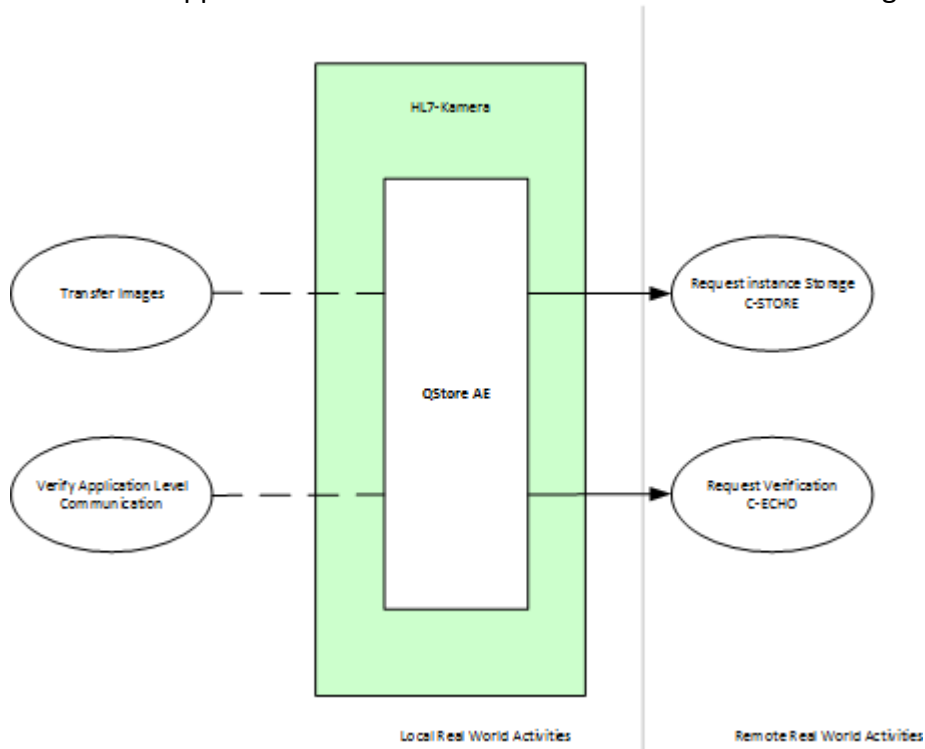


Figure 1: The HL7-Kamera Application Data Flow Diagram

4.1.3 Functional definition of Application Entities

This section describes in general terms the functions performed by QStore AE.

4.1.3.1 Functional Definition of QStore AE

4.1.3.1.1 Storage Service Class

The QStore AE acts as a SCU of the Storage Service Class. When the export is initiated through the local RWA “Transfer Images” the QStore AE will open an association to the configured remote system and convert the acquired images and related data to a DICOM message to be sent to the remote system. The local RWA “Transfer Images” is triggered either by user interaction or automatically by detecting new images in its input based on the systems configuration.

4.1.3.1.2 Verification Service Class

The QStore AE can perform the Verification Service as SCU to the (one, preconfigured) PACS system. This is triggered by the operator in the service mode.

4.1.4 Sequencing of Real World Activities

The following sequence of Real World Activities are supported by HL7-Kamera.

- The user acquires images with the Camera Module.
- The user transfers the images via WLAN, Bluetooth, USB connection or SD-Card to the Service Module which stores the images to its local archive.

One of the most important features of the HL7-Kamera is the opportunity to relate Barcode information either embedded within the images metadata (as provided by a few camera systems) or within the image pixel data (discovered by image processing) automatically to information present in the Patient / Visit / Study Data Store which is populated by e.g. a HL7 ADT inbound feed.

If barcode information is present and matches a dataset in the Patient / Visit / Study Data Store and automatic transfer is configured the RWA Transfer Images triggers QStore AE to store the images to the configured default destination.

