merative

Merge CADstream™

6.6

DICOM CONFORMANCE STATEMENT

Manufacturer:

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CAD-18841	September 2024	1.0	Release 6.6.

The latest version of this document can be found at https://merge.my.site.com/mergecommunity.

Contents

Chapter 1. Introduction

This is a conformance statement for Merge CADstream, a product of Merge Healthcare. Merge CADstream implements a Storage SCP and SCU, Query Retrieve SCP and SCU, and a Print Management SCU.

Readers unfamiliar with the DICOM protocol should read the DICOM V 3.0 specification. Part 2 of DICOM specifies the format of this document.

Merge CADstream is intended as a diagnostic and review workstation. Data received through Storage SCP is for consumption by the workstation. Merge CADstream is not guaranteed to store these incoming data with DICOM full fidelity (i.e. some original data not used by Merge CADstream may not be retained or available). Hence, any subsequent re-transmit of data to other workstation should not be treated as primary source data. It is advised that Merge CADstream shouldn't be used as a pass through device. Acquisition device and modality scanner, where primary source data are generated, should send their source data directly to PACS independently of Merge CADstream.

1.1. References

Digital Imaging and Communications in Medicine (DICOM) V 3.0 by ACR-NEMA, which is available from:

NEMA
Office of Publications
2102 L Street, N.W.
Washington, D.C., 20037, USA
http://medical.nema.org/

1.2. Definitions

Association Establishment — The step of communication between two Application Entities in which the negotiation for data encoding occurs.

ACR-NEMA — American College of Radiology – National Electrical Manufacturers Association

AE — Application Entity

Conformance Statement — A formal statement associated with a specific implementation of the DICOM Standard. It specifies the Service Classes, Information Objects, Communications Protocols and Media Storage Application Profiles supported by the implementation.

