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# DICOM

## Conformance Statement

### ViewForum R 6.1



**Issued by:**

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# 1. DICOM CONFORMANCE STATEMENT OVERVIEW

The ViewForum Release 6.1 system is a comprehensive range of hardware and software modules that allow for tailored clinical solutions. The software applications are categorized in packages, for instance the Volume package for CT/MR images. It is also possible to calculate the volume of a segmented 3D object. The hardware consists of a PC Windows workstation.

The ViewForum R6.1 provides the following DICOM data exchange features:

- It receives images sent to it by remote systems (e.g. workstations or imaging modalities) and stores them in a database.
- It allows the operator to copy images from the database to remote databases and vice versa. For this purpose the operator is able to query remote databases.
- It allows a remote system to query the ViewForum R6.1 database and to retrieve images from it.
- It allows the operator to print images stored in the database on a DICOM printer.
- It is able to read and write DICOM CD-RW disks.
- It is able to read and write DICOM DVD-RW disks.

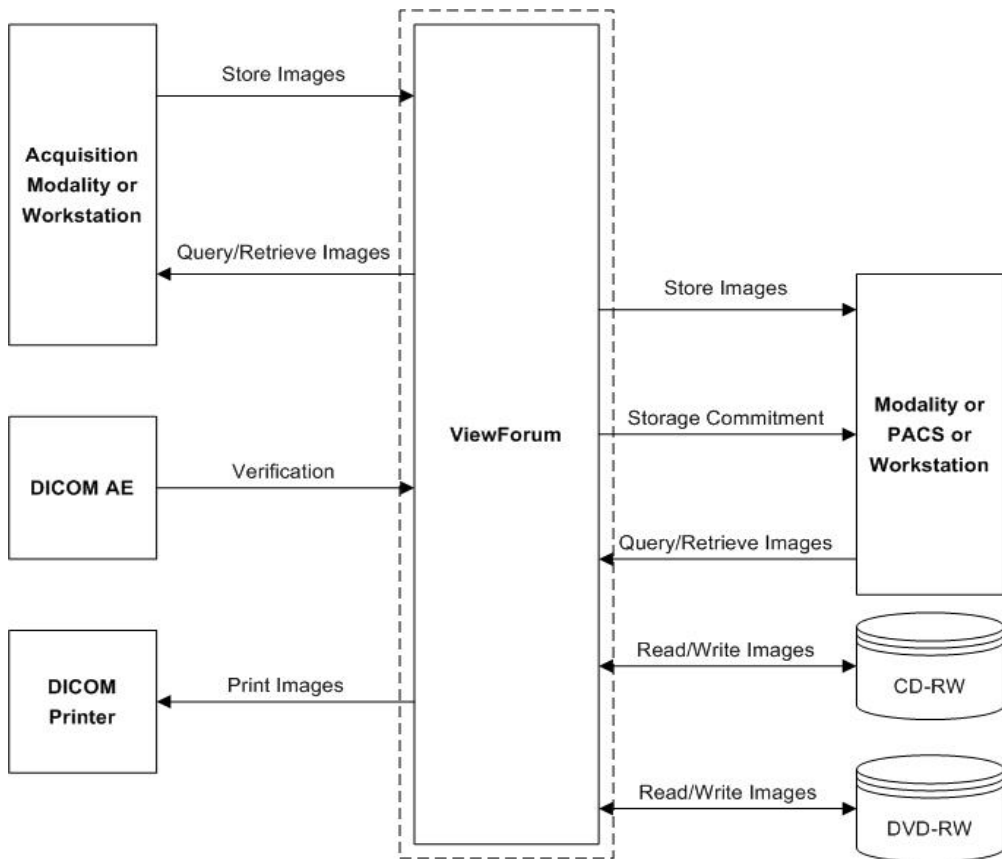


Figure 1: ViewForum R6.1 in a DICOM Network

ViewForum R6.1 allows the operator also to view, analyze and process the images stored in the database. Some advanced analysis and processing applications are primarily designed for images generated by Philips equipment when sent to the ViewForum R6.1.

This DICOM Conformance Statement describes the DICOM conformance of the ViewForum R6.1 platform. Application package specific DICOM conformance is described in separate Conformance Statements.

Table 1 presents an overview of all network services and the applicable SOP classes as provided by ViewForum R6.1.

**Table 1: Network Services**

SOP Class		User of Service (SCU)	Provider of Service (SCP)
Name	UID		
<b>Other</b>			
Verification SOP Class	1.2.840.10008.1.1	No	Yes
<b>Print Management</b>			
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	Yes	No
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	Yes	No
>Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Yes	No
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Yes	No
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
>Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Yes	No
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No
<b>Query/Retrieve</b>			
Patient Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Yes	Yes
Patient Root Query/Retrieve Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Yes	Yes
Study Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root Query/Retrieve Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes
<b>Transfer</b>			
3D Object new Storage (Private)	1.3.46.670589.5.0.2.1	Yes	Yes
3D Volume Storage new SOP Class (Private)	1.3.46.670589.5.0.1.1	Yes	Yes
Cardio Image Storage new SOP Class (Private)	1.3.46.670589.5.0.8.1	Yes	Yes
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	Yes
CT Synthetic Image Storage (Private)	1.3.46.670589.5.0.9	Yes	Yes
CX Synthetic Image Storage (Private)	1.3.46.670589.5.0.12	Yes	Yes
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	No	Yes
MR Series blob set (Private)	1.3.46.670589.11.0.0.12.2	Yes	Yes
MR Spectrum (Private)	1.3.46.670589.11.0.0.12.1	Yes	Yes

SOP Class		User of Service (SCU)	Provider of Service (SCP)
Name	UID		
MR Cardio Analysis new Storage (Private)	1.3.46.670589.5.0.11.1	Yes	Yes
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Yes	Yes
MR Synthetic Image Storage (Private)	1.3.46.670589.5.0.10	Yes	Yes
Perfusion (Private)	1.3.46.670589.5.0.13	Yes	Yes
Perfusion Image Storage (Private)	1.3.46.670589.5.0.14	Yes	Yes
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Yes	Yes
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes
Specialized PMS X-Ray Image Store	1.3.46.670589.2.3.1.1	Yes	Yes
Surface Storage new (Private)	1.3.46.670589.5.0.3.1	Yes	Yes
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes
XA reconstructed X-ray SOP Class (private)	1.3.46.670589.2.4.1.1	Yes	Yes
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Yes	Yes
<b>Workflow Management</b>			
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Yes	No

The services can be specified as a SCU, SCP or as an Option, which means that it is either configurable or that it can be purchased separately.

A table of Supported Media Storage Application Profiles (with roles) is provided

**Table 2: Media Services**

Media Storage Application Profile	Write Files (FSC or FSU)	Read Files (FSR)
<b>Compact Disk – Recordable</b>		
General Purpose CD-R Interchange	Yes   Yes	Yes
<b>DVD</b>		
General Purpose DVD Interchange with JPEG	Yes   No	Yes

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## 3. INTRODUCTION

The introduction specifies product and relevant disclaimers as well as any general information that the vendor feels is appropriate.

### 3.1. Revision History

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

**Table 3: Revision History**

Document Version	Date of Issue	Author	Description
00	01 January 2006	PMS CTO C&S IC2	Template for the DICOM Conformance Statement (Ref. DICOM Standard PS 3.2 - Conformance)
01	30 August 2006	PMS CTO C&S IC2	The draft DICOM Conformance Statement (Ref. DICOM Standard PS 3.2 - Conformance) for ViewForum6.1
02	12 October 2006	PMS CTO C&S IC2	The first release version after the review feedback  1). Added the following private SOP classes <ul style="list-style-type: none"> <li>• SOP_CLASS_UID_spectrum</li> <li>• SOP_CLASS_UID_SERIES_blob_set</li> </ul> 2). Added the note about the Auto Push in Image Import Service.
03	23 October 2006	PMS CTO C&S IC2	Added sequencing of RWA for Auto Push feature of ViewForum
04	13 November 2006	PMS CTO C&S IC2	After review feedback. Added SOP classes for Created IODs

### 3.2. Audience

This Conformance Statement is intended for:

- (Potential) customers
- System integrators of medical equipment
- Marketing staff interested in system functionality
- Software designers implementing DICOM interfaces

It is assumed that the reader is familiar with the DICOM standard.

### 3.3. Remarks

The DICOM Conformance Statement is contained in chapter 4 through 8 and follows the contents and structuring requirements of DICOM PS 3.2.

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

- **Interoperability**  
Interoperability refers to the ability of application functions, distributed over two or more systems, to work successfully together. The integration of medical devices into an IT environment may require application functions that are not specified within the scope of DICOM. Consequently, using only the information provided by this Conformance Statement does not guarantee interoperability of Philips equipment with non-Philips equipment.  
It is the user's responsibility to analyze thoroughly the application requirements



and to specify a solution that integrates Philips equipment with non-Philips equipment.

- **Validation**

Philips equipment has been carefully tested to assure that the actual implementation of the DICOM interface corresponds with this Conformance Statement.

Where Philips equipment is linked to non-Philips equipment, the first step is to compare the relevant Conformance Statements. If the Conformance Statements indicate that successful information exchange should be possible, additional validation tests will be necessary to ensure the functionality, performance, accuracy and stability of image and image related data. 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.

- **New versions of the DICOM Standard**

The DICOM Standard will evolve in future to meet the user's growing requirements and to incorporate new features and technologies. Philips is actively involved in this evolution and plans to adapt its equipment to future versions of the DICOM Standard. In order to do so, Philips reserves the right to make changes to its products or to discontinue its delivery.

The user should ensure that any non-Philips provider linking to Philips equipment also adapts to future versions of the DICOM Standard. If not, the incorporation of DICOM enhancements into Philips equipment may lead to loss of connectivity (in case of networking) and incompatibility (in case of media).

### 3.4. Definitions, Terms and Abbreviations

DICOM definitions, terms and abbreviations are used throughout this Conformance Statement. For a description of these, see NEMA PS 3.3 and PS 3.4. The word Philips in this document refers to Philips Medical Systems.

The following acronyms and abbreviations are used in this document.

AE	Application Entity
ANSI	American National Standard Institute
AP	Application Profile
BOT	Basic Offset Table
CD	Compact Disc
CD-R	CD-Recordable
CD-M	CD-Medical
CR	Computed Radiography
CT	Computed Tomography
DCR	Dynamic Cardio Review
DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
DIMSE-C	DIMSE-Composite
DIMSE-N	DIMSE-Normalized
DX	Digital X-Ray
EBE	DICOM Explicit VR Big Endian
ELE	DICOM Explicit VR Little Endian
FSC	File-set Creator
FSR	File-set Reader
FSU	File-set Updater
GUI	Graphic User Interface
HIS	Hospital Information System
HL7	Health Level Seven
ILE	DICOM Implicit VR Little Endian
IOD	Information Object Definition
ISIS	Information System – Imaging System

MOD	Magneto-Optical Disk
MPPS	Modality Performed Procedure Step
MR	Magnetic Resonance
NEMA	National Electrical Manufacturers Association
NM	Nuclear Medicine
PDU	Protocol Data Unit
RF	X-Ray Radiofluoroscopic
RIS	Radiology Information System
RT	Radiotherapy
RWA	Real-World Activity
SC	Secondary Capture
SCM	Study Component Management
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair
TCP/IP	Transmission Control Protocol/ Internet Protocol
UID	Unique Identifier
US	Ultrasound
USMF	Ultrasound Multi-frame
WLM	Worklist Management
XA	X-Ray Angiographic

### 3.5. References

- [DICOM] Digital Imaging and Communications in Medicine, Part 1 – 18 (NEMA PS 3.1– PS 3.18), National Electrical Manufacturers Association (NEMA) Publication Sales 1300 N. 17<sup>th</sup> Street, Suite 1847 Rosslyn, Virginia. 22209, United States of America Internet: <http://medical.nema.org/>  
Note that at any point in time the official standard consists of the most recent yearly edition of the base standard (currently 2006) plus all the supplements and correction items that have been approved as Final Text.

## 4. NETWORKING

This section contains the networking related services (vs. the media related ones).

### 4.1. Implementation model

The implementation model consists of three sections:

- The application data flow diagram, specifying the relationship between the Application Entities and the “external world” or Real-World Activities,
- A functional description of each Application Entity, and
- The sequencing constraints among them.

#### 4.1.1. Application Data Flow

The ViewForum R6.1 system consists of one single Application Entity only: the ViewForum Application Entity (ViewForum Network).

Figure below shows the Networking application data flow as a functional overview of the ViewForum Network. As depicted in the Figure, the ViewForum Network incorporates the following functionality.

- After RWA Request Verification, the ViewForum Network as SCP provides standard Verification Service Class functionality to the requesting SCU.
- After RWA Import Images, the ViewForum Network as SCP provides standard Storage Service Class functionality to the requesting SCU.
- After RWA Query Local Images/Retrieve Local Images, the ViewForum Network as SCP provides standard Query/Retrieve Service Class functionality to the requesting SCU.
- After RWA Export Images (triggered by either the operator or RWA Retrieve Local Images), the ViewForum Network as SCU uses the Remote SCP Storage Service Class functionality to store Local Images on a Remote Database.
- After operator RWA Find Remote Images, the ViewForum Network as SCU uses the remote SCP Query/Retrieve Service Class functionality to query remote images.
- After operator RWA Move Remote Images, the ViewForum Network as SCU uses the remote SCP Query/Retrieve Service Class functionality to retrieve remote images.
- After operator RWA Request Storage Commitment, the ViewForum Network as SCU uses the remote SCP Storage Commitment Service Class functionality to commit remote images.
- After operator RWA Print Images, the ViewForum Network as SCU uses the remote Print Management Service Class to print local images.
- After operator RWA Request Printer Status, the ViewForum Network as SCU uses the remote Print Management Service Class to request the printer status.

