

# SwissVision TR4000

DICOM Conformance Statement  
Storage Commitment Services  
Connection Verification Service

Program Version 9.3 or later  
Document Revision 1.3

Date: 22-Mar-06



Document Revision History

<b>Version</b>	<b>Changes</b>	<b>SwissVision</b>	<b>Author</b>	<b>Date</b>
1.0	Preliminary version	V 7.2	E. Ungricht	26.06.00
1.1	First release version	V 7.2	E. Ungricht	20.04.01
1.2	Verification SOP added	V 8.0 or later	E. Ungricht	08.07.02
1.3	Extended Character Set updated	V 9.3 or later	M. Darms	22.03.06

**Table of Contents**

Document Revision History ..... II

Table of Contents ..... III

0 Introduction ..... 1

1 Implementation Model ..... 1

    1.1 Application Data Flow Diagram ..... 1

    1.2 Functional Definition of Application Entity (AE) ..... 2

    1.3 Sequencing of real-world Activities ..... 2

2 AE Specifications ..... 2

    2.1 SwissVision "Storage Commitment" ..... 2

        2.1.1 Association Establishment Policies ..... 2

            2.1.1.1 General ..... 2

            2.1.1.2 Number of Associations ..... 3

            2.1.1.3 Asynchronous Nature ..... 3

            2.1.1.4 Implementation identifying Information ..... 3

        2.1.2 Association Initiation by real-world Activity ..... 3

            2.1.2.1 Real-world Activity for Storage Commitment Request ..... 3

                2.1.2.1.1 Associated real-world Activity for Storage Commitment Request ..... 3

                2.1.2.1.2 Proposed Presentation Contexts for Storage Commitment Request ..... 3

            2.1.2.2 Real-world Activity for Storage Commitment Report ..... 3

                2.1.2.2.1 Associated real-world Activity for Storage Commitment Report ..... 3

                2.1.2.2.2 Proposed Presentation Contexts for Storage Commitment Report ..... 3

            2.1.2.3 Real-world Activity for Connection Verification Request ..... 4

                2.1.2.3.1 Associated real-world Activity for Connection Verification Request ..... 4

                2.1.2.3.2 Proposed Presentation Contexts for Storage Commitment Report ..... 4

3 Communication Profiles ..... 4

4 Extension / Specialization / Privatization ..... 4

    4.1 Standard extended / specialized / private SOP's ..... 4

    4.2 Private Transfer Syntax ..... 4

5 Configuration ..... 4

    5.1 Local Settings ..... 4

    5.2 Host Properties ..... 5

6 Support of Extended Character Sets ..... 5

## 0 Introduction

This is the conformance statement for the SwissVision “Storage Commitment” application which supports DICOM 3.0 Storage Commitment Services as a Service Class User (SCU) and DICOM 3.0 Connection Verification Services as a Service Class Provider (SCP). This conformance statement is valid for the SwissVision V 9.3 and higher.

## 1 Implementation Model

The SwissVision “Storage Commitment” application is an implementation of the Push model for a DICOM Storage Commitment Service Class User (SCU) which sends storage commitment requests to a DICOM Storage Commitment Service Class Provider (SCP) and expects storage commitment reports from the provider. The associated image storage mechanism is provided by the SwissVision “Storage” application. In addition the SwissVision “Storage Commitment” application handles DICOM Connection Verification requests as a DICOM Verification Service Class Provider (SCP).

All DICOM services are realized using the MergeCOM-3 Advanced Integrator's Tool Kit from Merge Technologies Inc.

### 1.1 Application Data Flow Diagram

Figure 1: SwissVision “Storage Commitment” application data flow diagram for Storage Commitment