WC — Web Client Interface

DICOM 3.0 — Digital Imaging and Communications in Medicine, Version 3.0

DIMSE — DICOM Message Service Element

C-STORE — DICOM Message Service Element Composite STORE

Known AE list — List of remote DICOM AE's configured in the WC

Service Class Provider (SCP) — Application Entity that accepts the association

Service Class User (SCU) — Application Entity that initiates the association

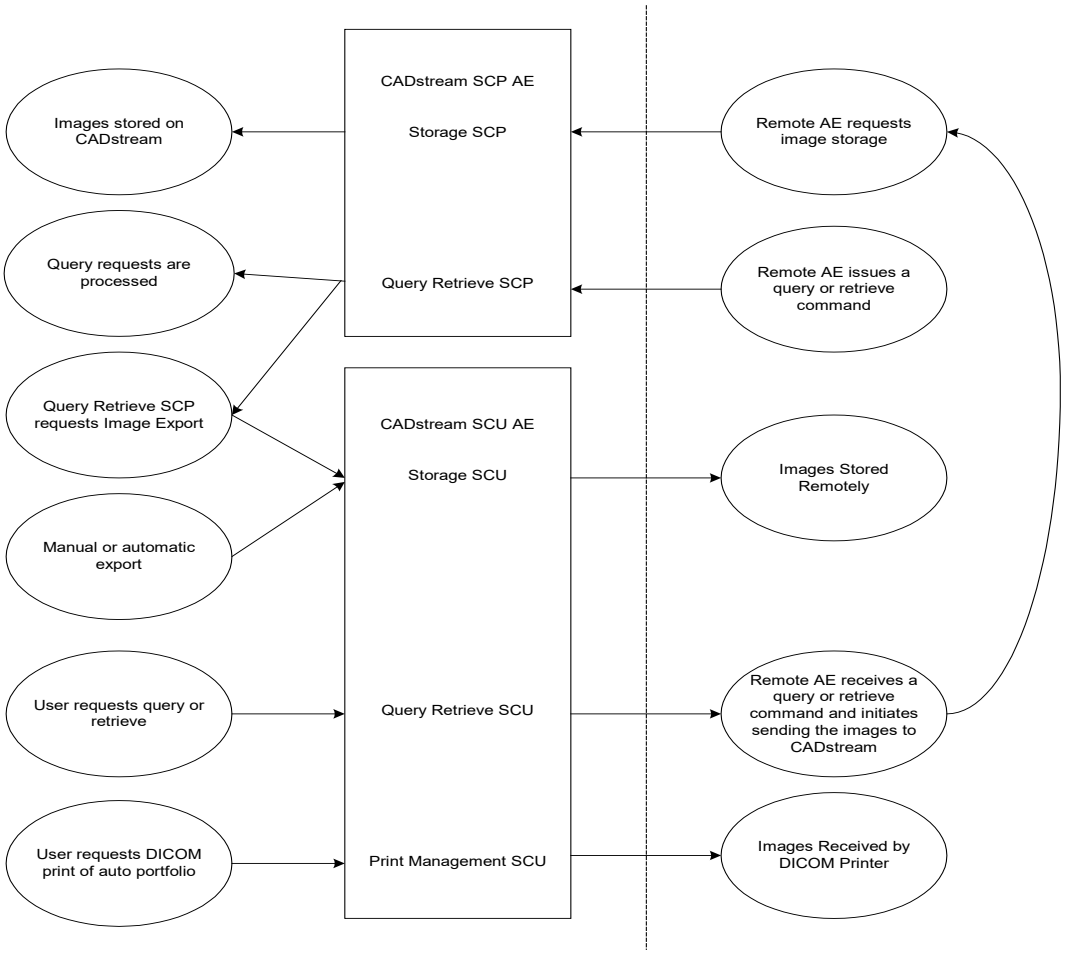
Q/R — Query Retrieve

RECIST — Response evaluation criteria in solid tumours. A set of published rules used to assess tumour burden in order to provide an objective assessment of response to therapy

RECIST LD — The longest diameter of a lesion, one of the RECIST's main characteristics

Chapter 2. Implementation model

2.1. Application data flow diagram



CADstream DICOM Data Flow Diagram

2.2. Functional definitions of Merge CADstream AEs

2.2.1. Merge CADstream SCP Application Entity

Merge CADstream SCP listens for associations on a TCP/IP port configured in the WC. The SCP supports the Storage and Query Retrieve SOP Classes listed in the AE specifications. Images received will be added to the Merge CADstream study database. The SCP will handle query requests and respond with data objects containing the values from the Merge CADstream database. When a retrieve request is received the SCP will issue a command to the Merge CADstream SCU AE to export the specified images to the C-Move Destination AE, only if it is in the Known AE list with the “Send” flag configured.

2.2.2. Merge CADstream SCU Application Entity

Merge CADstream SCU implements a Storage SCU that transfers images from Merge CADstream to a remote destination AE. Images will be sent when an export is initiated by the user via the WC or when export is automatically initiated after processing or marking a study as reviewed. The Query Retrieve SCU sends requests to a remote AE with attribute values entered by the user in the WC. The Print Management SCU Sends images to a DICOM printer using film attributes from the Known AE list.

2.3. Sequencing of real-world activities

Not Applicable.

Chapter 3. AE Specifications

The Merge CADstream system uses the same AE title for both its SCP and SCU Application Entities. The operating parameters of these Application Entities are configured through the WC.

3.1. Merge CADstream SCP AE Specification

This Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCP

SOP Class Name	SOP Class UID
Verification SOP Class	1.2.840.10008.1.1
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
US Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1
US Multi-frame Storage (Retired)	1.2.840.10008.5.1.4.1.1.3
US Multi-frame Storage	1.2.840.10008.5.1.4.1.1.3.1
MG Presentation Storage	1.2.840.10008.5.1.4.1.1.1.2
MG Processing Storage	1.2.840.10008.5.1.4.1.1.1.2.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Patient Root Find	1.2.840.10008.5.1.4.1.2.1.1
Patient Root Move	1.2.840.10008.5.1.4.1.2.1.2
Study Root Find	1.2.840.10008.5.1.4.1.2.2.1
Study Root Move	1.2.840.10008.5.1.4.1.2.2.2
Patient Study Only Find (Retired)	1.2.840.10008.5.1.4.1.2.3.1
Patient Study Only Move (Retired)	1.2.840.10008.5.1.4.1.2.3.2

Merge CADstream can import US and MG images but does not export them.

Merge CADstream SCP does not preserve or replace Digital Signatures (Signature Level 1).

Merge CADstream SCP preserves all Type 1 and 2 Attributes defined in the IOD associated with the supported SOP classes, all other elements may be discarded (conforms to Level 1 support). See section 5.1 for supported extensions.