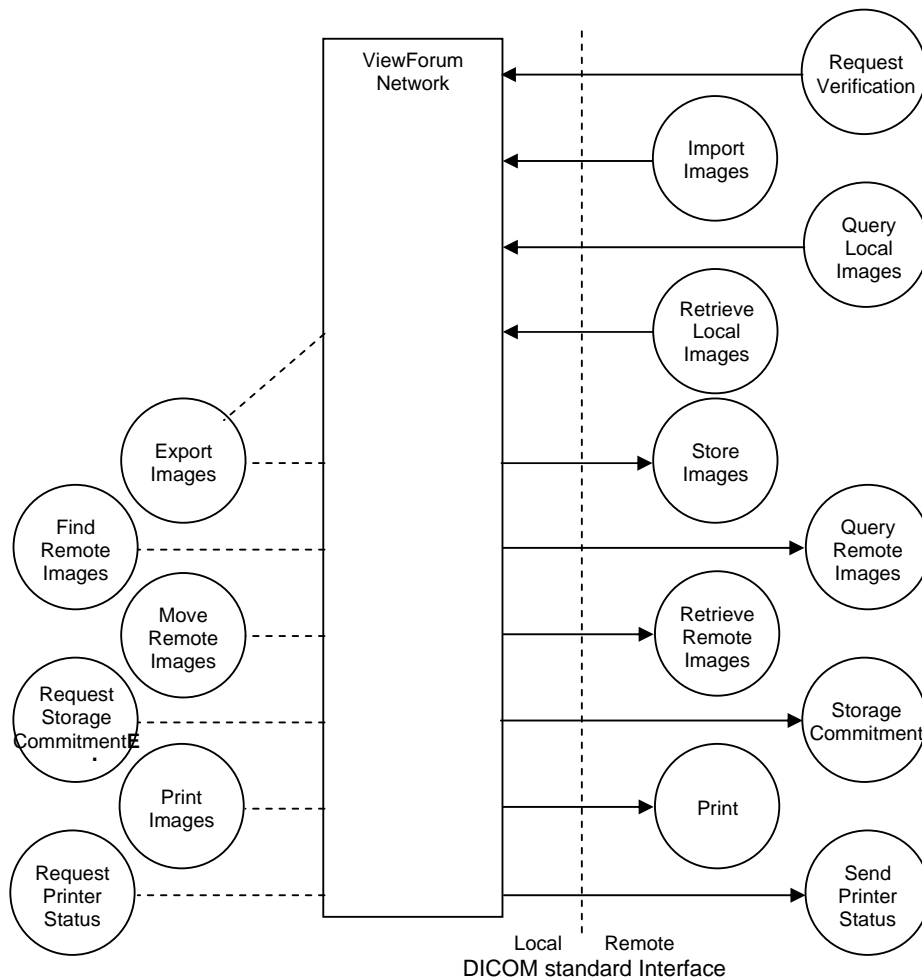


Figure 2: Network Application Data Flow Diagram

### 4.1.2. Functional Definition of AE's

This section contains a functional definition for each individual local Application Entity. This describes in general terms the functions to be performed by the AE, and the DICOM services used to accomplish these functions. In this sense, "DICOM services" refers not only to DICOM Service Classes, but also to lower level DICOM services, such as Association Services.

#### 4.1.2.1. Functional Definition of ViewForum Network

The ViewForum Network AE is the one and only Application Entity within ViewForum R6.1. It includes the following service classes.

### 4.1.3. Sequencing of Real World Activities

This section shall contain a description of specific sequencing as well as potential constraints of Real-World Activities, including any applicable user interactions, as performed by the ViewForum Network.

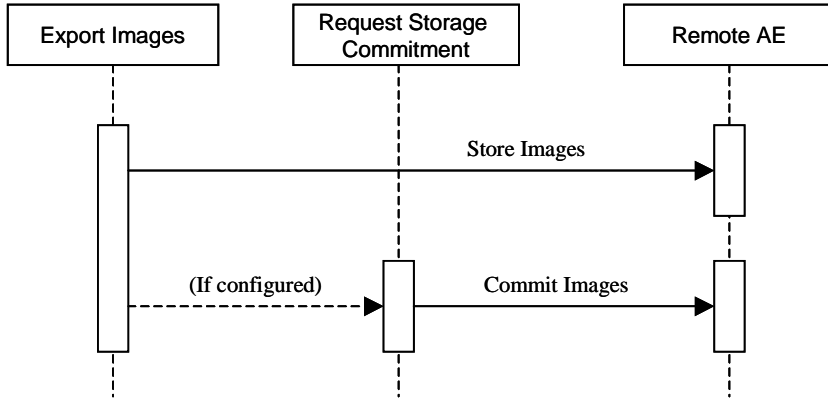


Figure 3: RWA Sequencing for Export Images

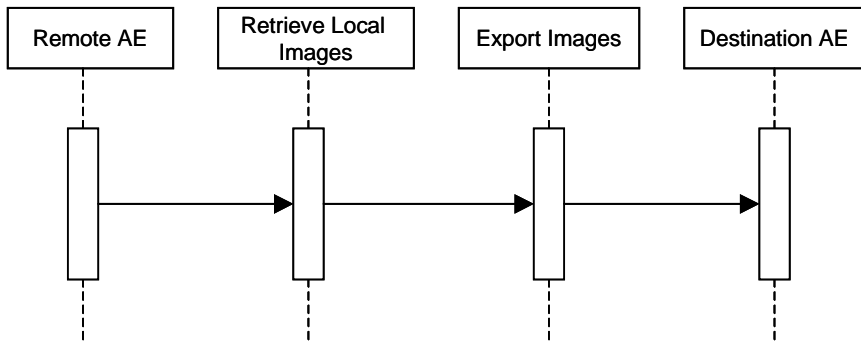


Figure 4: RWA Sequencing for Retrieve Local Images

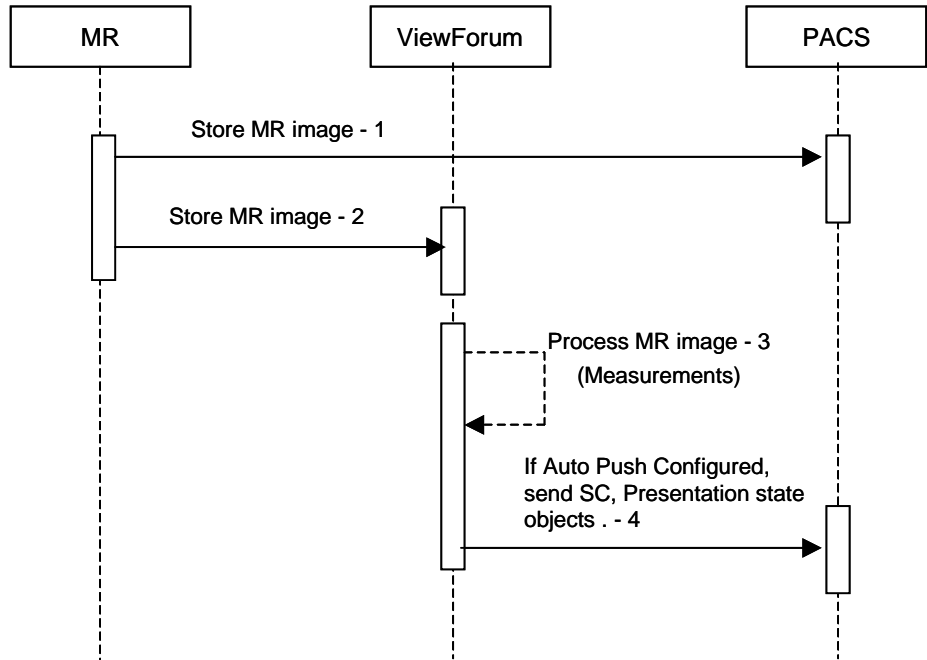


Figure 5: RWA Sequencing for Auto Push feature of ViewForum

## Sequencing of Real World Activity of Auto Push feature of the ViewForum R6.1

1. Modality MR exports images of Patient A to PACS for storage using DICOM Storage service
2. Modality MR exports images of Patient A to ViewForum using DICOM storage service
3. ViewForum processes the images of Patient A for measurement and analysis.
4. If Auto Push Configured, ViewForum exports the new data (Secondary capture images, Presentation state objects) of Patient A to PACS, when clinical user closes the study of the patient A or when ViewForum finishes the background processing of the images for Patient A

If the receiving PACS do not support the Presentation State Objects, then the Auto Push will not send the Presentation State Objects to the PACS. Also not by sending new copies of the images with overlays.

## 4.2. AE Specifications

The next section in the DICOM Conformance Statement is a set of application entity specifications. There are as many of these subsections as there are different AE's in the implementation.

### 4.2.1. ViewForum Network

Detail of this specific Application Entity is specified in this section.

#### 4.2.1.1. SOP Classes

This Application Entity provides Standard Conformance to the following SOP Classes.

**Table 4: SOP Classes for ViewForum Network**

SOP Class Name	SOP Class UID	SCU	SCP
3D Object new Storage (Private)	1.3.46.670589.5.0.2.1	Yes	Yes
3D Volume Storage new SOP Class (Private)	1.3.46.670589.5.0.1.1	Yes	Yes
Cardio Image Storage new SOP Class (Private)	1.3.46.670589.5.0.8.1	Yes	Yes
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Yes	Yes
CT Synthetic Image Storage (Private)	1.3.46.670589.5.0.9	Yes	Yes
CX Synthetic Image Storage (Private)	1.3.46.670589.5.0.12	Yes	Yes
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	No	Yes
MR Series blob set (private)	1.3.46.670589.11.0.0.12.2	Yes	Yes
MR Spectrum (Private)	1.3.46.670589.11.0.0.12.1	Yes	Yes
MR Cardio Analysis new Storage (Private)	1.3.46.670589.5.0.11.1	Yes	Yes
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Yes	Yes
MR Synthetic Image Storage (Private)	1.3.46.670589.5.0.10	Yes	Yes
Patient Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Yes	Yes
Patient Root Query/Retrieve Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Yes	Yes
Perfusion (Private)	1.3.46.670589.5.0.13	Yes	Yes
Perfusion Image Storage (Private)	1.3.46.670589.5.0.14	Yes	Yes
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	Yes	No
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Yes	Yes
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes
Specialized PMS X-Ray Image Store	1.3.46.670589.2.3.1.1	Yes	Yes
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Yes	No
Study Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root Query/Retrieve Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes
Surface Storage new (Private)	1.3.46.670589.5.0.3.1	Yes	Yes
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes
Verification SOP Class	1.2.840.10008.1.1	No	Yes
XA reconstructed X-ray SOP Class (private)	1.3.46.670589.2.4.1.1	Yes	Yes
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Yes	Yes
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	Yes	No
>Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Yes	No
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No

SOP Class Name	SOP Class UID	SCU	SCP
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Yes	No
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
>Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Yes	No
>Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No

Note: Any SOP specific behavior is documented later in the conformance statement in the applicable SOP specific conformance section.

#### 4.2.1.2. Association Policies

Each AE specification contains a description of the general association establishment and acceptance policies of the AE.

##### 4.2.1.2.1. General

The DICOM standard application context has specified.

**Table 5: DICOM Application Context**

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

##### 4.2.1.2.2. Number of Associations

The number of simultaneous associations that an Application Entity may support as a Initiator or Acceptor is specified.

**Table 6: Number of Associations as an Association Initiator for ViewForum Network**

Maximum number of simultaneous associations	3
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**Table 7: Number of Associations as an Association Acceptor for ViewForum Network**

Maximum number of simultaneous associations	9
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##### 4.2.1.2.3. Asynchronous Nature

If the implementation supports negotiation of multiple outstanding transactions this is stated here, along with the maximum number of outstanding transactions supported.

**Table 8: Asynchronous Nature as an Association Initiator for ViewForum Network**

Maximum number of outstanding asynchronous transactions	ViewForum does not support asynchronous operations, and will not perform asynchronous window negotiation
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##### 4.2.1.2.4. Implementation Identifying Information

The value supplied for Implementation Class UID and version name are documented here.

**Table 9: DICOM Implementation Class and Version for ViewForum Network**

Implementation Class UID	1.3.46.670589.5.2.23
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Implementation Version Name	ViewForum R6.1
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**4.2.1.2.5. Communication Failure Handling**

The behavior of the AE during communication failure is summarized in next table.

**Table 10: Communication Failure Behavior**

Exception	Behavior
ARTIM Timeout	Association is closed and reason logged.

**4.2.1.3. Association Initiation Policy**

This describes the conditions under which the AE will initiate an association.

The behavior of the AE during association rejection is summarized in next table

ViewForum R6.1 shall initiate associations as a result of the following events.

- The operator or a remote (Query/Retrieve) application copies selected images from the ViewForum R6.1
- The operator requests to print selected images of the ViewForum R6.1 database.
- The operator queries a remote database.
- The operator copies selected images from a remote database to another database.
- The operator requests storage commitment of images on a remote database.

**Table 11: DICOM Association Rejection Handling**

Result	Source	Reason/Diagnosis	Behavior
1 – rejected-permanent	1 – DICOM UL service-user	1 – no-reason-given	The user will be informed. The information is logged
		2 – application-context-name-not-supported	The user will be informed. The information is logged
		3 – calling-AE-title-not-recognized	The user will be informed. The information is logged
		7 – called-AE-title-not-recognized	The user will be informed. The information is logged
	2 – DICOM UL service-provider (ACSE related function)	1 – no-reason-given	The user will be informed. The information is logged
		2 – protocol-version-not-supported	The user will be informed. The information is logged
3 – DICOM UL service-provider (presentation related function)	1 – temporary-congestion	The user will be informed. The information is logged	
	2 – local-limit-exceeded	The user will be informed. The information is logged	
2 – rejected-transient	1 – DICOM UL service-user	1 – no-reason-given	The user will be informed. The information is logged
		2 – application-context-name-not-supported	The user will be informed. The information is logged
		3 – calling-AE-title-not-recognized	The user will be informed. The information is logged
		7 – called-AE-title-not-recognized	The user will be informed. The information is logged
	2 – DICOM UL service-provider (ACSE related function)	1 – no-reason-given	The user will be informed. The information is logged
		2 – protocol-version-not-supported	The user will be informed. The information is logged
	3 – DICOM UL service-provider (presentation related function)	1 – temporary-congestion	The user will be informed. The information is logged

Result	Source	Reason/Diagnosis	Behavior
		2 – local-limit-exceeded	The user will be informed. The information is logged

The behavior of the AE on receiving an association abort is summarized in next table

**Table 12: DICOM Association Abort Handling**

Source	Reason/Diagnosis	Behavior
0 – DICOM UL service-user	0 – reason-not-specified	The user will be informed. The information is logged
2 – DICOM UL service-provider	0 – reason-not-specified	The user will be informed. The information is logged
	1 – unrecognized-PDU	The user will be informed. The information is logged
	2 – unexpected-PDU	The user will be informed. The information is logged
	4 – unrecognized-PDU parameter	The user will be informed. The information is logged
	5 – unexpected-PDU parameter	The user will be informed. The information is logged
	6 – invalid-PDU-parameter value	The user will be informed. The information is logged

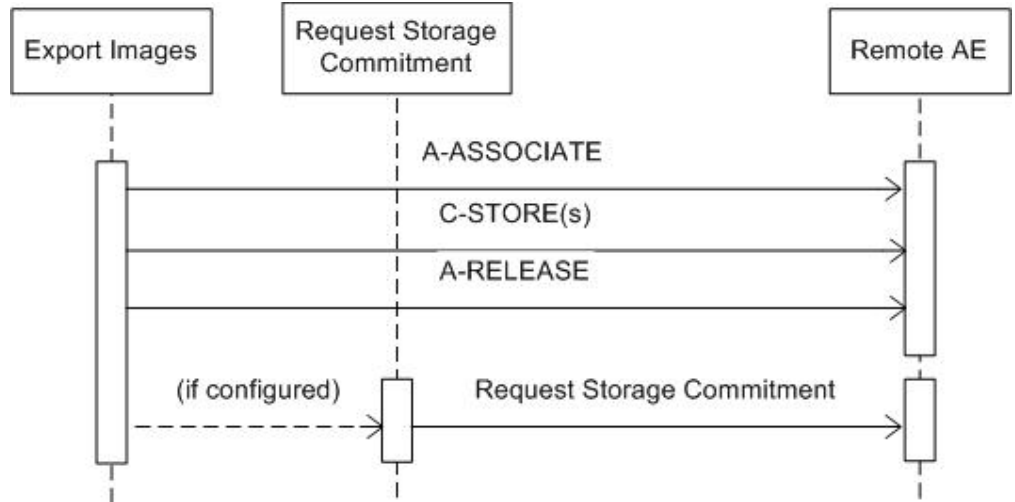
The behavior of the AE for sending an association abort is summarized in next table.