In any other case the operator can relate images to patient information present in the Data Store or enter required information manually using the provided user interface. The related patient information is stored in the HL7-Kamera's local archive and if automatic transfer is configured the QStore AE is triggered to store the images to the configured default destination.

The operator can at any time select images from the local archive and trigger the store operation to the default or another configured store destination. If required patient data is missing for the selected images, unique values are generated by the system and a warning is displayed.

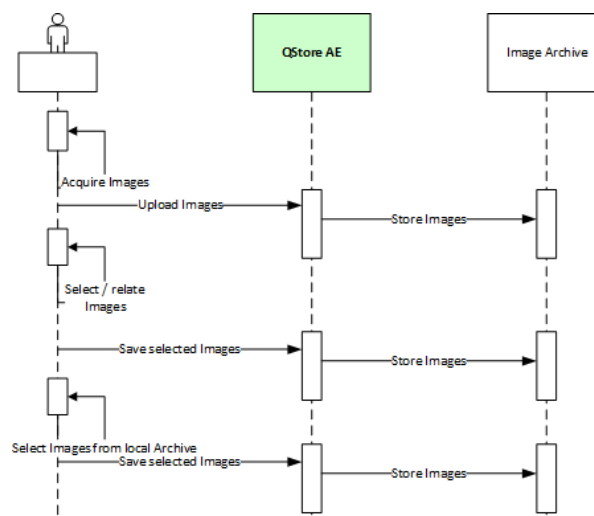


Figure 2: The HL7-Kamera Sequence of Real World Activities

4.2 AE Specifications

4.2.1 QStore AE Specification

4.2.1.1 SOP Classes

The HL7-Kamera's QStore AE provides Standard Conformance to the following DICOM V 3.0 SOP classes as an SCU.

Table 2: Supported SOP Classes for QStore AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
Multi-frame True Color Secondary Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	No
Visible Light Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No

The HL7-Kamera's QStore AE does not support DICOM V 3.0 SOP Classes as an SCP.

4.2.1.2 Association Establishment Policies

4.2.1.2.1 General

The DICOM standard application context name for DICOM 3.0 is always proposed as presented in Table 3. The PDU size is configurable from a minimum of 4096 bytes.

Table 3: DICOM Application Context

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

4.2.1.2.2 Number of Associations

QStore AE will establish a maximum of two associations at a time. Based on local activities, one association may perform Application Level Communication Verification, another association may be used for image storage.

Table 4: Number of Associations as an Association Initiator for QStore AE

Maximum number of simultaneous associations	2
---	---

QStore AE will not handle incoming associations.

Table 5: Number of Associations as an Association Acceptor for QStore AE

Maximum number of simultaneous associations	N.A.
---	------

4.2.1.2.3 Asynchronous Nature

QStore AE does not support asynchronous operations and will not perform asynchronous window negotiation.

Table 6: Asynchronous Nature as an Association Initiator for QStore AE

Maximum number of outstanding asynchronous transactions	1
---	---

4.2.1.2.4 Implementation Identifying Information

The implementation information for QStore AE is:

Table 7: DICOM Implementation Class and Version for QStore AE

Implementation Class UID	2.16.840.1.113669.632.16
Implementation Version Name	QDICNET_3X *

* X identifies the version number.

4.2.1.3 Association Initiation Policy

The QStore AE initiates associations as a result of the following events:

- On “Store Images” (see chapter 4.1.4)
- The service engineers tries to validate the Application Level Communication using the Service GUI as