3.1.1. Association Establishment Policies

a. General

The maximum PDU length is configurable.

b. Number of Associations

The number of associations is limited only by the available resources of the system.

c. Asynchronous Nature

Merge CADstream SCP allows only a single outstanding operation on any association and does not support asynchronous operations window negotiation.

d. Implementation Identifying Information

This AE will provide the following information:

Implementation Class UID	1.2.826.0.1.3680043.2.250.1
Implementation Version Name	5.0

3.1.2. Association Initiation by Real-World Activity

This AE does not initiate associations.

3.1.3. Association Acceptance Policy

Merge CADstream SCP will only accept an association if the following criteria are met:

- The called AE Title matches
- The calling AE Title and IP address match one of the pairs on the list of known AE's with the "receive" flag set or if Merge CADstream is configured to receive from any AE.

a. Real-World Activity - Verification

Associated Real-World Activity – Verification

Merge CADstream SCP will respond to C-ECHO requests, allowing a remote SCU to verify that it is possible to establish a connection.

Acceptable Presentation Contexts – Verification

Table 3.1.3.1

Abstract Syntax		Transfer Syntax			Role	Extended Negotiation
Name	**UID**	**Name List**	**UID List**	**Priority**		
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	1	SCP	None
		Implicit VR Little Endian	1.2.840.10008.1.2	2		
		Explicit VR Big Endian	1.2.840.10008.1.2.2	3		

SOP Specific Conformance – Verification SOP Class

Merge CADstream SCP provides standard conformance to Verification SOP Class.

Presentation Context Acceptance Criterion – Verification

There are no specific criteria for accepting presentation contexts.

Transfer Syntax Selection Policies – Verification

Transfer syntaxes are accepted in the order of priority listed in Table 3.1.3.1.

b. Real-World Activity – Image Storage

Associated Real-World Activity – Image Storage

Merge CADstream Storage SCP will receive images from remote SCU's via C-STORE requests.

Merge CADstream Storage SCP will store Patient Name (0010,0010) with all three (Person Name) component groups in persistent data storage. When displaying patient name within the application, Merge CADstream will only show the first component group. Refer to DICOM PS 3.5 Table 6.2-1 for interpretation of PN.

Acceptable Presentation Contexts – Image Storage

Table 3.1.3.2

Abstract Syntax		Transfer Syntax				
Name	**UID**	**Name List**	**UID List**	**Priority**	**Role**	**Ext. Neg**
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1	1		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	2		
US Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Explicit VR Big Endian	1.2.840.10008.1.2.2	3		
	1.2.840.10008.5.1.4.1.1.6.1	JPEG Baseline (Process 1): Default Transfer Syntax for Lossy JPEG 8-bit Image Compression	1.2.840.10008.1.2.4.50	4		
US Image Storage	1.2.840.10008.5.1.4.1.1.3	JPEG Baseline (Processes 2 & 4): Default Transfer Syntax for Lossy JPEG 12-bit Image Compression (Process 4 only)	1.2.840.10008.1.2.4.51	5		
US Multi Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3.1	JPEG Lossless, Nonhierarchical (Processes 14)	1.2.840.10008.1.2.4.57	6	SCP	None
US Multi Image Storage	1.2.840.10008.5.1.4.1.1.1.2.1	JPEG Lossless, Nonhierarchical, First-Order Prediction (Processes 14 [Selection Value 1]): Default Transfer Syntax for Lossless JPEG Image Compression	1.2.840.10008.1.2.4.70	7		
MG Processing Image Storage	1.2.840.10008.5.1.4.1.1.1.2.	JPEG-LS Lossless Image Compression	1.2.840.10008.1.2.4.80	8		
MG Presentation Image Storage		JPEG-LS Lossy (Near-Lossless) Image Compression	1.2.840.10008.1.2.4.81	9		
		JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90	10		
		JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91	11		

Abstract Syntax		Transfer Syntax				
Name	UID	Name List	UID List	Priority	Role	Ext. Neg
		JPEG 2000 Part 2 Multicomponent Image Compression (Lossless Only)	1.2.840.10008.1.2.4.92	12		
		JPEG 2000 Part 2 Multicomponent Image Compression	1.2.840.10008.1.2.4.93	13		
		Run Length Encoding	1.2.840.10008.1.2.5	14		

SOP Specific Conformance –Storage Classes

Images that are larger than 3MB of data will be scaled down to improve viewing speed.

SOP Specific Conformance – MR Image Storage

Merge CADstream SCP provides standard conformance to MR Image Storage SOP Class.