**Table 13: DICOM Association Abort Policies**

Source	Reason/Diagnosis	Behavior
0 – DICOM UL service-user	0 – reason-not-specified	The user will be informed. The information is logged
2 – DICOM UL service-provider	0 – reason-not-specified	The user will be informed. The information is logged
	1 – unrecognized-PDU	The user will be informed. The information is logged
	2 – unexpected-PDU	The user will be informed. The information is logged
	4 – unrecognized-PDU parameter	The user will be informed. The information is logged
	5 – unexpected-PDU parameter	The user will be informed. The information is logged
	6 – invalid-PDU-parameter value	The user will be informed. The information is logged

#### 4.2.1.3.1. (Real-World) Activity – Image Export

##### 4.2.1.3.1.1. Description and Sequencing of Activities



**Figure 6: (Real World) Activity - Image Export**

The RWA Export Images involves the storage of images from the local ViewForum R6.1 database to a remote system.

There are two ways for the ViewForum Network to initiate Export Images.

- The operator is able to copy the images selected in a patient folder from the local ViewForum R6.1 database to another database by means of the copy tool in the ViewForum R6.1 data-handling tool. For each selected patient ViewForum R6.1 initiates an association to the selected peer entity, and uses it to send C-STORE requests and receive the associated C-STORE responses. The association is released when all selected images in the selected folder have been transmitted. ViewForum R6.1 handles operator copy requests one after another.
- A remote application copies images from the local ViewForum R6.1 database to another database by sending a C-MOVE request to ViewForum R6.1. For each received retrieve request ViewForum R6.1 initiates an association to the requested retrieve/move destination, and uses it to send C-STORE requests and receive associated C-STORE responses. The association is released when all instances, i.e. images and presentation states as selected by the retrieve request identifier, have been stored. ViewForum R6.1 is able to simultaneously handle C-MOVE requests.

Along with the image data the ViewForum Network shall also export presentation state data. If the SCP supports the Grayscale Softcopy Presentation State storage SOP class then the applicable presentation state data will be transferred as such, otherwise the presentation state data will be merged with the image data before export. Please refer to section Coerced/Modified fields, for more information on presentation state storage.

If configured, the ViewForum Network shall also try and initiate a storage commitment of the stored image (after releasing the storage association). See section RWA Request Storage Commitment for a detailed specification of the storage commitment. The figure above shows the sequence of events after the operator or remote application initiates the RWA Export Images.

4.2.1.3.1.2. Proposed Presentation Contexts

Table 14: Proposed Presentation Contexts for (Real-World) Activity – Image Export

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
3D Object new Storage (Private)	1.3.46.670589.5.0.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
3D Volume Storage new SOP Class (Private)	1.3.46.670589.5.0.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Cardio Image Storage new SOP Class (Private)	1.3.46.670589.5.0.8.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
CT Synthetic Image Storage (Private)	1.3.46.670589.5.0.9	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
CX Synthetic Image Storage (Private)	1.3.46.670589.5.0.12	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
MR Series blob set (private)	1.3.46.670589.11.0.0.12.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
MR Spectrum (Private)	1.3.46.670589.11.0.0.12.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
MR Cardio Analysis new Storage (Private)	1.3.46.670589.5.0.11.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
MR Synthetic Image Storage (Private)	1.3.46.670589.5.0.10	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Perfusion (Private)	1.3.46.670589.5.0.13	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Perfusion Image Storage (Private)	1.3.46.670589.5.0.14	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Specialized PMS X-Ray Image Store	1.3.46.670589.2.3.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Surface Storage new (Private)	1.3.46.670589.5.0.3.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
XA reconstructed X-ray SOP Class (private)	1.3.46.670589.2.4.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Each time an association is initiated, the association initiator proposes a number of Presentation Contexts to be used on that association. The Presentation Contexts proposed by the ViewForum Network for Export Images are defined in above Table.

No Extended Negotiations supported by ViewForum Network AE for Image Export Service class.

#### 4.2.1.3.1.3. SOP Specific Conformance for Storage SOP Classes

Important remarks about the exported images:

- In case the remote system does not support modality specific image storage SOP class, the ViewForum Network will convert the images (if configured to do so) and send them via the Secondary Capture image storage SOP class.

These Secondary Capture images and additional information (like graphics, text and important attribute information) are burnt-in (if configured). The original bit depth of the Secondary Capture image is kept. Note: only standard DICOM images can be converted, private SOP classes cannot be converted.

- In case of color images, all color-coding schemes are sent as they were received.
- Attributes e.g. Study Date and Study Time will be added to images to be exported (if not yet present). This is done because there are imaging systems relying on the existence of these attributes.
- On the export of an imported image the ViewForum adds private attributes to the image.
- The exported ViewForum R6.1 images do not contain Instance Number if the original images received from modalities do not contain this attribute or provide information in other attributes for ViewForum R6.1 to generate it.
- Exported CT/MR images relate Scanogram and Slice images in the following way: Attribute 'Referenced Image Sequence' is present in the slice images and points to the related Scanogram image.  
Note that Attribute 'Frame of Reference UID' in the Scanogram (Localiser image) and related image slices are not guaranteed to be equal; this depends on the source of the images.
- For Secondary Capture images only one Window Width and Window Centre value is exported.

**Use of optional, private and retired attributes**

The transmitted Storage SOP instances may include all optional elements specified in the DICOM standard, depending on the source of the images.

The transmitted Storage SOP instances may contain Retired and Private data elements, depending on the source of the images and of the ViewForum R6.1 configuration.

When exporting images the ViewForum Network can convert the transfer syntax according to the following table.

**Table 15: Transfer Syntax Conversion**

Syntax	Source	ILE	ELE	EBE	JPEG Baseline
Destination					
ILE		+	+	+	-
ELE		+	+	+	-
EBE		+	+	+	-
JPEG Baseline	*	+	+	+	-

- *JPEG Baseline is only supported for images with Photometric Interpretation of YBR\_FULL\_422.*
- *As ViewForum R6.1 internally stores the images in uncompressed format, the image data shall be compressed to JPEG (RGB to YBR\_FULL\_422) before export.*
- *Note that JPEG Baseline transfer syntax may NOT be configured for SCU systems that are capable of handling storage of monochrome images too.*

The store response status is saved in the log file; a user error will be displayed in the GUI.

The ViewForum Network will stop the transfer of the images and release the association as soon as it receives an unsuccessful store response status. In case that a remote application requested the transfer (by means of a C-MOVE request), a move response with status unsuccessful is sent to the retrieve requestor.

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors.

**Table 16: C-STORE-RQ Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Storage is complete	Continues with next store until completed thereafter the store job is marked as completed and the association is released.
Refused	A7xx	Out of Resources	The store job fails and the association is released. The reason is logged and reported to the user
Error	A9xx	Data set does not match SOP class	The store job fails and the association is released. The reason is logged and reported to the user
	Cxxx	Cannot understand	The store job fails and the association is released. The reason is logged and reported to the user
Warning	B000	Coercion of Data Elements	Continues with next store until completed thereafter the store job is marked as completed and the association is released.
	B006	Elements discarded	Continues with next store until completed thereafter the store job is marked as completed and the association is released.
	B007	Data set does not match SOP class	Continues with next store until completed thereafter the store job is marked as completed and the association is released.

**Table 17: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The store job fails in case of association setup. The reason is logged and reported to the user.
Reply Time-out	The store job fails and association is aborted. The reason is logged and reported to the user
Association Time-out SCU	The association is released.
Association aborted	The store job fails. The reason is logged and reported to the user.

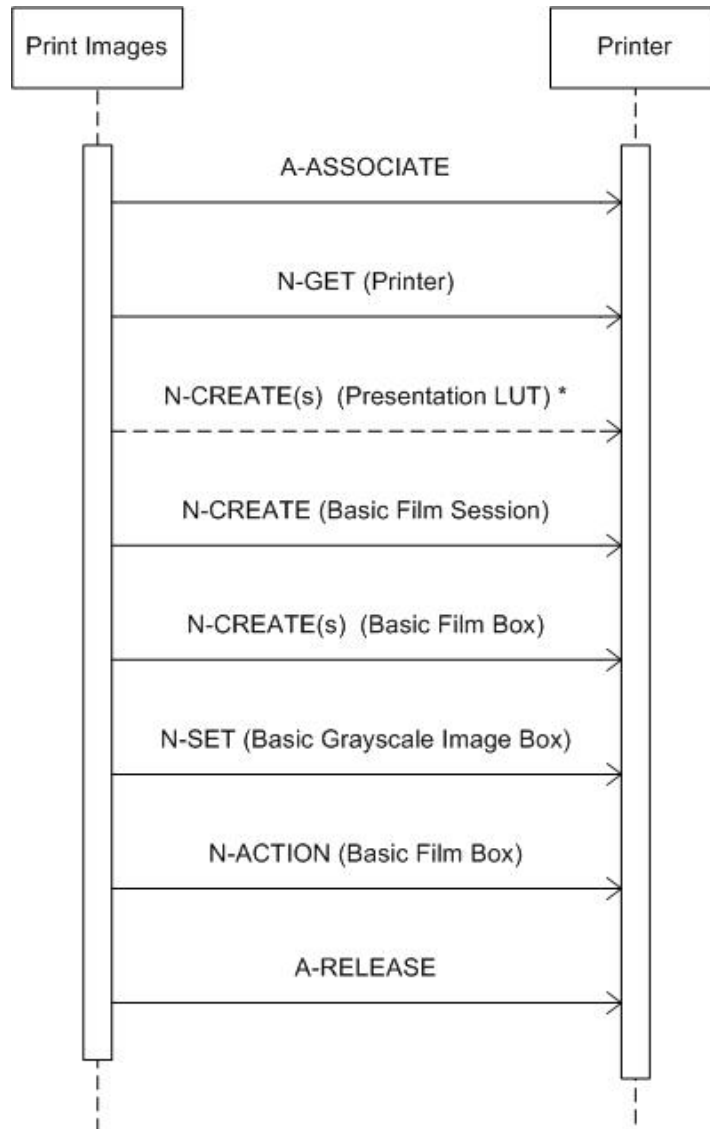
**4.2.1.3.2. (Real-World) Activity – Print Management As SCU**

**4.2.1.3.2.1. Description and Sequencing of Activities**

The RWA Print Images involves the printing of images by sending the selected images to a Print Management SCP (i.e. printer).

After selecting the print destination (out of choice list of configured printers) and some print parameters (depending on the configuration and the selected printer; these values can be configured too), the ViewForum Network shall initiate an association to the selected printer and use it to send the print job.

ViewForum R6.1 also has an option for print preview.



**Figure 7: (Real World) Activity - Print Management As SCU**

- Note that the Presentation LUT SOP class is only supported for Grayscale image printing



4.2.1.3.2.2. Proposed Presentation Contexts

Table 18: Proposed Presentation Contexts for (Real-World) Activity – Print Management As SCU

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18			SCU	None
>Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
>Printer SOP Class	1.2.840.10008.5.1.1.16	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9			SCU	None
>Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
>Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
>Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
>Printer SOP Class	1.2.840.10008.5.1.1.16	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Note: For performance reasons the ELE transfer syntax is preferred.

Each time an association is initiated, the association initiator proposes a number of Presentation Contexts to be used on that association. In this subsection, the Presentation Contexts proposed by the ViewForum Network for Print Images are defined in above table.

No extended negotiations supported by ViewForum Network for Print Management SOP class.

This section specifies each IOD created (including private IOD's).

Abbreviations used in the Module table for the column "Presence of Value" are:

ALWAYS	The attribute is always present with a value
EMPTY	The attribute is always present without any value (attribute sent zero length)
VNAP	The attribute is always present and its Value is Not Always Present (attribute sent zero length if no value is present)
ANAP	The attribute is present under specified condition – if present then it will always have a value
VNAPCV	The attribute is present under specified condition – if present then its Value is Not Always Present (attribute sent zero length if condition applies and no value is present)
ANAPEV	The attribute is present under specified condition – if present then it will not have any value

The abbreviations used in the Module table for the column "Source" are:

AUTO	The attribute value is generated automatically
CONFIG	The attribute value source is a configurable parameter
COPY	The attribute value source is another SOP instance
FIXED	The attribute value is hard-coded in the application
IMPLICIT	The attribute value source is a user-implicit setting
MPPS	The attribute value is the same as that use for Modality Performed Procedure Step
MWL	The attribute value source is a Modality Worklist
USER	The attribute value source is explicit user input

**4.2.1.3.2.3. SOP Specific Conformance for Presentation LUT SOP Class**

The Printer process conforms to the Presentation LUT SOP Class. The following DIMSE service element is supported:

**N-CREATE**

The following table lists the supported attributes for the N-CREATE DIMSE

**4.2.1.3.2.3.1. Dataset Specific Conformance for Presentation LUT SOP Class N-CREATE SCU**

**Table 19: Presentation LUT Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Presentation LUT Shape	2050,0020	CS	IDENTITY	ALWAYS	AUTO	

**Table 20: N-CREATE-RQ Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Presentation LUT successfully created	The print job continues.

Service Status	Code	Further Meaning	Description
Warning	B605	Requested Min Density or Max Density outside of printer's operating range. The printer will use its respective minimum or maximum density value instead.	The print job continues and the warning is logged.

**Table 21: DICOM Command Response Status Handling Behavior for Printer N-EVENT-REPORT**

Service Status	Further Meaning	Error Code	Behavior
Normal	Successful operation	0000	The print job is marked as completed.
Warning	(any warning)	xxxx	The print job is marked as completed and the warning is logged and reported to the user.
Failure	(any failure)	xxxx	The print job is marked as failed and the reason is logged and reported to the user

**Table 22: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

**4.2.1.3.2.4. SOP Specific Conformance for Basic Color Image Box SOP Class of the Basic Color Print Management Meta SOP Class**

The printer process conforms to the Basic Color Image SOP class.  
The following DIMSE service element is supported

**4.2.1.3.2.4.1. Dataset Specific Conformance for Basic Color Image Box N-SET SCU**

**Table 23: Image Box Pixel Presentation Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Position	2020,0010	US		ALWAYS	AUTO	
Polarity	2020,0020	CS		ALWAYS	AUTO	
Basic Color Image Sequence	2020,0111	SQ		ALWAYS	AUTO	
>Samples per Pixel	0028,0002	US	3	ALWAYS	AUTO	
>Photometric Interpretation	0028,0004	CS	RGB	ALWAYS	AUTO	
>Planar Configuration	0028,0006	US	0x0001, 0x0000	ALWAYS	IMPLICIT	
>Rows	0028,0010	US		ALWAYS	IMPLICIT	
>Columns	0028,0011	US		ALWAYS	IMPLICIT	
>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	0x0000	ALWAYS	IMPLICIT	
>Pixel Data	7FE0,0010	OW/OB		ALWAYS	AUTO	

**Table 24: N-SET-RQ Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Image successfully stored in Image Box	The print job continues.
Warning	B604	Image Size is larger than Image Box Size – The Image has been de-magnified	The print job continues and the warning is logged and reported to the user.
	B605	Requested Min Density or Max Density outside of Printer's operating Range	The print job continues and the warning is logged and reported to the user.
	B609	Image Size is larger than Image Box Size – The Image has been cropped to fit	The print job continues and the warning is logged and reported to the user.
	B60A	Image Size or combined Print Image Size is larger than Image Box Size – The Image or combined Print Image has been decimated to fit	The print job continues and the warning is logged and reported to the user.
Error	C603	Image Size is larger than Image Box Size	The print job is marked as failed and the reason is logged and reported to the user.
	C605	Insufficient Memory in Printer to store the Image	The print job is marked as failed and the reason is logged and reported to the user.
	C613	Combined Print Image Size is larger than Image Box Size	The print job is marked as failed and the reason is logged and reported to the user.

