

SwissVision TR4000

DICOM Conformance Statement
Query/Retrieve Services

Program Version 9.3 or later
Document Revision 1.4

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Document Revision History

Version	Changes	SwissVision	Author	Date
1.0	First release version	V 5.3	R. Conrad	09.04.98
1.1	Swissray UID added	V 6.0 or later	R. Conrad	11.08.98
1.2	AE title and Query/Retrieve time-outs adaptable	V 6.0.2 or later	E. Ungricht	14.05.99
1.3	DX Storage SOP Class support added	V 8.0 or later	E. Ungricht	08.07.02
1.4	Extended Character set updated	V 9.3 or later	M. Darms	22.03.06

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0 Introduction

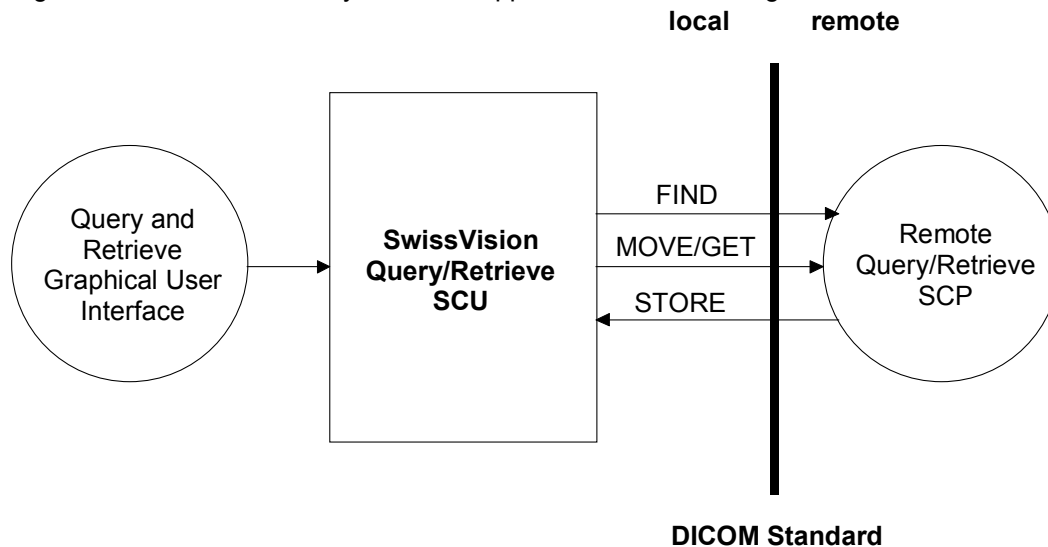
This is the conformance statement for the SwissVision "Query/Retrieve" application which supports DICOM 3.0 Query/Retrieve Services as a Service Class User (SCU). This conformance statement is valid for the SwissVision V 9.3 and higher.

1 Implementation Model

The SwissVision "Query/Retrieve" application is an implementation of a DICOM Query/Retrieve Service Class user (SCU) which can send DICOM queries and move/get requests to a DICOM Query/Retrieve Service Class provider (SCP). It is realized using the MergeCOM-3 Advanced Integrator's Tool Kit from Merge Technologies Inc.

1.1 Application Data Flow Diagram

Figure 1: SwissVision "Query/Retrieve" application data flow diagram:



1.2 Functional Definition of Application Entity (AE)

The SwissVision "Query/Retrieve" application allows querying and retrieving DICOM CR and DX images. It allows the user to enter various query attributes and to select the query/retrieve provider through the graphical user interface.

The application establishes an association with the user selected Query/Retrieve SCP. If a Find request is sent, it will wait for Find responses. If a Move or Get request is sent, it will wait for a Move or Get response and for an association as a Storage Service Class Provider.

All communication and image transfer with the remote application is accomplished utilizing the DICOM protocol over a network using the TCP/IP protocol stack.

1.3 Sequencing of real-world Activities

Not applicable.

2 AE Specifications

2.1 SwissVision "Query/Retrieve"

The SwissVision "Query/Retrieve" application provides standard conformance to the following DICOM 3.0 Service Object Pair (SOP) Classes as a Query/Retrieve Service Class User (SCU) for finding and moving / getting diagnostic images.

Table 1: Valid Query/Retrieve SOP Classes for the SwissVision "Query/Retrieve" application

SOP Class Name	SOP Class UID
Patient Root Query/Retrieve Information Model - Find	1.2.840.10008.5.1.4.1.2.1.1
Patient Root Query/Retrieve Information Model - Move	1.2.840.10008.5.1.4.1.2.1.2
Patient Root Query/Retrieve Information Model - Get	1.2.840.10008.5.1.4.1.2.1.3
Study Root Query/Retrieve Information Model - Find	1.2.840.10008.5.1.4.1.2.2.1
Study Root Query/Retrieve Information Model - Move	1.2.840.10008.5.1.4.1.2.2.2
Study Root Query/Retrieve Information Model - Get	1.2.840.10008.5.1.4.1.2.2.3
Patient/Study Only Query/Retrieve Information Model - Find	1.2.840.10008.5.1.4.1.2.3.1
Patient/Study Only Query/Retrieve Information Model - Move	1.2.840.10008.5.1.4.1.2.3.2
Patient/Study Only Query/Retrieve Information Model - Get	1.2.840.10008.5.1.4.1.2.3.3

The SwissVision "Query/Retrieve" application provides standard conformance to the following DICOM 3.0 Service Object Pair (SOP) Classes as a Storage Service Class Provider (SCP) to retrieve images.