SOP Specific Conformance – Ultra Sound (Multiframe) Image Storage

Photometric Interpretation values of MONOCHROME2, RGB, PALETTE COLOR, YBR_FULL, and YBR_FULL_422 are accepted for native pixel data.

SOP Specific Conformance – Mammography Image Storage

Attributes that would result in Mammography images not being stored by Merge CADstream include Photometric Interpretation (0028,0004) not equal to one of the following MONOCHROME2, RGB, PALETTE COLOR, YBR_FULL, or YBR_FULL_422 or a Planar Configuration (0028,0006) not equal to “0”.

SOP Specific Conformance – Secondary Capture Image Storage

Some Secondary Capture images may be accepted but not stored by Merge CADstream. Attributes that would result in Secondary Capture images not being stored by Merge CADstream include Photometric Interpretation (0028,0004) not equal to one of the following MONOCHROME2, RGB, PALETTE COLOR, YBR_FULL, or YBR_FULL_422. All Secondary Capture images exported by another Merge CADstream system will be stored.

Presentation Context Acceptance Criterion – Image Storage

There are no specific criteria for accepting presentation contexts.

Transfer Syntax Selection Policies – Image Storage

Transfer syntaxes are accepted in the order of priority listed in Table 3.1.3.2.

c. Real-World Activity – Query/Retrieve

Associated Real-World Activity – Query/Retrieve

A remote system queries the Merge CADstream database or selects a set of images to retrieve.

Acceptable Presentation Contexts – Query/Retrieve

Table 3.1.3.3

Abstract Syntax		Transfer Syntax			Role	Ext. Neg.
Name	**UID**	**Name List**	**UID List**	**Priority**		
Patient Root Find	1.2.840.10008.5.1.4.1.2.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1	1		
Patient Root Move	1.2.840.10008.5.1.4.1.2.1.2					
Study Root Find	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	2		
Study Root Move	1.2.840.10008.5.1.4.1.2.2.2					
Patient Study Only Find (Retired)	1.2.840.10008.5.1.4.1.2.3.1			3	SCP	None
Patient Study Only Move (Retired)	1.2.840.10008.5.1.4.1.2.3.2	Explicit VR Big Endian	1.2.840.10008.1.2.2			

SOP Specific Conformance – Query/Retrieve SOP Classes

Case insensitive matching is used on all attributes.

The Query Retrieve SCP supports hierarchical queries and not relational queries. All supported attributes for the level queried are always returned. Attributes in query requests that are not supported are ignored.

A pending status will be sent until a retrieve is finished, these responses do not contain the number of sub operations remaining or completed. If there is an error sending a study when multiple studies are requested, a “pending with warning” status will be sent instead. When the Move request is completed a final response will be sent indicating success or failure.

If a patient ID or study UID requested for retrieve cannot be found a failed status will be returned and a message will be logged in the Merge CADstream system log.

Retrieve is not supported for the Series and Image Level, if attempted the response will indicate failed and a message will be logged.

The table below summarizes the attributes the Query SCP supports and the type of matching supported for them.

Attribute Name	Tag	Types of Matching
Patient ID	(0010,0020)	S,*,U
Patient Name	(0010,0010)	S,*,U
Study UID	(0020,000D)	S,U,L

Attribute Name	Tag	Types of Matching
Study ID	(0020,0010)	S,U
Study Time	(0008,0030)	S,U,R
Study Date	(0008,0020)	S,U,R
Study Description	(0008,1030)	S,*,U
Accession Number	(0008,0050)	S,*,U
Modalities in Study	(0008,0061)	S,*,U
Series UID	(0020,000E)	S,U,L
Series Number	(0020,0011)	S,U
Modality (Series)	(0008,0060)	S,*,U
Instance UID	(0008,0018)	S, U,L
Instance Number	(0020,0013)	S,U

Types of Matching:
S: Single Value Matching
R: Range Matching
*: Wild Card Matching
U: Universal Matching
L: List UID Matching

Presentation Context Acceptance Criterion – Query/Retrieve

There are no specific criteria for accepting presentation contexts.

Transfer Syntax Selection Policies – Query/Retrieve

Transfer syntaxes are accepted in the order of priority listed in Table 3.1.3.3.