**Table 25: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

#### 4.2.1.3.2.5. SOP Specific Conformance for Basic Film Box SOP Class of the Basic Color Print Management Meta SOP Class

The ViewForum R6.1 provides standard conformance to this SOP class.

##### 4.2.1.3.2.5.1. Dataset Specific Conformance for Basic Film Box N-ACTION SCU

**Table 26: N-ACTION-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Film accepted for printing	0000	The print job continues.
Warning	Film Box SOP Instance Hierarchy does not contain Image Box SOP Instances	B603	The print job continues and the warning is logged and reported to the user.
	Image Size is larger than	B604	The print job continues and the warning is

Service Status	Further Meaning	Error Code	Behavior
	Image Box Size – The Image has been de-magnified		logged and reported to the user.
	Image Size is larger than Image Box Size – The Image has been cropped to fit	B609	The print job continues and the warning is logged and reported to the user.
	Image Size or combined Print Image Size is larger than Image Box Size – The Image or combined Print Image has been decimated to fit	B60A	The print job continues and the warning is logged and reported to the user.
Failure	Unable to create Print Job SOP Instance – Print Queue is full	C602	The print job is marked as failed and the reason is logged and reported to the user.
	Image Size is larger than Image Box Size	C603	The print job is marked as failed and the reason is logged and reported to the user.
	Combined Print Image Size is larger than Image Box Size	C613	The print job is marked as failed and the reason is logged and reported to the user.

Table 27: DICOM Command Communication Failure Behavior

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

#### 4.2.1.3.2.5.2. Dataset Specific Conformance for Basic Film Box N-CREATE SCU

Table 28: N-CREATE-RQ Status Response

Service Status	Further Meaning	Error Code	Behavior
Success	Film Box successfully created	0000	The print job continues.
Warning	Requested Min Density or Max Density outside of Printer's operating Range	B605	The print job continues and the warning is logged.
Failure	There is an existing Film Box that has not been printed	C616	The print job is marked as failed and the reason is logged.

Table 29: DICOM Command Communication Failure Behavior

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

#### 4.2.1.3.2.6. SOP Specific Conformance for Basic Film Session SOP Class of the Basic Color Print Management Meta SOP Class

The ViewForum R6.1 provides standard conformance to this SOP class.

#### 4.2.1.3.2.6.1. Dataset Specific Conformance for Basic Film Session N-CREATE SCU

**Table 30: N-CREATE-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Film Session successfully created	0000	The print job continues.
Warning	Memory Allocation not supported	B600	The print job continues and the warning is logged.

**Table 31: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

#### 4.2.1.3.2.7. SOP Specific Conformance for Printer SOP Class of the Basic Color Print Management Meta SOP Class

The ViewForum R6.1 provides standard conformance to this SOP class.

##### 4.2.1.3.2.7.1. Dataset Specific Conformance for Printer N-EVENT-REPORT SCP

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 32: N-EVENT-REPORT-RSP Status Response**

Service Status	Further Meaning	Error Code	Behavior
Normal	Successful operation	0000	The print job is marked as completed.
Warning	(any warning)	xxxx	The print job is marked as completed and the warning is logged and reported to the user.
Failure	(any failure)	xxxx	The print job is marked as failed and the reason is logged and reported to the user

**Table 33: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

##### 4.2.1.3.2.7.2. Dataset Specific Conformance for Printer N-GET SCU

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 34: N-GET-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Successful operation	0000	The print job continues.
Warning	(any warning)	xxxx	The print job continues and the warning is logged.
Failure	(any failure)	xxxx	The print job is marked as failed, the reason is logged and reported to the user.

**Table 35: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

**4.2.1.3.2.8. SOP Specific Conformance for Basic Film Box SOP Class of the Basic Grayscale Print Management Meta SOP Class**

The ViewForum R6.1 provides standard conformance to this SOP class

**4.2.1.3.2.8.1. Dataset Specific Conformance for Basic Film Box N-ACTION SCU**

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 36: N-ACTION-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Film accepted for printing	0000	The print job continues.
Warning	Film Box SOP Instance Hierarchy does not contain Image Box SOP Instances	B603	The print job continues and the warning is logged and reported to the user.
	Image Size is larger than Image Box Size – The Image has been de-magnified	B604	The print job continues and the warning is logged and reported to the user.
	Image Size is larger than Image Box Size – The Image has been cropped to fit	B609	The print job continues and the warning is logged and reported to the user.
	Image Size or combined Print Image Size is larger than Image Box Size – The Image or combined Print Image has been decimated to fit	B60A	The print job continues and the warning is logged and reported to the user.
Failure	Unable to create Print Job SOP Instance – Print Queue is full	C602	The print job is marked as failed and the reason is logged and reported to the user.
	Image Size is larger than Image Box Size	C603	The print job is marked as failed and the reason is logged and reported to the user.
	Combined Print Image Size is larger than Image Box Size	C613	The print job is marked as failed and the reason is logged and reported to the user.

**Table 37: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.

Exception	Behavior
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

**4.2.1.3.2.8.2. Dataset Specific Conformance for Basic Film Box N-CREATE SCU**

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 38: Basic Film Box Presentation Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Display Format	2010,0010	ST	CUSTOM, STANDARD	ALWAYS	AUTO	
Film Orientation	2010,0040	CS	LANDSCAPE, PORTRAIT	ALWAYS	CONFIG	
Film Size ID	2010,0050	CS	A, 10INX12IN, 10INX14IN, 11INX14IN, 11INX17IN, 14INX14IN, 14INX17IN, 24CMX24CM, 24CMX30CM, 8INX10IN, 8_5INX11IN, A3, A4	ALWAYS	CONFIG	
Magnification Type	2010,0060	CS		ANAPEV	AUTO	
Min Density	2010,0120	US		ANAPEV	AUTO	
Max Density	2010,0130	US		VNAP	CONFIG	
Trim	2010,0140	CS	NO, YES	ANAPEV	AUTO	
Configuration Information	2010,0150	ST	L	ANAPEV	AUTO	

**Table 39: Basic Film Box Relationship Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Referenced Film Session Sequence	2010,0500	SQ		ALWAYS	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	
Referenced Presentation LUT Sequence	2050,0500	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	

**Table 40: N-CREATE-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Film Box successfully created	0000	The print job continues.
Warning	Requested Min Density or Max Density outside of Printer's operating Range	B605	The print job continues and the warning is logged.
Failure	There is an existing Film Box that has not been printed	C616	The print job is marked as failed and the reason is logged.

**Table 41: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the



Exception	Behavior
	user.

**4.2.1.3.2.9. SOP Specific Conformance for Basic Film Session SOP Class of the Basic Grayscale Print Management Meta SOP Class**

The ViewForum R6.1 provides standard conformance to this SOP class.

**4.2.1.3.2.9.1. Dataset Specific Conformance for Basic Film Session N-CREATE SCU**

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 42: Basic Film Session Presentation Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Number of Copies	2000,0010	IS	1 to 99	ALWAYS	USER	
Print Priority	2000,0020	CS	HIGH	ALWAYS	USER	
Medium Type	2000,0030	CS	BLUE FILM, CLEAR FILM, PAPER	ANAPEV	IMPLICIT	
Film Destination	2000,0040	CS	MAGAZINE, PROCESSOR	ANAPEV	USER	
Film Session Label	2000,0050	LO	Philips Medical Systems	ALWAYS	COPY	

**Table 43: N-CREATE-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Film Session successfully created	0000	The print job continues.
Warning	Memory Allocation not supported	B600	The print job continues and the warning is logged.

**Table 44: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

**4.2.1.3.2.10. SOP Specific Conformance for Basic Grayscale Image Box SOP Class of the Basic Grayscale Print Management Meta SOP Class**

The ViewForum R6.1 provides standard conformance to this SOP class.

**4.2.1.3.2.10.1. Dataset Specific Conformance for Basic Grayscale Image Box N-SET SCU**

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 45: Image Box Pixel Presentation Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Position	2020,0010	US		ALWAYS	AUTO	
Polarity	2020,0020	CS		ALWAYS	AUTO	
Basic Grayscale Image Sequence	2020,0110	SQ		ALWAYS	AUTO	
>Samples per Pixel	0028,0002	US	1	ALWAYS	AUTO	
>Photometric Interpretation	0028,0004	CS	MONOCHROME2	ALWAYS	AUTO	
>Rows	0028,0010	US		ALWAYS	IMPLICIT	
>Columns	0028,0011	US		ALWAYS	IMPLICIT	
>Bits Allocated	0028,0100	US	16, 8	ALWAYS	AUTO	
>Bits Stored	0028,0101	US	12, 8	ALWAYS	IMPLICIT	
>High Bit	0028,0102	US	11, 7	ALWAYS	AUTO	
>Pixel Representation	0028,0103	US	0x0000	ALWAYS	AUTO	
>Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	

**Table 46: N-SET-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Image successfully stored in Image Box	0000	The print job continues.
Warning	Image Size is larger than Image Box Size – The Image has been de-magnified	B604	The print job continues and the warning is logged and reported to the user.
	Requested Min Density or Max Density outside of Printer's operating Range	B605	The print job continues and the warning is logged and reported to the user.
	Image Size is larger than Image Box Size – The Image has been cropped to fit	B609	The print job continues and the warning is logged and reported to the user.
	Image Size or combined Print Image Size is larger than Image Box Size – The Image or combined Print Image has been decimated to fit	B60A	The print job continues and the warning is logged and reported to the user.
Error	Image Size is larger than Image Box Size	C603	The print job is marked as failed and the reason is logged and reported to the user
	Insufficient Memory in Printer to store the Image	C605	The print job is marked as failed and the reason is logged and reported to the user
	Combined Print Image Size is larger than Image Box Size	C613	The print job is marked as failed and the reason is logged and reported to the user

**Table 47: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

#### 4.2.1.3.2.11. SOP Specific Conformance for Printer SOP Class of the Basic Grayscale Print Management Meta SOP Class

The ViewForum R6.1 provides standard conformance to this SOP class.

#### 4.2.1.3.2.11.1. Dataset Specific Conformance for Printer N-EVENT-REPORT SCU

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 48: Printer Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Printer Status Info	2110,0020	CS		ALWAYS	AUTO	

**Table 49: N-EVENT-REPORT-RSP Status Response**

Service Status	Further Meaning	Error Code	Behavior
Normal	Successful operation	0000	The print job is marked as completed.
Warning	(any warning)	xxxx	The print job is marked as completed and the warning is logged and reported to the user.
Failure	(any failure)	xxxx	The print job is marked as failed and the reason is logged and reported to the user

**Table 50: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

#### 4.2.1.3.2.11.2. Dataset Specific Conformance for Printer N-GET SCU

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 51: Printer Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Printer Status	2110,0010	CS		ALWAYS	AUTO	
Printer Status Info	2110,0020	CS		ALWAYS	AUTO	

**Table 52: N-GET-RQ Status Response**

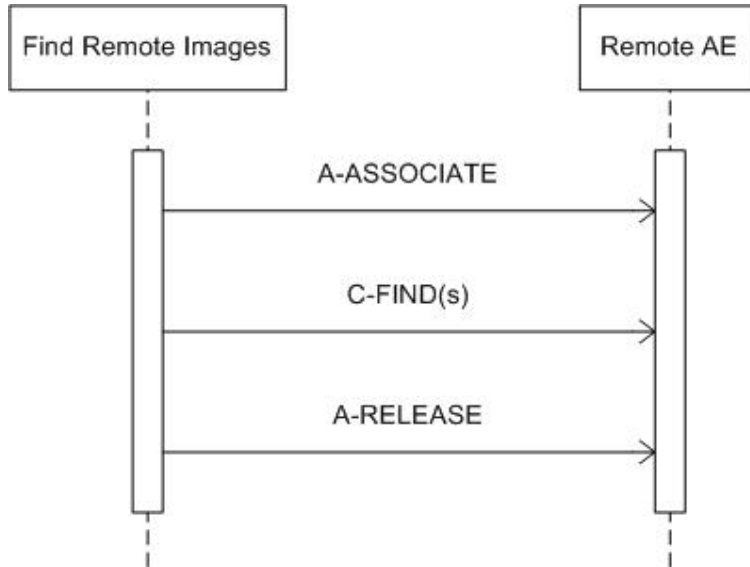
Service Status	Further Meaning	Error Code	Behavior
Success	Successful operation	0000	The print job continues.
Warning	(any warning)	xxxx	The print job continues and the warning is logged.
Failure	(any failure)	xxxx	The print job is marked as failed, the reason is logged and reported to the user.

**Table 53: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	Print job fails.
Reply Time-out	The association is released.
Association Time-out SCU	The association is released.
Association aborted	The Print job is marked as failed. The reason is logged and reported to the user.

**4.2.1.3.3. (Real-World) Activity – FIND As SCU**

**4.2.1.3.3.1. Description and Sequencing of Activities**



**Figure 8: (Real World) Activity - FIND As SCU**

The RWA Find Remote Images involves the query of a remote system to find matching images in the remote database.

The operator queries a remote database by means of the query tool in the ViewForum R6.1 data handling facility. The ViewForum Network initiates an association to the selected peer entity and uses it to send Query (C-FIND) requests (and receive the associated responses). The association is released when the execution of the query completes (the Q/R dialog on the GUI is closed).

**4.2.1.3.3.2. Proposed Presentation Contexts**

**Table 54: Proposed Presentation Contexts for (Real-World) Activity – FIND As SCU**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Study Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Each time an association is initiated, the association initiator proposes a number of Presentation Contexts to be used on that association. In this subsection, the Presentation Contexts proposed by the ViewForum Network for Find Remote Images are defined in above table.

*Note: For performance reasons the ELE transfer syntax is preferred.*

No extended negotiations supported by the ViewForum Network AE for FIND SOP class.

#### 4.2.1.3.3.3. SOP Specific Conformance for Patient Root Query/Retrieve Information Model - FIND SOP Class

The ViewForum R6.1 provides standard conformance to this SOP class. The ViewForum Network AE will not generate queries containing optional keys and it will not generate relational queries.

##### 4.2.1.3.3.3.1. Dataset Specific Conformance for ViewForum R 6.1 Patient Root Q/R CF SCU

In the following table the supported query keys for each query level are described. Universal matching shall be supported as default.