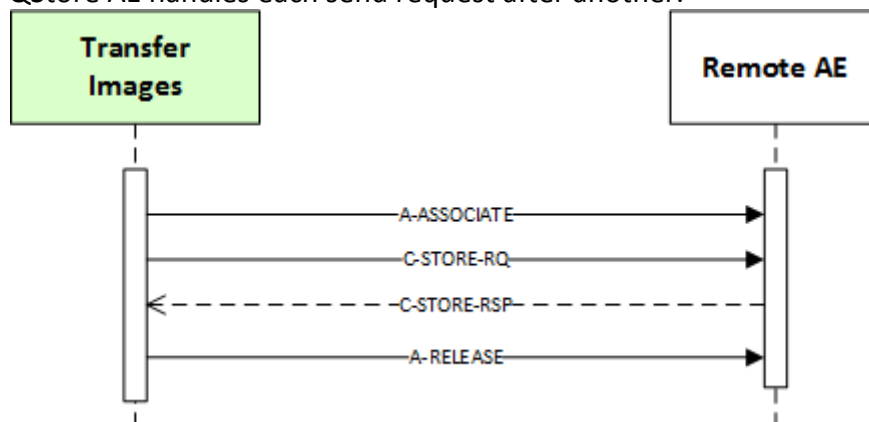
4.2.1.3.1 Transfer Images

4.2.1.3.1.1 Description and Sequencing of Activities

QStore AE initiates one association to the configured or selected SCP and uses it to send the images via C-STORE requests. If the examination contains multiple images then multiple C-STORE requests will be issued within the same association.

The association will be closed after successful transfer of all images or when an error occurs.

QStore AE handles each send request after another.



4.2.1.3.1.2 Proposed Presentation Contexts

Each time an association is initiated QStore AE will use the configured Abstract Syntax (see chapter 4.4.1) and propose all its Transfer Syntax as presentation contexts as listed in Table 8.

Table 8: Presentation Contexts for QStore AE Transfer Images

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	ILE ELE LOL* LOS**	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.4.50	SCU	None
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	ILE ELE LOL* LOS**	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.4.50	SCU	None
Visible Light Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	ILE ELE LOL* LOS**	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.70 1.2.840.10008.1.2.4.50	SCU	None

4.2.1.3.1.3 SOP Specific Conformance for Image SOP Classes

All image SOP Classes supported by QStore AE exhibit the same behavior. In the case no presentation context for an abstract syntax can be negotiated, instances of this SOP Class will not be sent and the transfer job is marked as failed. The failure is logged and presented to the user via the GUI.

The behavior of QStore AE Transfer Images for status codes in a C-STORE response is summarized in Table 9.

Table 9: Response Status Handling Behavior for QStore AE Transfer Images

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful operation	If all SOP instances in a transfer job have status success then the job is marked completed. The result is logged and reported to the user.
Refused	A700-A7FF	Out of Resources	The association is aborted using A-ABORT and the job is marked as failed. The failure is logged and reported to the user.

Error	A900-A9FF	Data Set does not match SOP Class	The association is aborted using A-ABORT and the job is marked as failed. The failure is logged and reported to the user.
	C001-CFFF	Cannot understand	The association is aborted using A-ABORT and the job is marked as failed. The failure is logged and reported to the user.
Warning	B000	Coercion of Data Elements	The image transmission is considered successful. A warning is logged, no message is reported to the user interface.
	B006	Elements discarded	The image transmission is considered successful. A warning is logged, no message is reported to the user interface.
	B007	Data Set does not match SOP Class	The image transmission is considered successful. A warning is logged, no message is reported to the user interface.
*	Any other status code	*	The association is aborted using A-ABORT and the job is marked as failed. The failure is logged and reported to the user.

The behavior of the QStore AE during communication failure is presented in Table 10.

Table 10: Communication Failure Behavior for QStore AE Transfer Images

Exception	Behavior
Timeout	The association is aborted using A-ABORT and the job is marked as failed. The failure is logged and reported to the user.
Association aborted	The job is marked as failed. The failure is logged and reported to the user.
Association rejected	The job is marked as failed. The failure is logged and reported to the user.

4.2.1.3.2 Verify Application Level Communication

4.2.1.3.2.1 Description and Sequencing of Activities

For each Verify Application Level Communication request QStore AE initiates and association to the remote system and transmits a C-ECHO request.
After the response is received the association is closed.