3.2. Merge CADstream SCU AE Specification

This Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU:

SOP Class Name	SOP Class UID
Verification SOP Class	1.2.840.10008.1.1
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
US Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1
US Multi-frame Storage (Retired)	1.2.840.10008.5.1.4.1.1.3
US Multi-frame Storage	1.2.840.10008.5.1.4.1.1.3.1
MG Presentation Storage	1.2.840.10008.5.1.4.1.1.1.2
MG Processing Storage	1.2.840.10008.5.1.4.1.1.1.2.1

SOP Class Name	SOP Class UID
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Patient Root Find	1.2.840.10008.5.1.4.1.2.1.1
Patient Root Move	1.2.840.10008.5.1.4.1.2.1.2
Study Root Find	1.2.840.10008.5.1.4.1.2.2.1
Study Root Move	1.2.840.10008.5.1.4.1.2.2.2
Patient Study Only Find	1.2.840.10008.5.1.4.1.2.3.1
Patient Study Only Move	1.2.840.10008.5.1.4.1.2.3.2
Basic Color Print Mgmt Meta	1.2.840.10008.5.1.1.18
Basic Grayscale Print Mgmt Meta	1.2.840.10008.5.1.1.9
Basic Film Session	1.2.840.10008.5.1.1.1
Basic Film Box	1.2.840.10008.5.1.1.2
Basic Grayscale Image Box	1.2.840.10008.5.1.1.4
Basic Color Image Box	1.2.840.10008.5.1.1.4.1

Extended negotiation is not supported with the exception of preserving attributes listed in section 5.1.

Merge CADstream can import US and MG images but does not export them.

3.2.1. Association Establishment Policies

a. General

The maximum PDU length is 64kB.

b. Number of Associations

The number of associations is limited only by the available resources of the system.

c. Asynchronous Nature

Merge CADstream SCU allows only a single outstanding operation on any association and does not support asynchronous operations window negotiation.

d. Implementation identifying Information

This AE will provide the following information:

Implementation Class UID	1.2.826.0.1.3680043.2.250.2
Implementation Version Name	5.0

3.2.2. Association Initiation by Real-World Activity

Merge CADstream SCU is capable of initiating associations for verification, image storage, query retrieve and printing.

a. Real-World Activity – Verification

Associated Real-World Activity – Verification

When the user selects the "Send DICOM Echo" command in the WC, Merge CADstream SCU attempts to connect to the selected AE and send a C-ECHO request. If the association is successfully established and a C-ECHO response indicating success is received, then the user will be informed of this. If an error occurs, then a useful error message will be shown to the user.

Proposed Presentation Contexts – Verification

Table 3.2.2.1

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

SOP Specific Conformance – Verification SOP Class

Merge CADstream Storage SCU provides standard conformance to Verification SOP Class.

b. Real-World Activity – Image Storage

Associated Real-World Activity – Image Storage

An association is initiated to send images under several conditions

- User initiates manual export of a study via the WC
- A study is automatically exported after processing or being marked as reviewed
- The SCP AE receives a retrieve request from a remote AE

A single association is used to send all of the images in a single study. A separate association is opened for each different study that is exported.

Studies will be sent one at a time, and additional studies will be placed in an export queue. Studies will be removed from this queue and sent as soon as the current association ends.

If all images in a study are sent successfully, the DICOM Status of the study is set to "sent". Otherwise, the status is set to "send incomplete" and a message is logged. If a warning status is received, a message will be logged.

Proposed Presentation Contexts – Image Storage

Table 3.2.2.2

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
MR Image Storage **Secondary Capture**	1.2.840.10008.5.1.4.1.1.4 1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

SOP Specific Conformance – MR Image Storage

Merge CADstream Storage SCU provides standard conformance to MR Image Storage SOP Class.

SOP Specific Conformance – Secondary Capture Image Storage

Merge CADstream Storage SCU provides standard conformance to Secondary Capture Image Storage SOP Class.

c. Real-World Activity – Query/Retrieve

Associated Real-World Activity – Query/Retrieve

Users initiate query retrieve through the WC by selecting a remote AE and specifying the query search criteria to be used. From the returned objects the user selects the studies to retrieve. The Query Retrieve SCU then sends a move command to the remote AE with the Storage SCP as the destination.