**Table 55: Supported Query Keys for**

Attribute Name	Tag	VR	Type Of Matching	Comment
Query/Retrieve Level	0008,0052	CS	Single Value	
<b>Q/R Image level</b>				
Patient ID	0010,0020	LO	Universal, Wildcard	
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		
SOP Instance UID	0008,0018	UI		
Instance Number	0020,0013	IS		
SOP Class UID	0008,0016	UI		
Content Date	0008,0023	DA		
Content Time	0008,0033	TM		
<b>Q/R Patient level</b>				
Patient ID	0010,0020	LO	Universal, Wildcard	
Patient's Name	0010,0010	PN	Universal, Wildcard	
Patient's Birth Date	0010,0030	DA		
Patient's Sex	0010,0040	CS		
<b>Q/R Series level</b>				
Patient ID	0010,0020	LO	Universal, Wildcard	
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		
Modality	0008,0060	CS		
Series Number	0020,0011	IS		
Body Part Examined	0018,0015	CS		
Protocol Name	0018,1030	LO		
Performed Procedure Step Start Date	0040,0244	DA		
Performed Procedure Step ID	0040,0253	SH		
<b>Q/R Study level (Patient Root)</b>				
Patient ID	0010,0020	LO	Universal, Wildcard	
Study Instance UID	0020,000D	UI		
Study Date	0008,0020	DA		
Study Time	0008,0030	TM		
Accession Number	0008,0050	SH		
Modalities in Study	0008,0061	CS		
Referring Physician's Name	0008,0090	PN		
Study Description	0008,1030	LO		
Study ID	0020,0010	SH		

Do note that the query results screen will display all patients that have an empty patient ID as one patient entry.

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 56: C-FIND-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Matching is complete	0000	The find results are displayed.
Refused	Out of Resources	A700	No find results are displayed. The reason is logged.
Failed	Identifier does not match SOP class	A900	No find results are displayed. The reason is logged.
	Unable to process	Cxxx	No find results are displayed. The reason is logged.
Cancel	Matching terminated due to Cancel Request	FE00	No find results are displayed. The reason is logged.
Pending	Matches are continuing – Current match is supplied and any optional keys were supported in the same manner as required keys	FF00	The find command continues.
	Matches are continuing – Warning that one or more optional keys were not supported for existence and/or matching for this identifier	FF01	The find command continues.

**Table 57: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	N/A
Reply Time-out	The query fails and the association is aborted. The reason is logged and reported to the user.
Association Time-out SCU	The association is released.
Association aborted	The query fails. The reason is logged and reported to the user.

**4.2.1.3.3.4. SOP Specific Conformance for Study Root Query/Retrieve Information Model - FIND SOP Class**

The ViewForum R6.1 provides standard conformance to this SOP class. The ViewForum Network AE will not generate queries containing optional keys and it will not generate relational queries.

**4.2.1.3.3.4.1. Dataset Specific Conformance for ViewForum R 6.1 Study Root Q/R CF SCU**

In the following table the supported query keys for each query level are described. Universal matching shall be supported as default.

**Table 58: Supported Query Keys for**

Attribute Name	Tag	VR	Type Of Matching	Comment
Query/Retrieve Level	0008,0052	CS	Single Value	
<b>Q/R Image level</b>				
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		

Attribute Name	Tag	VR	Type Of Matching	Comment
SOP Instance UID	0008,0018	UI		
Instance Number	0020,0013	IS		
SOP Class UID	0008,0016	UI		
Content Date	0008,0023	DA		
Content Time	0008,0033	TM		
Q/R Series level				
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		
Modality	0008,0060	CS		
Series Number	0020,0011	IS		
Body Part Examined	0018,0015	CS		
Protocol Name	0018,1030	LO		
Performed Procedure Step Start Date	0040,0244	DA		
Performed Procedure Step ID	0040,0253	SH		
Q/R Study level (Study Root)				
Study Instance UID	0020,000D	UI		
Study Date	0008,0020	DA		
Study Time	0008,0030	TM		
Accession Number	0008,0050	SH		
Modalities in Study	0008,0061	CS		
Referring Physician's Name	0008,0090	PN		
Study Description	0008,1030	LO		
Patient's Name	0010,0010	PN	Universal, WildCard	
Patient ID	0010,0020	LO	Universal, Wildcard	
Study ID	0020,0010	SH		

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors.

**Table 59: C-FIND-RQ Status Response**

Service Status	Further Meaning	Error Code	Behavior
Success	Matching is complete	0000	The find results are displayed.
Refused	Out of Resources	A700	No find results are displayed. The reason is logged.
Failed	Identifier does not match SOP class	A900	No find results are displayed. The reason is logged.
	Unable to process	Cxxx	No find results are displayed. The reason is logged.
Cancel	Matching terminated due to Cancel Request	FE00	No find results are displayed. The reason is logged.
Pending	Matches are continuing – Current match is supplied and any optional keys were supported in the same manner as required keys	FF00	The find command continues.
	Matches are continuing – Warning that one or more optional keys were not supported for existence and/or matching for this identifier	FF01	The find command continues.

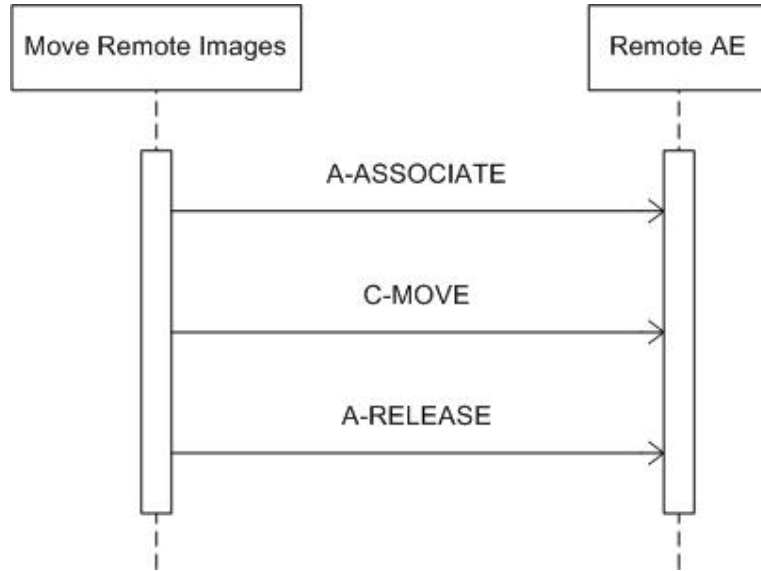
**Table 60: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	N/A
Reply Time-out	The query fails and the association is aborted. The reason is logged and reported to the user.

Exception	Behavior
Association Time-out SCU	The association is released.
Association aborted	The query fails. The reason is logged and reported to the user.

**4.2.1.3.4. (Real-World) Activity – MOVE As SCU**

**4.2.1.3.4.1. Description and Sequencing of Activities**



**Figure 9: (Real World) Activity - MOVE As SCU**

The RWA Move Remote Images involves the retrieve of images on a remote system by moving matching images from the remote database to another database.

The operator is able to copy the selected images in a patient folder from a remote database to another, local or remote, database by means of the copy tool in the ViewForum R6.1 data handling facility. The ViewForum Network initiates for each copy request an association to the selected peer entity (Remote AE) and uses it to send the Retrieve (C-MOVE) request (and receive the associated responses). An examination may contain both images and presentation states. The association is released after the final Retrieve (C-MOVE) response for the related request has been received (no more pending).

**4.2.1.3.4.2. Proposed Presentation Contexts**

**Table 61: Proposed Presentation Contexts for (Real-World) Activity – MOVE As SCU**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root	1.2.840.10008.5.1.4.1.2.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None



Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Query/Retrieve Information Model - MOVE SOP Class		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Study Root Query/Retrieve Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Each time an association is initiated, the association initiator proposes a number of Presentation Contexts to be used on that association. In this subsection, the Presentation Contexts proposed by the ViewForum Network for Move Remote Images are defined in the above table.

No extended negotiations are supported by the ViewForum Network AE for the MOVE SOP

**4.2.1.3.4.3. SOP Specific Conformance for Patient Root Query/Retrieve Information Model - MOVE SOP Class**

The ViewForum R6.1 provides standard conformance to this SOP class.

**4.2.1.3.4.3.1. Dataset Specific Conformance for ViewForum R 6.1 Patient Root Q/R CM SCU**

**Table 62: Identifiers for MOVE SCU**

Attribute Name	Tag	VR	Comment
<b>Patient Root Information Model</b>			
Query/Retrieve Level	0008,0052	CS	
<b>Q/R Image level</b>			
SOP Instance UID	0008,0018	UI	Image Level
Patient ID	0010,0020	LO	
Study Instance UID	0020,000D	UI	
Series Instance UID	0020,000E	UI	
<b>Q/R Patient level</b>			
Patient ID	0010,0020	LO	Patient Level
<b>Q/R Series level</b>			
Patient ID	0010,0020	LO	Series Level
Study Instance UID	0020,000D	UI	
Series Instance UID	0020,000E	UI	
<b>Q/R Study level (Patient Root)</b>			
Patient ID	0010,0020	LO	Study Level
Study Instance UID	0020,000D	UI	

Following are the details regarding the specific conformance, including response behavior to all status codes, both from application level and communication errors..

**Table 63: C-MOVE-RQ Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Sub-operations complete-No Failures	The move job is marked as completed. The association is released.

Service Status	Code	Further Meaning	Description
Refused	A701	Out of Resources- Unable to calculate number of matches	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
	A702	Out of Resources – Unable to perform sub- operations	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
	A801	Move Destination unknown	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
Failed	A900	Identifier does not match SOP class	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
	Cxxx	Unable to process	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
Cancel	FE00	Sub-operations terminated due to Cancel Indication	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
Warning	B000	Sub-operations complete – One or more Failures	The move job is marked as completed. The association is released.
Pending	FF00	Sub-operations are continuing.	The move job continues.

**Table 64: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The move job fails in case of association setup. The reason is logged and reported o the user.
Reply Time-out	The move job fails and the association is aborted. The reason is logged and reported to the user.
Association Time-out SCU	N/A
Association aborted	The move job fails. The reason is logged and reported to the user.

#### 4.2.1.3.4.4. SOP Specific Conformance for Study Root Query/Retrieve Information Model - MOVE SOP Class

The ViewForum R6.1 provides standard conformance to this SOP class.

##### 4.2.1.3.4.4.1. Dataset Specific Conformance for ViewForum R 6.1 Study Root Q/R CM SCU

**Table 65: Identifiers for MOVE SCU**

Attribute Name	Tag	VR	Comment
<b>Study Root Information Model</b>			
Query/Retrieve Level	0008,0052	CS	
<b>Q/R Image level</b>			
SOP Instance UID	0008,0018	UI	Image Level
Study Instance UID	0020,000D	UI	
Series Instance UID	0020,000E	UI	
<b>Q/R Series level</b>			
Study Instance UID	0020,000D	UI	Series Level
Series Instance UID	0020,000E	UI	

Attribute Name	Tag	VR	Comment
<b>Q/R Study level (Study Root)</b>			
Study Instance UID	0020,000D	UI	Study Level

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 66: C-MOVE-RQ Status Response**

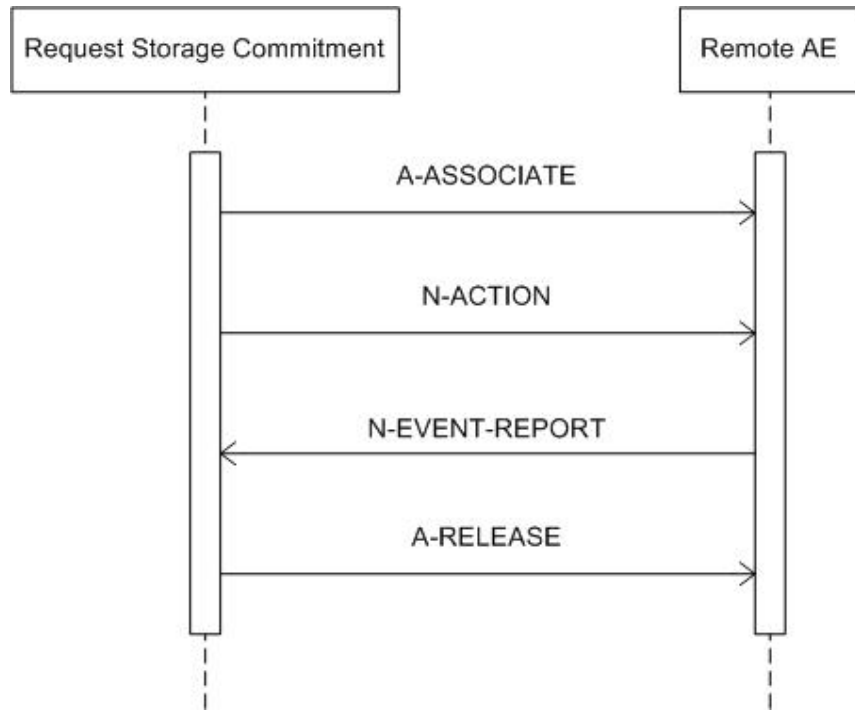
Service Status	Code	Further Meaning	Description
Success	0000	Sub-operations complete-No Failures	The move job is marked as completed. The association is released.
Refused	A701	Out of Resources-Unable to calculate number of matches	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
	A702	Out of Resources – Unable to perform sub-operations	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
	A801	Move Destination unknown	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
Failed	A900	Identifier does not match SOP class	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
	Cxxx	Unable to process	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
Cancel	FE00	Sub-operations terminated due to Cancel Indication	The move job is marked as failed. The association is released. The reason is logged and reported o the user.
Warning	B000	Sub-operations complete – One or more Failures	The move job is marked as completed. The association is released.
Pending	FF00	Sub-operations are continuing.	The move job continues.

**Table 67: DICOM Command Communication Failure Behavior**

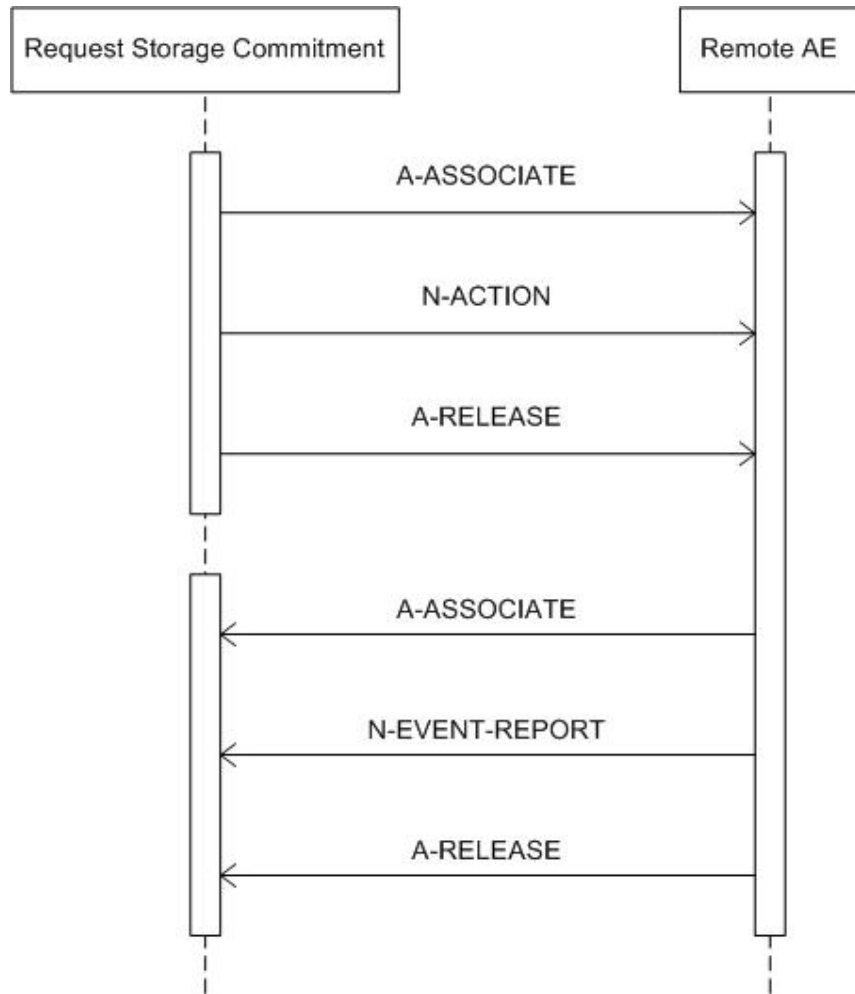
Exception	Behavior
ARTIM Time-out	The move job fails in case of association setup. The reason is logged and reported o the user.
Reply Time-out	The move job fails and the association is aborted. The reason is logged and reported to the user.
Association Time-out SCU	N/A
Association aborted	The move job fails. The reason is logged and reported to the user.