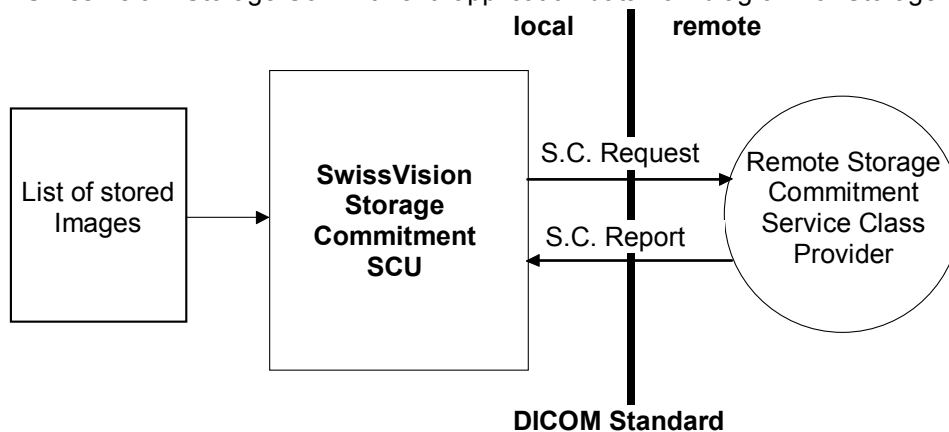
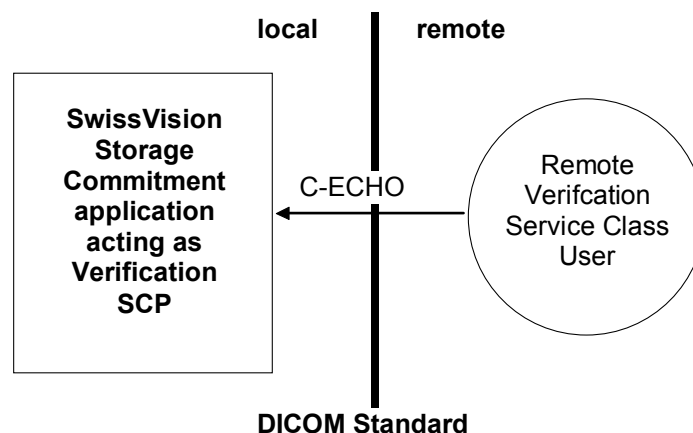


Figure 2: SwissVision “Storage Commitment” application data flow diagram for DICOM Connection Verification



## 1.2 Functional Definition of Application Entity (AE)

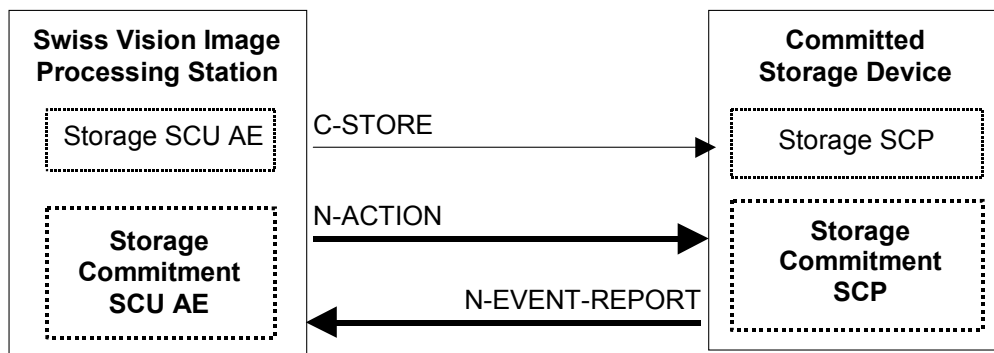
The SwissVision "Storage Commitment" application allows to request a storage commitment for images (including presentation states and key image notes) stored to a DICOM archive. In normal operation, images stored to a DICOM archive with the SwissVision "Storage" application are entered into a list, which is then used to request storage commitment. After storage, the SwissVision "Storage Commitment" application automatically establishes an association with a selectable storage commitment provider to send a storage commitment request to that provider. Afterwards, it expects a notification from the provider indicating success or failure of the storage commitment. It also allows the user to request a storage commitment for selected images.

The application also answers DICOM C-ECHO requests as a connection verification SCP.

All communication 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

Figure 3: Sequencing of Storage and Storage Commitment activities:



## 2 AE Specifications

### 2.1 SwissVision "Storage Commitment"

The SwissVision "Storage Commitment" application provides standard conformance to the following DICOM 3.0 Service Object Pair (SOP) Classes as a Storage Commitment Service Class User (SCU) and Verification Service Class Provider (SCP).

Table 1: Valid SOP Classes for the SwissVision "Storage Commitment" application

SOP Class Name	SOP Class UID	Role
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	SCU
Verification SOP Class	1.2.840.10008.1.1	SCP

#### 2.1.1 Association Establishment Policies

##### 2.1.1.1 General

The SwissVision "Storage Commitment" application initiates an association as a Storage Commitment SCU to send the N-ACTION request after the local operator stored images over the network to a remote DICOM storage provider or when the local operator requests a storage commitment for a selected image.