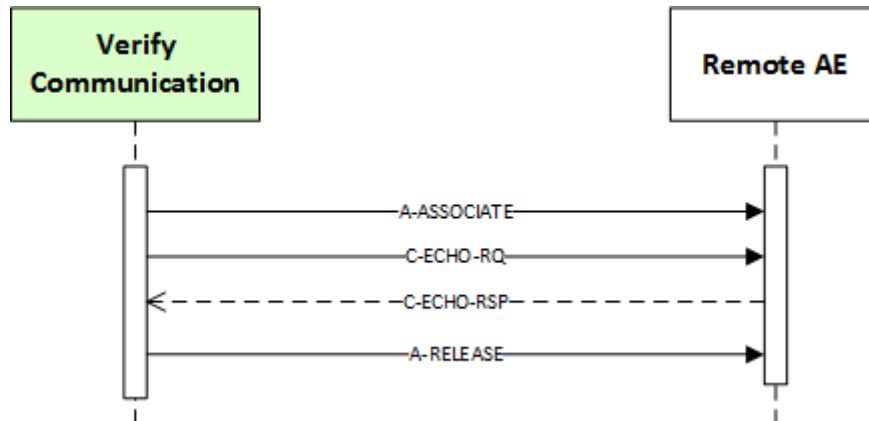


Figure 3: Sequencing of RWA Verify Application Level Communication

4.2.1.3.2.2 Proposed Presentation Contexts

The presentation context proposed by QStore AE Verify Application Level Communication is defined in Table 11.

The implementation will choose ELE transfer syntax in the case multiple transfer syntaxes are accepted by the SCP.

Table 11: Proposed Presentation Contexts for QWorklist AE Verify Application Level Communication

Presentation Context table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	ILE ELE	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

4.2.1.3.2.3 SOP Specific Conformance for Verification SOP Class

The behavior of the QStore AE for status codes in a Verification response is presented in Table 12.

Table 12: Response Status Handling Behavior for QStore AE Verify Application Level Communication

Service Status	Error Code	Further Meaning	Behavior
Success	0000	Successful operation	The success is reported to the user
*	Any other code	*	The failure is reported to the user

The behaviour of the QStore AE during communication failure is presented in Table 13.

Table 13: Communication Failure Behavior for QStore AE Verify Application Level Communication

Exception	Behavior
Timeout	The reason is logged, a failure status is reported to the user.
Association aborted	The reason is logged, a failure status is reported to the user.
Association rejected	The reason is logged, a failure status is reported to the user.

4.2.1.4 Association Acceptance Policy

The HL7-Kameras QStore AE does not accept associations.

4.3 Network Interfaces

4.3.1 Physical Network Interface

The HL7-Kamera provides DICOM V3.0 TCP/IP Network Communication.
The TCP/IP stack is inherited from the Windows operating system.

The HL7-Kamera supports a single network interface: Ethernet ISO.8802-3. Standard AUJ, optional twisted pair 100/1000-BaseT.

4.3.2 Additional Protocols

Additional protocols like DHCP, DNS and NTP may be present in the Windows operating system, its usage is transparent for the HL7-Kamera.

4.4 Configuration

The HL7-Kameras QStore AE are configured via the Service / Installation Tool. The Service / Installation Tool is intended to be used by DEKOM Service Engineers only. The configuration is stored in configuration repositories.

4.4.1 AE Title/Presentation Address Mapping

4.4.1.1 Local AE Titles

No default AE Titles are provided, they must be configured during installation.

Application Entity	Default AE Title	Default TCP/IP Port
QStore AE	No Default	N.A.

4.4.1.2 Remote AE Titles/Presentation Address Mapping

The AE Title, host names / IP addresses and port numbers of remote applications are configured using the HL7-Kameras Service/Installation Tool.