Table 2: Valid Store SOP Classes for the SwissVision "Query/Retrieve" application

SOP Class Name	SOP Class UID
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1

2.1.1 Association Establishment Policies

2.1.1.1 General

The SwissVision "Query/Retrieve" application initiates an association as a Query/Retrieve SCU when the local operator requests to query or retrieve images. The SwissVision "Query/Retrieve" application will wait for an association as a Storage SCP after having sent a move request. The maximum PDU size is 28'672 bytes.

2.1.1.2 Number of Associations

The SwissVision "Query/Retrieve" application opens only one association at a time for query/retrieve requests. Only one find request or move request is sent over an open association. It accepts only one association at a time to receive images.

2.1.1.3 Asynchronous Nature

The SwissVision "Query/Retrieve" application does not support asynchronous communication (multiple outstanding transactions over a single association).

2.1.1.4 Implementation identifying Information

The implementation class unique identifier (UID) for the SwissVision "Query/Retrieve" application is:

2.16.840.1.113929.1.9.980811

The implementation version name for the SwissVision "Query/Retrieve" application is:

SwissVision_1.0

2.1.2 Association Initiation by real-world Activity

The SwissVision "Query/Retrieve" application initiates an association for the appropriate Query/Retrieve Service Class that corresponds to the operation to be performed. The association is closed when all queries or moves/gets have been processed by the remote DICOM network node or when an error or timeout occurred. The operator is also able to initiate an abort request.

2.1.2.1 Real-world Activity for Find, Move and Get Operations

The SwissVision "Query/Retrieve" application initiates an association to do C-FIND and C-MOVE or C-GET operations. The association is closed when all queries or moves/gets have been processed or when an error or timeout occurred.

2.1.2.1.1 Associated real-world Activity for Find, Move and Get Operations

Once the association has been established, the SwissVision "Query/Retrieve" application sends a find request and waits for find responses. To receive images, it sends a move or get request. In case of a move request, the images are received over a second association initiated by the Query/Retrieve Service Class Provider.

2.1.2.1.2 Proposed Presentation Contexts for Find, Move and Get Operations

The presentation contexts that are proposed by the SwissVision "Query/Retrieve" application for the find, move and get operations are specified in Table 3. All these SOP classes conform to the standard Storage Services as specified in the DICOM Standard.

Table 3: Find and Move Presentation Contexts of the SwissVision "Query/Retrieve" application

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root Query/Retrieve Information Model - Find	1.2.840.10008.5.1.4.1.2.1.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none
Patient Root Query/Retrieve Information Model - Move	1.2.840.10008.5.1.4.1.2.1.2	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none
Patient Root Query/Retrieve Information Model - Get	1.2.840.10008.5.1.4.1.2.1.3	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Study Root Query/Retrieve Information Model - Find	1.2.840.10008.5.1.4.1.2.2.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none
Study Root Query/Retrieve Information Model - Move	1.2.840.10008.5.1.4.1.2.2.2	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none
Study Root Query/Retrieve Information Model - Get	1.2.840.10008.5.1.4.1.2.2.3	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none

Patient/Study Only Query/Retrieve Information Model - Find	1.2.840.10008.5.1.4.1.2.3.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none
Patient/Study Only Query/Retrieve Information Model - Move	1.2.840.10008.5.1.4.1.2.3.2	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none
Patient/Study Only Query/Retrieve Information Model - Get	1.2.840.10008.5.1.4.1.2.3.3	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	none

Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCP	none
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3 Communication Profiles

The SwissVision "Query/Retrieve" application provides TCP/IP network communication support as defined by PS 3.8, on any physical medium supporting the TCP/IP (e.g. Ethernet, etc.).

4 Extension / Specialization / Privatization

4.1 Standard extended / specialized / private SOP's

4.1.1 Image Retrieval

The SwissVision "Query/Retrieve" application accepts all private attributes which are defined in the SwissVision Storage Services Conformance Statement. All other private tags are ignored.

4.2 Private Transfer Syntax

None supported.

5 Configuration

5.1 Local Settings

The Local Application Title, the Query / Retrieve Timeouts and the Local Listening Port can be entered during setup using the graphical user interface. Default values are "SVISION_QR" for the AE title, 30 / 60 seconds for the query / retrieve timeouts and 104 for the Local Listening Port.

5.2 Host Properties

The Remote Application Title, Host Name and Remote Port Number of one or more query/retrieve providers can be entered during setup using the graphical user interface.

6 Support of Extended Character Sets

The SwissVision "Query/Retrieve" application supports the following character sets:

- ISO_IR_100 Latin 1
- ISO_IR_101 Latin 2 / Eastern Europe
- ISO_IR_109 Latin 3 / Turkish
- ISO_IR_110 Latin 4 / Baltic
- ISO_IR_126 Greek
- ISO_IR_127 Arabic
- ISO_IR_138 Hebrew
- ISO_IR_144 Cyrillic