Immediately after startup, the SwissVision "Storage Commitment" application opens a listen port for associations to receive N-EVENT-REPORTS as a Storage Commitment SCU, or to answer C-ECHO requests as a Verification SCP.

The maximum PDU size is 28'672 bytes.

### 2.1.1.2 Number of Associations

The SwissVision "Storage Commitment" application opens only one association at a time. There may be several commitment requests sent per association. The application accepts only one association at a time to receive commitment reports or answer C-ECHO requests.

### 2.1.1.3 Asynchronous Nature

The SwissVision "Storage Commitment" 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 "Storage Commitment" application is:  
**2.16.840.1.113929.1.9.980811**

The implementation version name for the SwissVision "Storage Commitment" application is:  
**SwissVision\_1.0**

## 2.1.2 Association Initiation by real-world Activity

The SwissVision "Storage Commitment" application initiates an association for the storage commitment request automatically after images have been stored to an archive, or when the local operator requests a storage commitment for a selected image. Defined by a configuration option, the associated event report is expected either immediately on the same association or delayed on a new association initiated by the Storage Commitment Provider. In the first case, the association is kept open for a configurable time to receive the immediate event report.

The Storage Commitment Provider initiates an association for delayed storage commitment reports.

The Verification User initiates an association for C-ECHO requests.

### 2.1.2.1 Real-world Activity for Storage Commitment Request

The SwissVision "Storage Commitment" application issues a storage commitment request automatically after images have been stored to an archive, or when the local operator requests a storage commitment for a selected image

#### 2.1.2.1.1 Associated real-world Activity for Storage Commitment Request

Once the storage commitment request association has been established, the SwissVision "Storage Commitment" application sends a N-ACTION request.

#### 2.1.2.1.2 Proposed Presentation Contexts for Storage Commitment Request

The presentation contexts that are proposed by the SwissVision "Storage Commitment" application for the storage commitment requests are specified in Table 2. They correspond to the standard Storage Services as specified in the DICOM Standard.

### 2.1.2.2 Real-world Activity for Storage Commitment Report

The Storage Commitment Provider initiates associations for the storage commitment reports or may send an immediate report over the association for the storage commitment request as soon as it takes responsibility for the images.

#### 2.1.2.2.1 Associated real-world Activity for Storage Commitment Report

Once the storage commitment report association has been established, the SwissVision "Storage Commitment" application expects an N-EVENT-REPORT.

#### 2.1.2.2.2 Proposed Presentation Contexts for Storage Commitment Report

The presentation contexts that are expected by the SwissVision "Storage Commitment" application for the storage commitment reports are specified in Table 2. They correspond to the standard Storage Services as specified in the DICOM Standard.

Table 2: Storage Commitment Presentation Contexts of the SwissVision "Storage Commitment" application

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Storage Commitment Push Model	1.2.840.10008.1.20.1	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

### 2.1.2.3 Real-world Activity for Connection Verification Request

The DICOM Verification Service User initiates an association and sends a connection verification request (C-ECHO request).

#### 2.1.2.3.1 Associated real-world Activity for Connection Verification Request

Once the association has been established and the connection verification request received, the Swiss Vision "Storage Commitment" application answers the C-ECHO request.

#### 2.1.2.3.2 Proposed Presentation Contexts for Storage Commitment Report

The presentation contexts that are expected by the SwissVision "Storage Commitment" application for the connection verification requests are specified in Table 3. They correspond to the standard Storage Services as specified in the DICOM Standard.

Table 3: Verification Presentation Contexts of the SwissVision "Storage Commitment" application

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP	1.2.840.10008.1.1	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

## 3 Communication Profiles

The SwissVision "Storage Commitment" 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

None supported.

### 4.2 Private Transfer Syntax

None supported.

## 5 Configuration

### 5.1 Local Settings

The Local Application Title, the Response / Commitment Timeouts and the Local Listen Port Number can be entered during setup using the graphical user interface. Default values are "SVISION\_SC" for the AE title, 30 seconds / 24 hours for the response / commitment timeouts and 104 for the Local Listening Port.

An automatic storage commitment request is only sent for images stored to a DICOM archive. The type of the storage providers can be configured in the SwissVision "Storage" application during setup using the graphical user interface.

## **5.2 Host Properties**

The Remote Application Title, Host Name, Remote Port Number and the Association used for Commitment Reports of one or more storage commitment providers can be entered during setup using the graphical user interface.

## **6 Support of Extended Character Sets**

The SwissVision "Storage Commitment" 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