4.4.1.2.1 QStore AE

The AE Title, host name / IP address and port number of the remote STORE SCP is configured using the HL7-Kamera Service/Installation Tool.
Multiple Store nodes can be configured.

4.4.2 Parameters

A large number of parameters related to image acquisition and general operation can be configured using the HL7-Kamera Service/Installation Tool (see the HL7-Kamera Service Manual). The following table presents just parameter relevant to the DICOM communication.

Table 14: Configurable Parameters

Parameter	Configurable (Yes / No)	Default Value
QStore AE (local System)		
AE Title	Yes	No Default
Max PDU Size	Yes	
Time-out waiting for an acceptance or rejection to an Association Request(Application Level Timeout)	Yes	15 s
Time-out waiting for a response to an Association Release Request(Application Level Timeout)	No	15 s
Abstract Syntax to be used by QStore AE (one of the values listed in Table 8)	Yes	Secondary Capture Image Storage
QStore AE (Remote System)		
AE Title	Yes	No Default
IP host name/address	Yes	No Default
Port Number	Yes	No Default
Time-out waiting for a response to a C-STORE-RQ	Yes	15 sec

5 Media Interchange

The HL7-Kameras does not support DICOM Media Storage.

6 Support of Character Sets

The following character sets are supported by the HL7-Kameras DICOM application:

ISO_IR 100 (ISO 8859-1 Latin Alphabet No. 1 supplementary set)

7 Security

The DICOM application of the HL7-Kamera do not support any specific security measures.

It is assumed that the HL7-Kamera is used within a secured environment. It is assumed that a secured environment includes at a minimum:

- Firewall or routers protections to ensure that only approved external hosts have network access to the HL7-Kamera.
- Firewall or router protections to ensure that HL7-Kamera only has network access to approved external hosts and services.
- Any communication with external hosts and services outside the locally secured environment use appropriate secure network channels (e.g. such as Virtual Private Network (VPN)).

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

8 Annexes

8.1 IOD Contents

8.1.1 Created SOP Instances

Examples of DICOM instances can be downloaded from <http://www.dekom-medical.de/ConformanceStatements>

Table 15 specifies the attributes of a Secondary Capture Image transmitted by the HL7-Kameras QStore AE application.

Table 16 specifies the attributes of a Multi-frame True Color Secondary Capture Image transmitted by the HL7-Kameras QStore AE application.

Table 17 specifies the attributes of a Visible Light Photographic Image transmitted by the HL7-Kameras QStore AE application.

The following tables use a number of abbreviations. The abbreviations used in the “Presence of ...” column are:

VNAP	Value Not Always Present (attribute sent zero length if no value is present)
ANAP	Attribute Not Always Present
ALWAYS	Always Present
NEVER	Never Present
EMPTY	Attribute is sent without a value

The abbreviations used in the “Source” column:

IMD	the attribute value source from Image Meta Data
PDP	the attribute value source from Patient Data Provider
USER	the attribute value source is from User input
AUTO	the attribute value is generated automatically
CONFIG	the attribute value source is a configurable parameter

8.1.1.1 Secondary Capture Image IOD

Table 15: IOD of Created Secondary Capture SOP Instances

IE	Module	Reference	Presence of Module
Patient	Patient	Table 18	ALWAYS
Study	General Study	Table 19	ALWAYS
	Patient Study	Table 20	ALWAYS
Series	General Series	Table 21	ALWAYS
Equipment	General Equipment	Table 22	ALWAYS
	SC Equipment	Table 27	ALWAYS
Image	General Image	Table 23	ALWAYS
	Image Pixel	Table 24	ALWAYS
	SC Image	Table 31	ALWAYS
	VOI LUT	Table 25	ALWAYS
	SOP Common	Table 26	ALWAYS