Proposed Presentation Contexts – Query/Retrieve

Table 3.2.2.3

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Patient Root Q/R Find	1.2.840.10008.5.1.4.1.2.1.1				
Patient Root Q/R Move	1.2.840.10008.5.1.4.1.2.1.2 1.2.840.10008.5.1.4.1.2.2.1				
Study Root Q/R Find	1.2.840.10008.5.1.4.1.2.2.2 1.2.840.10008.5.1.4.1.2.3.1				
Study Root Q/R Move	1.2.840.10008.5.1.4.1.2.3.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Patient Study Only Find (Retired)					
Patient Study Only Move (Retired)					

SOP Specific Conformance – Query/Retrieve

Queries always target the Study Level. When the study root is not supported the Patient Level will be queried first. For each patient returned the Study Level will be searched.

Only the first 100 objects returned in the query will be shown.

The search keys used by the Query SCU are listed below.

Attribute Name	Tag
Patient ID	(0010,0020)
Patient Name	(0010,0010)
Study Date	(0008,0020)
Study Description	(0008,1030)
Accession Number	(0008,0050)
Modality (Study)	(0008,0060)

Patient DOB is not supported as search attribute, but it will be shown if the SCP returns the value.

Attributes queried for that do not return a value will be ignored as will additional attributes returned in the response.

Relational Queries are not supported.

Retrieve is performed only on the study level.

d. Real-World Activity – Print

Associated Real-World Activity – Print

The auto portfolio for a study can be printed through the WC or CADalyst application. The Print SCU does not support the Printer SOP Class, instead the Print SCU will immediately attempt to create a basic film session and proceed with printing until all pages have completed printing or an error occurs.

Proposed Presentation Contexts – Print

Table 3.2.2.4

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	**UID**	**Name List**	**UID List**		
Basic Grayscale Print Mgmt Meta **Basic Color Print Mgmt Meta** **Basic Film Session** **Basic Film Box** **Basic Grayscale Image Box** **Basic Color Image Box**	1.2.840.10008.5.1.1.9 1.2.840.10008.5.1.1.18 1.2.840.10008.5.1.1.1 1.2.840.10008.5.1.1.2 1.2.840.10008.5.1.1.4 1.2.840.10008.5.1.1.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

SOP Specific Conformance – Print

The Print SCU uses the following DIMSE Service Elements:

SOP Class	DIMSE Service Element
Basic Film Session SOP Class	N-Create
Basic Film Box SOP Class	N-Create, N-Action, N-Delete
Basic Grayscale Image Box SOP Class	N-Set
Basic Color Image Box SOP Class	N-Set

The following attributes can be configured in the WC. Attributes not listed below used the default values in Table 3.2.2.4.2.

Print Attribute Configurable Values

Table 3.2.2.4.1

SOP Class	Attribute Name	Tag	Optional according to standard	Values
Basic Film Session	Medium Type	(2000,0030)	Yes	BLUE FILM CLEAR FILM PAPER
Basic Film Session	Film Destination	(2000,0040)	Yes	PROCESSOR MAGAZINE BIN_x (x is 1-5)
Basic Film Box	Film Size ID	(2010,0050)	Yes	8INx10IN 10INx12IN 10INx14IN 14INx14IN 14INx17IN 24CMx24CM 24CMx30CM A3 A4

Print Attribute Default Values

Table 3.2.2.4.2

SOP Class	Attribute Name	Tag	Optional according to standard	Default Value
Basic Film Session	Number of Copies	(2000,0010)	Yes	1
Basic Film Box	Image Display Format	(2010,0010)	No	STANDARD\1,1
Basic Film Box	Film Orientation	(2010,0040)	Yes	PORTRAIT
Basic Grayscale Image **Basic Color Image**	Image Position	(2020,0010)	No	1

The images from each page in the portfolio are arranged in one big image allowing them to be printed in the image display format “STANDARD\1,1”

3.2.3. Association Acceptance Policy

This AE does not accept associations.

Chapter 4. Communication profiles

4.1. TCP/IP stack

The Merge CADstream system inherits its TCP/IP stack from the Windows operating system.

4.2. Physical media support

Standard representations of IEEE 802.3 (100Base-T and 1000Base-T is supported).

Chapter 5. Standard Extended / Specialized / Privatization

5.1. Standard Extended SOP Classes

Merge CADstream employs a Standard Extended SOP Class based on the MR Image class (1.2.840.10008.5.1.4.1.1.4), with the following additional Type 3 attributes:

Attribute Name	Tag	VR	VM	Expected Value
Pure Filter	(0043,102D)	SH	1	"P+" or "p+"
Spectroscopy Length and Location	(0043,108C)	DS	6	
Spectroscopy Machine	(0043,1093)	DS	1	
Spectroscopy Ratio	(0043,1094)	DS	1	
Spectroscopy Noise	(0043,108F)	DS	1	

Merge CADstream employs a Standard Extended SOP Class based on the Secondary Capture (SC) class (1.2.840.10008.5.1.4.1.1.7), with the following additional Type 3 attribute:

Attribute Name	Tag	Type	VR	Attribute Description
Recist_LD_Sequence	(0063,1001)	3	SQ	Sequence of items describing Recist longest diameters defined by the user.