**4.2.1.3.5. (Real-World) Activity – Storage Commitment Push Model AS SCU**

**4.2.1.3.5.1. Description and Sequencing of Activities**



**Figure 10: (Real World) Activity - Storage Commitment Push Model AS SCU**



**Figure 11: Sequencing of Aysnchronous RWA Request Storgae Commitment**

The RWA Request Storage Commitment involves the storage commitment of images on a remote system.

If configured, Storage Commitment will be initiated in a new association after closing the association of the related image storage (C-STORE). This new association will be open until the remote archive sends a storage commitment report (synchronous) or when the configured maximum time is passed. When this maximum configured period is passed, it is the responsibility of the remote archive to setup a new association with ViewForum R6.1 and send the storage commitment report (asynchronous)

**4.2.1.3.5.2. Proposed Presentation Contexts**

**Table 68: Proposed Presentation Contexts for (Real-World) Activity – Storage Commitment Push Model AS SCU**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

Each time an association is initiated, the association initiator proposes a number of Presentation Contexts to be used on that association. In this subsection, the Presentation Contexts proposed by the ViewForum Network for Request Storage Commitment are defined in the above table.

No extended negotiations are supported by the ViewForum Network AE for Storage Commitment Service Class

**4.2.1.3.5.3. SOP Specific Conformance for Storage Commitment Push Model SOP Class**

ViewForum R6.1 conforms to the standard Storage Commitment model

**4.2.1.3.5.3.1. Dataset Specific Conformance for Storage Commitment Push Model N-ACTION SCU**

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 69: Storage Commitment Attribute for N-ACTION-RQ**

Attribute Name	Tag	Comment
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**Table 70: N-ACTION-RQ Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Operation complete	Continues with waiting for storage commitment.
Failure	xxxx	(any failure)	The reason is logged.

**Table 71: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The reason is logged.
Reply Time-out	The association is released. Continues with waiting for storage commitment.
Association Time-out SCU	The association is released. Continues with waiting for storage commitment
Association aborted	Continues with waiting for storage commitment.

#### 4.2.1.3.5.3.2. Dataset Specific Conformance for Storage Commitment Push Model N-EVENT-REPORT SCU

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 72: N-EVENT-REPORT-RSP Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Operation complete	Continues with waiting for storage commitment.
Failure	xxxx	(any failure)	The reason is logged.

**Table 73: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The reason is logged.
Reply Time-out	The association is released. Continues with waiting for storage commitment.
Association Time-out SCU	The association is released. Continues with waiting for storage commitment
Association aborted	Continues with waiting for storage commitment.

**4.2.1.4. Association Acceptance Policy**

This describes the conditions under which the AE will initiate an association.

The behavior of the AE during association rejection is summarized in next table

ViewForum R6.1 shall accept Associations for the following purposes:

- To allow remote applications to store images in the ViewForum R6.1 database (i.e. image import).
- To allow remote applications to query the View Forum R6.1 database.
- To allow remote applications to retrieve images from the ViewForum R6.1 database
- To allow remote applications to verify application level communication with ViewForum R6.1

The ViewForum Network AE shall reject association requests from unknown applications, i.e. applications that offer an unknown “calling AE title”. An application is known if – and only if – it is defined during configuration of the ViewForum system. The ViewForum Network shall reject association requests from applications that do not address the ViewForum Network, i.e. applications that offer a wrong “called AE title”. The ViewForum Network title is defined during configuration of the ViewForum system.

**Table 74: DICOM Association Rejection Handling**

Result	Source	Reason/Diagnosis	Behavior
1 – rejected-permanent	1 – DICOM UL service-user	1 – no-reason-given	The user will be informed. The information is logged
		2 – application-context-name-not-supported	The user will be informed. The information is logged
		3 – calling-AE-title-not-recognized	The user will be informed. The information is logged
		7 – called-AE-title-not-recognized	The user will be informed. The information is logged
	2 – DICOM UL service-provider (ACSE related function)	1 – no-reason-given	The user will be informed. The information is logged
		2 – protocol-version-not-supported	The user will be informed. The information is logged
	3 – DICOM UL service-provider (presentation related function)	1 – temporary-congestion	The user will be informed. The information is logged
		2 – local-limit-exceeded	The user will be informed. The information is logged
2 – rejected-transient	1 – DICOM UL service-user	1 – no-reason-given	The user will be informed. The information is logged
		2 – application-context-name-not-supported	The user will be informed. The information is logged
		3 – calling-AE-title-not-recognized	The user will be informed. The information is logged
		7 – called-AE-title-not-recognized	The user will be informed. The information is logged
	2 – DICOM UL service-provider (ACSE related function)	1 – no-reason-given	The user will be informed. The information is logged
		2 – protocol-version-not-supported	The user will be informed. The information is logged
	3 – DICOM UL service-provider (presentation related function)	1 – temporary-congestion	The user will be informed. The information is logged
		2 – local-limit-exceeded	The user will be informed. The information is logged



The behavior of the AE on receiving an association abort is summarized in next table

**Table 75: DICOM Association Abort Handling**

Source	Reason/Diagnosis	Behavior
0 – DICOM UL service-user	0 – reason-not-specified	The user will be informed. The information is logged
2 – DICOM UL service-provider	0 – reason-not-specified	The user will be informed. The information is logged
	1 – unrecognized-PDU	The user will be informed. The information is logged
	2 – unexpected-PDU	The user will be informed. The information is logged
	4 – unrecognized-PDU parameter	The user will be informed. The information is logged
	5 – unexpected-PDU parameter	The user will be informed. The information is logged
	6 – invalid-PDU-parameter value	The user will be informed. The information is logged

The behavior of the AE for sending an association abort is summarized in next table.

**Table 76: DICOM Association Abort Policies**

Source	Reason/Diagnosis	Behavior
0 – DICOM UL service-user	0 – reason-not-specified	The user will be informed. The information is logged
2 – DICOM UL service-provider	0 – reason-not-specified	The user will be informed. The information is logged
	1 – unrecognized-PDU	The user will be informed. The information is logged
	2 – unexpected-PDU	The user will be informed. The information is logged
	4 – unrecognized-PDU parameter	The user will be informed. The information is logged
	5 – unexpected-PDU parameter	The user will be informed. The information is logged
	6 – invalid-PDU-parameter value	The user will be informed. The information is logged

4.2.1.4.1. (Real-World) Activity – Image Import

4.2.1.4.1.1. Description and Sequencing of Activities

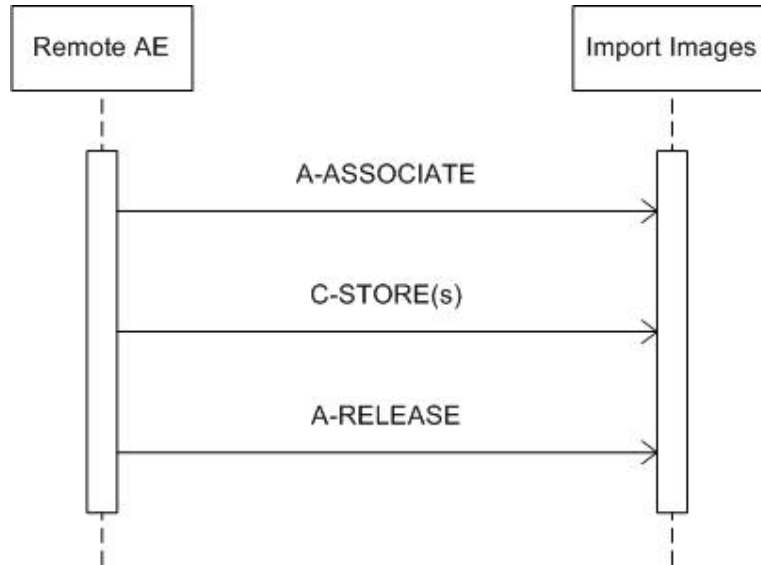


Figure 12: (Real World) Activity - Image Import

The ViewForum Network shall accept associations from systems that wish to store images in the ViewForum R6.1 database using the C-STORE command.

4.2.1.4.1.2. Accepted Presentation Contexts

Table 77: Acceptable Presentation Contexts for (Real-World) Activity – Image Import

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
3D Object new Storage (Private)	1.3.46.670589.5.0.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
3D Volume Storage new SOP Class (Private)	1.3.46.670589.5.0.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Cardio Image Storage new SOP Class (Private)	1.3.46.670589.5.0.8.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
CT Synthetic Image Storage (Private)	1.3.46.670589.5.0.9	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
CX Synthetic Image Storage (Private)	1.3.46.670589.5.0.12	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
MR Series blob set (private)	1.3.46.670589.11.0.0.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
MR Spectrum (Private)	1.3.46.670589.11.0.0.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
MR Cardio Analysis new Storage (Private)	1.3.46.670589.5.0.11.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
MR Synthetic Image Storage (Private)	1.3.46.670589.5.0.10	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Perfusion (Private)	1.3.46.670589.5.0.13	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Perfusion Image Storage (Private)	1.3.46.670589.5.0.14	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Specialized PMS X-Ray Image Store	1.3.46.670589.2.3.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Surface Storage new (Private)	1.3.46.670589.5.0.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
XA reconstructed X-ray SOP Class (private)	1.3.46.670589.2.4.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

The ViewForum Network shall be able to accept the presentation contexts as specified in the above table.

No extended negotiations are supported by the ViewForum Network

**4.2.1.4.1.3. SOP Specific Conformance for Storage SOP Classes**

The ViewForum R6.1 provides standard conformance to Storage Service as SCP.

**Table 78: C-STORE-RSP Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Storage is complete	The image(s) will be stored in the ViewForum R6.1 database
Refused	A700	Out of Resources	The ViewForum R6.1 database is full. ViewForum R6.1 shall send a notification, log the condition and abort association.
Error	A900	Data set does not match the SOP class	The SOP class of the image(s) does not match the negotiated abstract syntax. ViewForum R6.1 shall send a notification. Log the condition and abort the association.
	C000	Cannot understand	The image(s) cannot be parsed. ViewForum R6.1 shall send a notification, log the condition, and abort the association.
Warning	B000	Coercion of Data Elements	NA
	B006	Elements discarded	NA
	B007	Data set does not match SOP class	NA

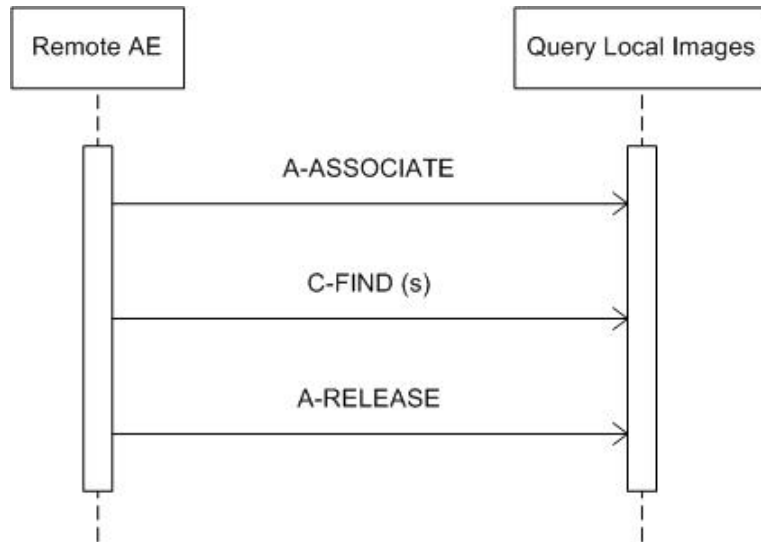
**Table 79: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The store job fails in case of association setup. The reason is logged.

Exception	Behavior
Reply Time-out	The store job fails and association is aborted The reason is logged
Association Time-out SCU	The association is released.
Association aborted	The store job fails. The reason is logged.

**4.2.1.4.2. (Real-World) Activity – FIND As SCP**

**4.2.1.4.2.1. Description and Sequencing of Activities**



**Figure 13: (Real World) Activity - FIND As SCP**

The ViewForum Network shall accept associations from systems that wish to query the ViewForum R6.1 database using the C-FIND command.

**4.2.1.4.2.2. Accepted Presentation Contexts**

**Table 80: Acceptable Presentation Contexts for (Real-World) Activity – FIND As SCP**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Study Root Query/Retrieve Information Model - FIND SOP Class	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

The ViewForum Network shall be able to accept the presentation contexts as specified in the above table.

The ViewForum Network shall accept all contexts in the intersection of the proposed and acceptable Presentation Contexts. This means that the ViewForum Network accepts multiple proposed Presentation Contexts with the same SOP class but different Transfer Syntaxes.

There is no check for duplicate contexts, and these will therefore be accepted.

No extended negotiations supported by the ViewForum Network

**4.2.1.4.2.3. SOP Specific Conformance for Patient Root Query/Retrieve Information Model - FIND SOP Class**

The ViewForum Network provides standard conformance to the Query/Retrieve service class. Relational queries are not supported. The ViewForum Network shall handle simultaneous C-FIND requests.

The ViewForum R6.1 database distinguishes two patients with the same Patient ID but different Patient's Name or Patient's Birth Date. However, the DICOM Query/Retrieve service class has Patient ID as a unique key at Patient level, and thus two patients with the same Patient ID cannot be distinguished via a standard DICOM Query.

When querying optional keys, the ViewForum R6.1 will respond successfully for available keys if queried for **universal matching**; otherwise it will respond with warning.

Note that when querying optional keys with **non-universal matching**, the ViewForum R6.1 will return information using universal matching for those keys

**4.2.1.4.2.3.1. Dataset Specific Conformance for ViewForum R 6.1 Patient Root Q/R CF SCP**

The following query keys will be supported by ViewForum R6.1.