8.1.1.2 Multi-frame True Color Secondary Capture Image IOD

Table 16: IOD of Created Multi-frame True Color Secondary Capture SOP Instances

E	Module	Reference	Presence of Module
Patient	Patient	Table 18	ALWAYS
Study	General Study	Table 19	ALWAYS
	Patient Study	Table 20	ALWAYS
Series	General Series	Table 21	ALWAYS
Equipment	General Equipment	Table 22	ALWAYS
	SC Equipment	Table 27	ALWAYS
Image	General Image	Table 23	ALWAYS
	Image Pixel	Table 24	ALWAYS
	Cine	Table 28	ALWAYS
	Multi-frame	Table 29	ALWAYS
	SC Image	Table 31	ALWAYS
	SC Multi-frame Image	Table 30	ALWAYS
	SOP Common	Table 26	ALWAYS

8.1.1.3 Visible Light Photographic Image IOD

Table 17: IOD of Created Visible Light Photographic SOP Instances

IE	Module	Reference	Presence of Module
Patient	Patient	Table 18	ALWAYS
Study	General Study	Table 19	ALWAYS
	Patient Study	Table 20	ALWAYS
Series	General Series	Table 21	ALWAYS
Equipment	General Equipment	Table 22	ALWAYS
Image	General Image	Table 23	ALWAYS
	Image Pixel	Table 24	ALWAYS
	Acquisition Context	Table 32	ALWAYS
	VL Image	Table 33	ALWAYS
	SOP Common	Table 26	ALWAYS

8.1.1.4 Common Modules

Table 18: Patient Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Name	0010,0010	PN	In the case the user selects an „Emergency Patient“ a template based auto generated value is used	ALWAYS	PDP/USER/AUTO
Patient ID	0010,0020	LO	In the case the user selects an „Emergency Patient“ a template based auto generated value is used	ALWAYS	PDP/USER/AUTO
Patient's Birth Date	0010,0030	DA		VNAP	PDP/USER
Patient's Sex	0010,0040	CS		VNAP	PDP/USER

Table 19: General Study Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Study Instance UID	0020,000D	UI	auto generated	ALWAYS	AUTO
Study Date	0008,0020	DA		ALWAYS	IMD
Study Time	0008,0030	TM		ALWAYS	IMD
Referring Physician's Name	0008,0090	PN	Taken from PDP or empty	VNAP	PDP
Study ID	0020,0010	SH	Taken from PDP or empty	VNAP	PDP
Accession Number	0010,0020	SH		ALWAYS	AUTO

Study Description	0008,1030	LO		VNAP	USER
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Table 20: Patient Study Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Admission ID	0038,0010	LO	Taken from PDP or empty	VNAP	PDP

Table 21: General Series Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	0008,0060	CS	XC	ALWAYS	AUTO
Series Instance UID	0020,000E	UI		ALWAYS	AUTO
Series Number	0020,0011	IS		ALWAYS	AUTO
Series Date	0008,0021	DA		ALWAYS	IMD
Series Time	0008,0031	TM		ALWAYS	IMD

Table 22: General Equipment Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	0008,0070	LO		ALWAYS	IMD
Institution Name	0008,0080	LO		ALWAYS	CONFIG
Manufacturer's Model Name	0008,1090	LO		ALWAYS	IMD
Device Serial Number	0018,1000	LO		ALWAYS	IMD
Software Versions	0018,1020	LO		ALWAYS	IMD

Table 23: General Image Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	0020,0013	IS	1	ALWAYS	AUTO
Image Type	0008,0008	CS	Value 1: ORIGINAL Value 2: PRIMARY	ALWAYS	AUTO
Acquisition Date	0008,0022	DA		ALWAYS	IMD
Acquisition Time	0008,0032	TM		ALWAYS	IMD
Lossy Image Compression	0028,2110	CS	Dependent on the Transfer Syntax used/Camera setting.	ALWAYS	AUTO