Each item of the Recist_LD_Sequence contains the following public and private attributes:

Attribute Name	Tag	Type	VR	Attribute Description
Referenced Series	(0008,1115)	1	SQ	Sequence of one item where the item includes the Attributes of one Series.
Referenced SOP Class UID	(0008,1150)	1	UI	SOP Class UID of the series where the user defined this Recist longest diameter.
Referenced SOP Instance UID	(0008,1155)	1	UI	SOP Instance UID of the series where the user defined this Recist longest diameter.
Measurement Units Code Sequence	(0040,08EA)	3	SQ	Coded entry sequence with one item only describing the measurement units for the longest diameter.
Code Value	(0008,0100)	1	SH	CodeValue, e.g. “mm”
Coding Scheme Designator	(0008,0102)	1	SH	CodingSchemeDesignator, normally “UCUM”.
Code Meaning	(0008,0104)	1	LO	Code Meaning, e.g. “millimeter”.
Recist LD ID	(0063,1010)	1	US	ID of the Recist longest diameter.

Attribute Name	Tag	Type	VR	Attribute Description
Recist LD Split Index	(0063,1011)	1C	SH	Split index of the timepoint subseries in the referenced series that was used for defining this longest diameter. Absent if the series was not split.
Recist LD Endpoints	(0063,1012)	1	LO	Multi-value that combines two endpoints of the Recist longest diameter. Each value is a 3D float point as a comma-separated string.
Recist LD Center	(0063,1013)	3	LO	Center of the Recist longest diameter (3D float point as a comma-separated string).
Recist LD Length	(0063,1014)	3	FL	Length of the Recist longest diameter.

Chapter 6. Configuration

The following are configured through the WC application in Merge CADstream

- Merge CADstream AE Title
- Merge CADstream Storage SCP TCP/IP port
- TCP/IP Timeout
- Known Client AE Title/IP Address list

6.1. Known Client AE List

Each known AE is configured with the following flags

- Send – Merge CADstream can send images to this AE and process retrieve requests with this AE as the move destination
- Receive – Merge CADstream can receive images or query retrieve requests from this AE
- Q/R – Merge CADstream can send query retrieve messages to this AE
- Print – Merge CADstream can send the auto portfolio to this AE to be printed. (When an AE is marked as Print a sub-table will be shown used to configure Print specific attributes.)

Chapter 7. Support of Extended Character Sets

7.1. Extended Character Sets

The Merge CADstream Storage SCU/SCP has been validated on the following character sets, in addition to the default:

- Single-byte character sets without code extension:

  ISO_IR 100 - Latin 1
  ISO_IR 13 - Japanese Katakana

- Single-byte character sets with code extension:

  ISO 2022 IR 100 - Latin 1
  ISO 2022 IR 13 - Japanese Katakana

- Multi-byte character sets with code extension:

  ISO 2022 IR 87 - Japanese Kanji

- Multi-byte character sets without code extension:

  ISO_IR 192 - Unicode UTF-8

Chapter 8. Annexes

8.1. Data Dictionary of Private Attributes

The Private Attributes added to the created SOP Instances are listed in the table below.

Every item in the Merge CADstream Recist LD sequence is formed based on the following template:

Attribute Name	Tag	Type	VR	Attribute Description
Private creator	(0063,00xx)			MERGE CADSTREAM
Recist LD ID	(0063,xx10)	1	US	ID of the Recist longest diameter.
Recist LD Split Index	(0063,xx11)	1C	SH	Split index of the timepoint subseries in the referenced series that was used for defining this longest diameter. Absent if the series was not split.
Recist LD Endpoints	(0063,xx12)	1	LO	Multi-value that combines two endpoints of the Recist longest diameter. Each value is a 3D float point as a comma-separated string.
Recist LD Center	(0063,xx13)	3	LO	Center of the Recist longest diameter (3D float point as a comma-separated string).
Recist LD Length	(0063,xx14)	3	FL	Length of the Recist longest diameter.