**Table 81: Requested Query Keys for**

Attribute Name	Tag	VR	Type Of Matching	Comment
Query/Retrieve Level	0008,0052	CS		
<b>Q/R Image level</b>				
SOP Instance UID	0008,0018	UI		
Patient ID	0010,0020	LO		
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		
Instance Number	0020,0013	IS		
<b>Q/R Patient level</b>				
Patient ID	0010,0020	LO		
Patient's Name	0010,0010	PN		
<b>Q/R Series level</b>				
Patient ID	0010,0020	LO		
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		
Modality	0008,0060	CS		
Series Number	0020,0011	IS		
Specific Character Set	0008,0005	CS		

Attribute Name	Tag	VR	Type Of Matching	Comment
<b>Q/R Study level (Patient Root)</b>				
Patient ID	0010,0020	LO		
Study Instance UID	0020,000D	UI		
Study Date	0008,0020	DA		
Study Time	0008,0030	TM		
Accession Number	0008,0050	SH		
Study ID	0020,0010	SH		

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 82: C-FIND-RSP Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Matching is complete	The C-FIND request handling is completed, no more C-FIND responses are sent.
Refused	A700	Out of Resources	N/A
Failed	A900	Identifier does not match SOP class	N/A
	C000	Unable to process	The C-FIND request cannot be parsed. ViewForum R6.1 logs the reason.
Cancel	FE00	Matching terminated due to Cancel Request	The C-FIND request is canceled, no more C-FIND responses are sent.
Pending	FF00	Matches are continuing – Current match is supplied and any optional keys were supported in the same manner as required keys	The C-FIND responses are continuing.
	FF01	Matches are continuing – Warning that one or more optional keys were not supported for existence and/or matching for this identifier	The C-FIND responses are continuing.

**Table 83: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The query fails in case of association setup. The reason is logged.
Reply Time-out	The query fails and association is aborted. The reason is logged.
Association Time-out SCU	The association is released.
Association aborted	The query fails. The reason is logged.

**4.2.1.4.2.4. SOP Specific Conformance for Study Root Query/Retrieve Information Model - FIND SOP Class**

The ViewForum Network provides standard conformance to the Query/Retrieve service class. Relational queries are not supported. The ViewForum Network shall handle simultaneous C-FIND requests.

The ViewForum R6.1 database distinguishes two patients with the same Patient ID but different Patient's Name or Patient's Birth Date. However, the DICOM Query/Retrieve service class has Patient ID as a unique key at Patient level, and thus two patients with the same Patient ID cannot be distinguished via a standard DICOM Query.

When querying optional keys, the ViewForum R6.1 will respond successfully for available keys if queried for **universal matching**; otherwise it will respond with warning.

Note that when querying optional keys with **non-universal matching**, the ViewForum R6.1 will return information using universal matching for those keys

#### 4.2.1.4.2.4.1. Dataset Specific Conformance for ViewForum R 6.1 Study Root Q/R CF SCP

The following query keys will be supported by ViewForum R6.1.

**Table 84: Requested Query Keys for**

Attribute Name	Tag	VR	Type Of Matching	Comment
Query/Retrieve Level	0008,0052	CS		
<b>Q/R Image level</b>				
SOP Instance UID	0008,0018	UI		
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		
Instance Number	0020,0013	IS		
<b>Q/R Series level</b>				
Study Instance UID	0020,000D	UI		
Series Instance UID	0020,000E	UI		
Modality	0008,0060	CS		
Series Number	0020,0011	IS		
<b>Q/R Study level (Study Root)</b>				
Study Instance UID	0020,000D	UI		
Study Date	0008,0020	DA		
Study Time	0008,0030	TM		
Accession Number	0008,0050	SH		
Patient's Name	0010,0010	PN		
Patient ID	0010,0020	LO		
Study ID	0020,0010	SH		
Specific Character Set	0008,0005	CS		

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 85: C-FIND-RSP Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Matching is complete	The C-FIND request handling is completed, no more C-FIND responses are sent.
Refused	A700	Out of Resources	N/A
Failed	A900	Identifier does not match SOP class	N/A
	C000	Unable to process	The C-FIND request cannot be parsed. ViewForum R6.1 logs the reason.
Cancel	FE00	Matching terminated due to Cancel Request	The C-FIND request is canceled, no more C-FIND responses are sent.



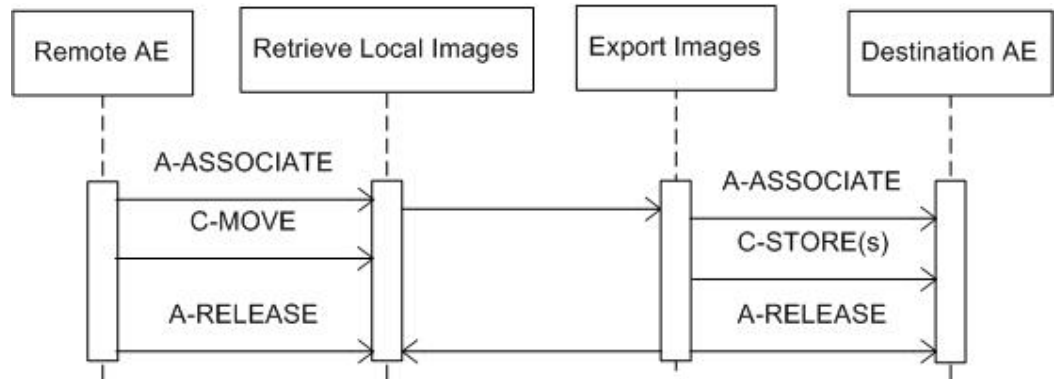
Service Status	Code	Further Meaning	Description
Pending	FF00	Matches are continuing – Current match is supplied and any optional keys were supported in the same manner as required keys	The C-FIND responses are continuing.
	FF01	Matches are continuing – Warning that one or more optional keys were not supported for existence and/or matching for this identifier	The C-FIND responses are continuing.

**Table 86: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The query fails in case of association setup. The reason is logged.
Reply Time-out	The query fails and association is aborted The reason is logged
Association Time-out SCU	The association is released.
Association aborted	The query fails. The reason is logged.

**4.2.1.4.3. (Real-World) Activity – MOVE As SCP**

**4.2.1.4.3.1. Description and Sequencing of Activities**



**Figure 14: (Real World) Activity - MOVE As SCP**

The ViewForum Network shall accept associations from systems that wish to retrieve images from the View Forum R6.1 database using the C-MOVE command.

After RWA Retrieve Local Images the RWA Export Images is started.

**4.2.1.4.3.2. Accepted Presentation Contexts**

**Table 87: Acceptable Presentation Contexts for (Real-World) Activity – MOVE As SCP**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Patient Root Query/Retrieve Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.1.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		
Study Root Query/Retrieve Information Model - MOVE SOP Class	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

The ViewForum Network shall be able to accept the presentation contexts as specified in the above table.

The ViewForum Network shall accept all contexts in the intersection of the proposed and acceptable Presentation Contexts. This means that the ViewForum Network accepts multiple proposed Presentation Contexts with the same SOP class but different Transfer Syntaxes.

There is no check for duplicate contexts, and these will therefore be accepted.

No extended negotiations supported by the ViewForum Network

#### 4.2.1.4.3.3. SOP Specific Conformance for Patient Root Query/Retrieve Information Model - MOVE SOP Class

The ViewForum R6.1 provides standard conformance to MOVE SOP class as an SCP.

##### 4.2.1.4.3.3.1. Dataset Specific Conformance for ViewForum R 6.1 Patient Root Q/R CM SCP

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 88: Identifiers for MOVE SCP**

Attribute Name	Tag	VR	Comment
<b>Patient Root Information Model</b>			
Query/Retrieve Level	0008,0052	CS	
<b>Q/R Image level</b>			
SOP Instance UID	0008,0018	UI	
<b>Q/R Patient level</b>			
Patient ID	0010,0020	LO	
<b>Q/R Series level</b>			
Series Instance UID	0020,000E	UI	
<b>Q/R Study level (Patient Root)</b>			
Study Instance UID	0020,000D	UI	

**Table 89: C-MOVE-RSP Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Sub-operations complete – No Failures	The C-MOVE command has been completed.

Service Status	Code	Further Meaning	Description
Refused	A701	Out of Resources – Unable to calculate number of matches	N/A
	A702	Out of Resources – Unable to perform Sub-operations	N/A
Failed	A801	Move Destination unknown	No C-STORE command will be sent. ViewForum R6.1 logs the reason.
	A900	Identifier does not match SOP class	N/A
Cancel	C000	Unable to process	The C-MOVE request cannot be parsed. No Store Command will be sent. ViewForum R6.1 logs the reason.
Warning	FE00	Sub-operations terminated due to Cancel Indication	The C-MOVE request is canceled, no more C-MOVE responses are sent.
Pending	B000	Sub-operations complete – One or more Failures	N/A

**Table 90: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The move job fails in case of association setup. The reason is logged.
Reply Time-out	The move job fails and association is aborted. The reason is logged.
Association Time-out SCU	The association is released.
Association aborted	The move job fails. The reason is logged.

#### 4.2.1.4.3.4. SOP Specific Conformance for Study Root Query/Retrieve Information Model - MOVE SOP Class

The ViewForum R6.1 provides standard conformance to FIND SOP class as an SCP.

##### 4.2.1.4.3.4.1. Dataset Specific Conformance for ViewForum R 6.1 Study Root Q/R CM SCP

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 91: Identifiers for MOVE SCP**

Attribute Name	Tag	VR	Comment
<b>Study Root Information Model</b>			
Query/Retrieve Level	0008,0052	CS	
<b>Q/R Image level</b>			
SOP Instance UID	0008,0018	UI	
<b>Q/R Series level</b>			
Series Instance UID	0020,000E	UI	
<b>Q/R Study level (Study Root)</b>			
Study Instance UID	0020,000D	UI	

**Table 92: C-MOVE-RSP Status Response**

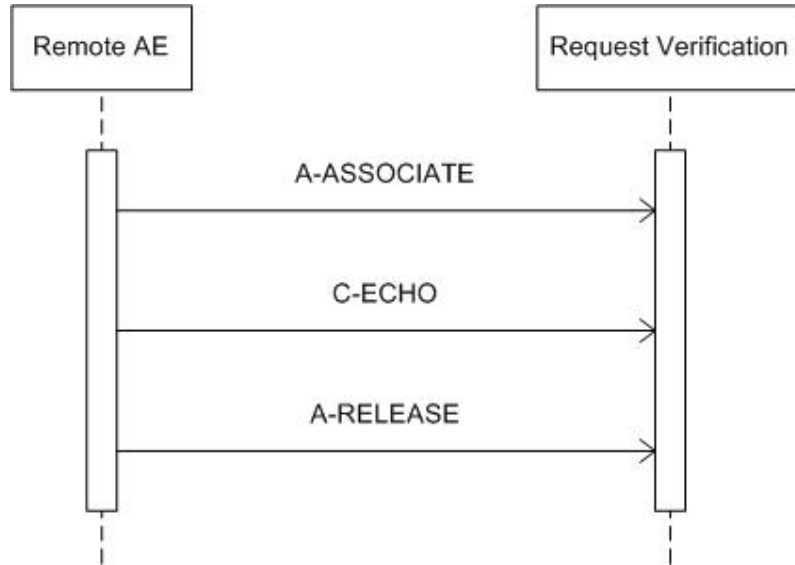
Service Status	Code	Further Meaning	Description
Success	0000	Sub-operations complete – No Failures	The C-MOVE command has been completed.
Refused	A701	Out of Resources – Unable to calculate number of matches	N/A
	A702	Out of Resources – Unable to perform Sub-operations	N/A
Failed	A801	Move Destination unknown	No C-STORE command will be sent. ViewForum R6.1 logs the reason.
	A900	Identifier does not match SOP class	N/A
Cancel	C000	Unable to process	The C-MOVE request cannot be parsed. No Store Command will be sent. ViewForum R6.1 logs the reason.
Warning	FE00	Sub-operations terminated due to Cancel Indication	The C-MOVE request is canceled, no more C-MOVE responses are sent.
Pending	B000	Sub-operations complete – One or more Failures	N/A

**Table 93: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The move job fails in case of association setup. The reason is logged.
Reply Time-out	The move job fails and association is aborted. The reason is logged.
Association Time-out SCU	The association is released.
Association aborted	The move job fails. The reason is logged.

**4.2.1.4.4. (Real-World) Activity – Verification as SCP**

**4.2.1.4.4.1. Description and Sequencing of Activities**



**Figure 15: (Real World) Activity - Verification as SCP**

The ViewForum Network shall accept associations from systems that wish to verify application level communication using the C-ECHO command.

**4.2.1.4.4.2. Accepted Presentation Contexts**

**Table 94: Acceptable Presentation Contexts for (Real-World) Activity – Verification as SCP**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification SOP Class	1.2.840.10008.1.1	Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Implicit VR Little Endian	1.2.840.10008.1.2		

The ViewForum Network shall be able to accept the presentation contexts as specified in the above table.

For performance reasons the ELE transfer syntax is preferred and shall be chosen in case multiple Transfer Syntaxes are proposed in the Association Negotiation.

The ViewForum Network shall accept all contexts in the intersection of the proposed and acceptable Presentation Contexts. This means that the View Forum Network accepts multiple proposed Presentation Contexts with the same SOP class but different Transfer Syntaxes.

There is no check for duplicate contexts, and these will therefore be accepted.

No extended negotiations supported by ViewForum Network

#### 4.2.1.4.4.3. SOP Specific Conformance for Verification SOP Class

The ViewForum R6.1 provides standard conformance to Verification SOP class as an SCP.

##### 4.2.1.4.4.3.1. Dataset Specific Conformance for Verification C-ECHO SCP

Following are the details regarding the specific conformance, including response behavior to all status codes, both from an application level and communication errors

**Table 95: C-ECHO-RSP Status Response**

Service Status	Code	Further Meaning	Description
Success	0000	Confirmation	Confirm the verification request

**Table 96: DICOM Command Communication Failure Behavior**

Exception	Behavior
ARTIM Time-out	The verification request fails. The reason is logged.
Reply Time-out	The verification request fails and association is aborted The reason is logged
Association Time-out SCU	The association is released.
Association aborted	The verification request fails. The reason is logged.

### 4.3. Network Interfaces

#### 4.3.1. Physical Network Interfaces

The ViewForum R6.1 system provides DICOM V3.0 TCP/IP Network Communication Support as defined by the part 8 of the DICOM Standard. ViewForum R6.1 system uses DICOM V3.0 TCP/IP Network Communication installed on the Platform where ViewForum Network DICOM Application Entity is running on.

Supported physical media include:  
 IEEE 802.3-1995 (Fast Ethernet) 100Base-TX  
 IEEE 802.3-1995 10Base-TX  
 IEEE 802.3 1000BASE-X (Fiber Optic Gigabit Ethernet)

#### 4.3.2. Additional Protocols

NA

### 4.4. Configuration

Any implementation's DICOM conformance may be dependent upon configuration, which takes place at the time of installation. Issues concerning configuration is addressed in this section.

#### 4.4.1. AE Title/Presentation Address Mapping

An important installation issue is the translation from AE title to presentation address. How this is to be performed shall be described in this section.

##### 4.4.1.1. Local AE Titles

The local AE title mapping and configuration are specified.

**Table 97: AE Title Configuration Table**

Application Entity	Default AE Title	Default TCP/IP Port
ViewForum Network		3010 *

\* Note: Not Configurable

##### 4.4.1.2. Remote AE Title/Presentation Address Mapping

Details about the configuring remote host names are provided here.