Table 24: Image Pixel Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	0028,0002	US	3	ALWAYS	AUTO
Photometric Interpretation	0028,0004	CS	RGB or YBR_FULL_422	ALWAYS	AUTO
Rows	0028,0010	US		ALWAYS	AUTO

Columns	0028,0011	US		ALWAYS	AUTO
Bits Allocated	0028,0100	US	8	ALWAYS	AUTO
Bits Stored	0028,0101	US	8	ALWAYS	AUTO
High Bit	0028,0102	US	7	ALWAYS	AUTO
Pixel Representation	0028,0103	US	0	ALWAYS	AUTO
Planar Configuration	0028,0006	US	0	ALWAYS	AUTO
Pixel Data	7FE0,0010	OW		ALWAYS	AUTO

Table 25: VOI LUT Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Window Center	0028,1050	DS	128	ALWAYS	AUTO
Window Width	0028,1051	DS	255	ALWAYS	AUTO

Table 26: SOP Common Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	0008,0005	CS	ISO_IR 100	ALWAYS	AUTO
SOP Class UID	0008,0016	UI		ALWAYS	AUTO
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO

Table 27: SC Equipment Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Conversion Type	0008,0064	CS	DI	ALWAYS	AUTO
Secondary Capture Device Manufacturer	0018,1016	LO	DEKOM – Engineering GmbH	ALWAYS	AUTO
Secondary Capture Device Manufacturer's Model Name	0018,1018	LO	HL7 - Kamera	ALWAYS	AUTO
Secondary Capture Device Software Versions	0018,1019	LO		ALWAYS	AUTO

Table 28: Cine Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Frame Time	0018,1063	DS	0	ALWAYS	AUTO

Table 29: Multi-Frame Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
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Number Of Frames	0028,0008	IS	1	ALWAYS	AUTO
Frame Increment Pointer	0028,0009	AT	0018,1063	ALWAYS	AUTO

Table 30: SC Multi-Frame Image Module (Color) of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Burned In Annotation	0028,0301	CS	NO	ALWAYS	AUTO
Frame Increment Pointer	0028,0009	AT		NEVER	

Table 31: SC Image Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
			No attribute of this module is used	NEVER	

Table 32: Acquisition Context Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Acquisition Context Sequence	0040,0555	SQ	Empty Sequence	EMPTY	AUTO

Table 33: VL Image Module of created SOP Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Type	0008,0008	CS	Value 1: ORIGINAL Value 2: PRIMARY	ALWAYS	AUTO
Photometric Interpretation	0028,0004	CS	RGB or YBR_FULL_422	ALWAYS	AUTO
Bits Allocated	0028,0100	US	8	ALWAYS	AUTO
Bits Stored	0028,0101	US	8	ALWAYS	AUTO
High Bit	0028,0102	US	7	ALWAYS	AUTO
Pixel Representation	0028,0103	US	0	ALWAYS	AUTO
Samples per Pixel	0028,0002	US	3	ALWAYS	AUTO
Planar Configuration	0028,0006	US	0	ALWAYS	AUTO
Lossy Image Compression	0028,2110	CS	Dependent on the Transfer Syntax used/Camera setting.	ALWAYS	AUTO

*NOTE: values given in the VL Image Module Table overrule related entries in the General Image Module, Image Pixel Module and VOI Module.

8.1.2 Used Fields in received IODs

The HL7-Kameras QStore AE does not receive SOP Instances.

8.1.3 Attribute Mapping

The Attribute Mappings from the various sources are described within the Instance IOD definitions chapter 8.1.1.

8.1.4 Coerced/Modified Fields

N.A.

8.2 Data Dictionary of Private Attributes

No Private Attributes are supported.

8.3 Coded Terminology and Templates

N.A.

8.4 Grayscale Image consistency

N.A.

8.5 Standard Extended / Specialized / Private SOP Classes

No Extended, Specialized or Private SOP Classes are supported.

8.6 Private Transfer Syntaxes

No Private Transfer Syntaxes are supported.