##### 4.4.1.2.1. Remote Association Initiators

All relevant remote applications able to setup a DICOM association towards ViewForum R6.1 must be configured at ViewForum R6.1 configuration time. The Customer Support Engineer must provide the following information for each remote application:

- The Application Entity Title.
- The SOP classes and transfer syntaxes for which ViewForum R6.1 accepts associations.

##### 4.4.1.2.2. Remote Association Acceptors

The following information must be provided for all relevant remote applications that are able to accept DICOM associations from ViewForum R6.1:

- The Application Entity Title.

- The host name/IP address on which the remote application resides.
- The port number at which the remote application accepts association requests.

#### 4.4.2. Parameters

The configuration parameters are given in Table below, categorized in the following sections:

- General Parameters of ViewForum Network.
- Local Configurable Parameters of the ViewForum Network.
- Remote Configurable Parameters of the ViewForum Network.
- General Print Parameters.
- Printer Specific Print Parameters.

**Table 98: Configuration Parameters table**

Parameter	Configurable	Default Value
<b>General Parameters of ViewForum Network</b>		
Time-out waiting for acceptance or rejection Response to an Association Open Request. (Application Level timeout)	No	-
General DIMSE level time-out values	No	-
Time-out waiting for response to TCP/IP connect request. (Low-level timeout)	No	-
Time-out waiting for acceptance of a TCP/IP message over the network. (Low-level timeout)	No	-
Time-out for waiting for data between TCP/IP packets. (Low-level timeout)	No	-
Any changes to default TCP/IP settings, such as configurable stack parameters.	No	-
<b>Local Configurable Parameters of the ViewForum Network</b>		
Size constraint in maximum object size (see note)	No	-
Maximum PDU size the AE can receive	Yes	0 (unlimited)
Maximum PDU size the AE can send	No	-
AE specific DIMSE level time-out values	No	-
Number of simultaneous associations by Service and/or SOP class	No	-
SOP class support	Yes	none
Transfer Syntax support <sup>1</sup>	Yes	ELE
<b>Remote Configurable Parameters of the ViewForum Network</b>		
Size constraint in maximum object size (see note)	No	-
Maximum PDU size the AE can receive	Yes	0 (unlimited)
Maximum PDU size the AE can send	No	-
AE specific DIMSE level time-out values	No	-
Number of simultaneous associations by Service and/or SOP class	No	-
SOP class support	Yes	none
Transfer Syntax support	Yes	ELE
Storage Commitment request must be sent after Storage request	Yes	not
Storage Commitment time-out (synchronous to asynchronous)	Yes	none
Automatic conversion of images of SOP classes not supported by remote systems into Secondary Capture Image Storage SOP instances	Yes	convert to SC
Export of pure DICOM images (i.e. only the standard DICOM attributes as defined in the related IOD) or extended DICOM images (with additional Standard DICOM, Private and Retired attributes)	Yes	allow all attributes
Support of overlays for DICOM node not supporting Presentation State objects <sup>2</sup>	Yes	enabled



Parameter	Configurable	Default Value
Support of overlays for DICOM node supporting Presentation State objects <sup>2</sup>	Yes	disabled
Support of overlays for CD <sup>2</sup>	Yes	disabled
General Print Parameters		
The DICOM printers that may be selected by the operator	Yes	none
Printer Specific Print Parameters <sup>3</sup>		
Medium type	Yes	all available
Film size ID (i.e. Media size)	Yes	all available
Resolution (300 / 600 dpi)	Yes	300
Color model (8 / 16 bits color)	Yes	8
Min Density	Yes	0
Max Density	Yes	0

*Note 1: The JPEG Baseline transfer syntax is only supported for RGB and YBR\_FULL\_422 images; therefore JPEG Baseline may NOT be configured for systems that are capable of handling storage of monochrome images too.*

*Note 2: The ViewForum R6.1 Copy-tool can override the configured setting of overlay support.*

*Note 3: These print parameters can be selected from choice lists. These choice lists are defined via so-called prototypes for each type of printer and print medium. These prototypes are also configurable.*

## 5. MEDIA INTERCHANGE

### 5.1. Implementation Model

The implementation model shall identify the DICOM Application Entities in a specific implementation and relate the Application Entities to Real-World Activities.

#### 5.1.1. Application Data Flow Diagram

The ViewForum R6.1 system consists of one single application entity only: the ViewForum R6.1 Application Entity (ViewForum Network).

The figure below shows the Media Interchange Application Data Flow as a functional overview of the ViewForum Network for CD-R and DVD.

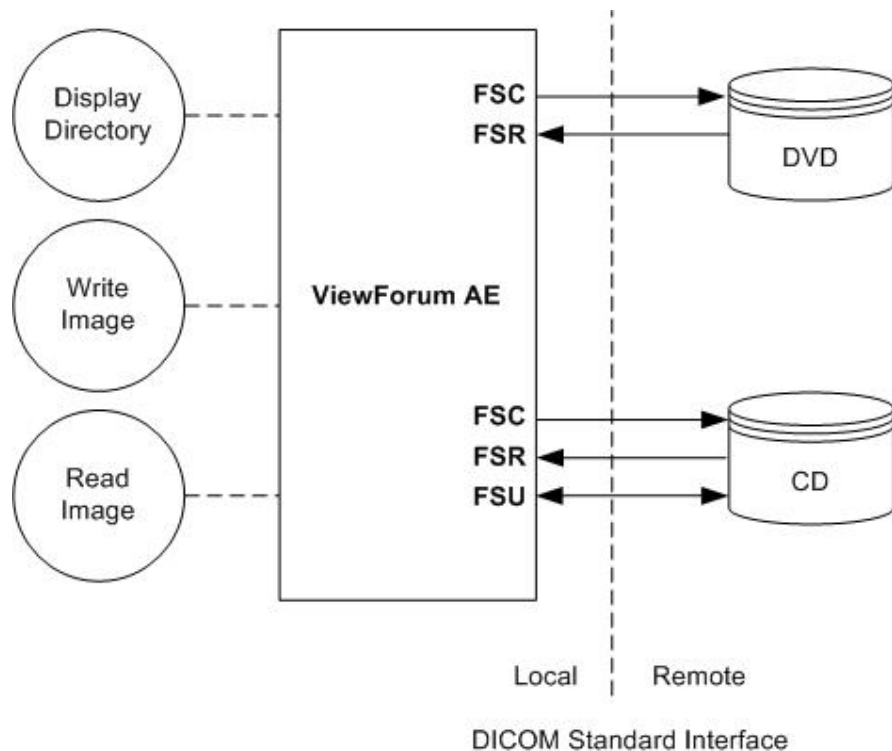


Figure 16: Media Interchange Application Data Flow Diagram

Table 99: Media Services table

Media Storage Application	Write Files (FSC / FSU)	Read Files (FSR)
General Purpose CD-R	YES / YES	YES
General Purpose DVD-JPEG	YES / NO	YES

The ViewForum Network will act as a FSR, for CD-R and DVD, when reading the directory of the medium. The ViewForum Network will act as a FSC / FSU for a CD-R and as FSC for DVD, when writing the selected images in a patient folder onto the medium.

ViewForum supports the media profiles as shows in the Table below:

**Table 100: Media Profiles supported by ViewForum**

Application Profile	CD	DVD+RW / DVD+R
General Purpose	STD-GEN-CD	STD-GEN-DVD

**Supported Photometric Interpretations**

The ViewForum system supports images with the following DICOM Photometric Interpretations as shows in the Table below:

**Table 101: Photometric interpretations supported by ViewForum**

Photometric Interpretation	Import	Export	Viewing
MONOCHROME1	YES	YES	YES
MONOCHROME2	YES	YES	YES
PALETTE COLOR	YES	YES	NO
RGB	YES	YES	YES
YBR_FULL	YES	YES	NO
YBR_FULL_422 (see note)	YES	YES	NO
YBR_PARTIAL_422	YES	YES	NO
YBR_RCT	YES	YES	NO
YBR_ICT	YES	YES	NO

*Note: if the photometric interpretation YBR\_FULL\_422 is used in combination with transfer syntax JPEG-lossy then the pixel data is converted to RGB on import.*

The system proposes the transfer syntaxes mentioned in Table below.

**Table 102: Transfer Syntaxes of DVD / CD supported by ViewForum**

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List (note)	UID List		
See Note	See Note	ILE ELE EBE	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None

*Note: any of the standard image storage and private SOP classes mentioned before. The preferred transfer syntax is ELE.*

ViewForum supports images with Lossy image compression via JPEG as described as shows in the Table below.

**Table 103: JPEG coding supported by ViewForum**

DICOM Transfer Syntax UID	JPEG coding process	JPEG description
1.2.840.10008.1.2.4.50	1	Lossy, Baseline (JPEG 8 Bit Image Compression)

*Note: Lossy Compression is only supported for images with photometric interpretation RGB and YBR\_FULL\_422 and therefore ViewForum supports this only for Ultrasound Images.*

### 5.1.2. Functional Definitions of AE's

This session contains a functional definition for each local Application Entity. It's describe in general terms the functions to be performed by the AE, and the DICOM services used to accomplish these functions.

The ViewForum Network is the one and only application entity within ViewForum R6.1. It includes the following service class.

#### Media Storage Service Class for CD and DVD

The ViewForum Network can perform the CD-R Media Storage service as SCU, with capabilities for:

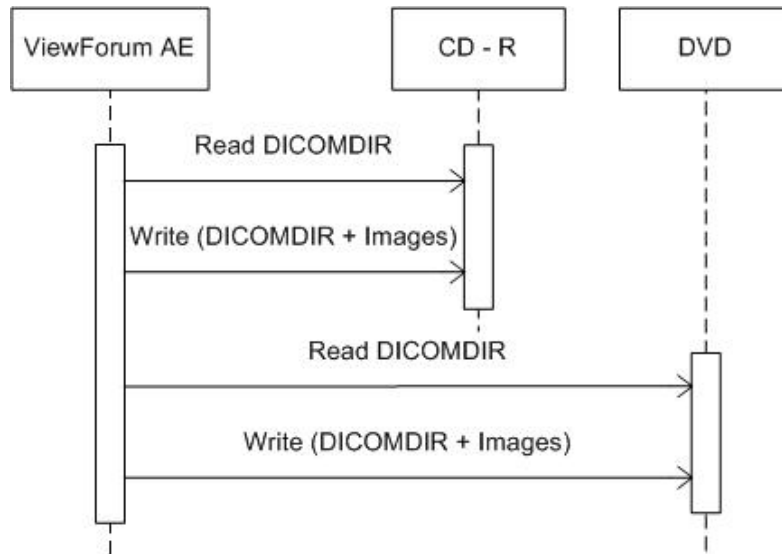
RWA Display Directory (as FSR),  
RWA Write Images (as FSC / FSU), and  
RWA Read Images (as FSR).

For DVD the ViewForum AE can perform the Media Storage service as SCU, with capabilities for:

RWA Display Directory (as FSR),  
RWA Write Images (as FSC), and  
RWA Read Images (as FSR).

### 5.1.3. Sequencing of Real World Activities

Whenever a CD or DVD has to be written the ViewForum Network first tries to read the DICOMDIR. The ViewForum Network will compile the updated DICOMDIR and any required DICOM images into a CD or DVD session image; this CD or DVD session image will be written to CD or DVD.



### 5.1.4. File Meta Information for Implementation Class and Version

This section shall be used to list the values assigned to the File Meta Information attributes (ref. [DICOM] PS 3.10) that pertain to the Implementation Class and Version.

The Implementation Class UID and the Implementation Version Name in the File Meta Header are as specified for networking.

**Table 104: DICOM Implementation Class and Version for ViewForum Network**

File Meta Information Version	00, 01
Implementation Class UID	1.3.46.670589.5.2.23
Implementation Version Name	ViewForum R4.3

## 5.2. AE Specifications

The next section in the DICOM Conformance Statement is a set of Application Entity specifications. There shall be one such specification for each Application Entity type.

### 5.2.1. ViewForum Network - Specification

The ViewForum Network provides Standard Conformance to the DICOM Media Storage Service and File Format ([DICOM] PS 3.10), the Media Storage Application Profiles STD-GEN-CD ([DICOM] PS 3.11) and the Media Storage Application Profiles STD-GEN-DVD-JPEG ([DICOM] PS 3.12) for Reading and Writing.

ViewForum supports multi-patient and multi-session CD-R / DVD disks, both for Reading and Writing.

Supported media by ViewForum are:

**for CD:** CD R / CD RW with the profile: STD-GEN-CD and

**for DVD:** DVD+R and DVD+RW with the profile: STD-GEN-DVD-JPEG and the Transfer Syntax ELE uncompressed.

DVD-R and DVD-RW can be read but are not supported for writing.

The supported Application Profiles, their Roles and the Service Class (SC) options, all defined in DICOM terminology, are listed in table below.

**Table 105: JPEG coding supported by ViewForum**

Supported Application Profile	Real-World Activity	Roles	SC Option
STD-GEN-CD	Display Directory	FSR	Interchange
	Write Images	FSC, FSU	Interchange
	Read Images	FSR	Interchange
STD-GEN-DVD-JPEG	Display Directory	FSR	Interchange
	Write Images	FSC	Interchange
	Read Images	FSR	Interchange

Only adding on instances is supported for the FSU, deleting is not supported

#### 5.2.1.1. File Meta Information for the ViewForum Network

This section shall contain the values of the file meta information that pertain to the Application Entity (see PS 3.10). These are:

- Source Application Entity Title
- Private Information Creator UID
- Private Information

### 5.2.1.2. Real-World Activities

The first sentence in this section shall state the roles and Media Storage Service Class options supported by the ViewForum Network.

#### 5.2.1.2.1. Display Directory

When a database open action is initiated on the CD-R or DVD then the ViewForum Network acts as an FSR using the interchange option to read the DICOMDIR of the CD-R or DVD medium.

This will result in an overview of the patients, studies, series and images on the ViewForum R6.1 screen.

##### 5.2.1.2.1.1. Media Storage Application Profile

The ViewForum Network supports the RWA Display Directory for the STD-GEN-CD and the STD-GEN-DVD-JPEG Application Profile.

##### 5.2.1.2.1.1.1. Options

The mandatory DICOMDIR keys are required for the correct display of directory information. The display is structured according the DICOM Composite Information Model: Patient, Study, Series and Image.

## 5.3. Augmented and Private Application Profiles

This section shall be used for the description of augmented and private Application Profiles.

### 5.3.1. Augmented Application Profiles

None

### 5.3.2. Private Application Profiles

None

## 5.4. Media Configuration

Any implementation's DICOM conformance may be dependent upon configuration that takes place at the time of installation. Issues concerning configuration shall be addressed in this section (e.g. the configuration of the source AE Title in file Meta information).

## 6. SUPPORT OF CHARACTER SETS

Any support for character sets beyond the default character repertoire in Network and Media services shall be described here.

**Table 106: Supported DICOM Character Sets of ViewForum**

Character Set Description	Defined Term	ESC Sequence	ISO Registration Number	Code Element	Character Set
Latin alphabet No. 1	ISO 2022 IR 100	ESC 02/08 04/02	ISO-IR 6	G0	ISO 646
		ESC 02/13 04/01	ISO-IR 100	G1	Supplementary set of ISO 8859
Japanese	ISO 2022 IR 87	-	ISO-IR 87	G0	JIS X 0208: Kanji
		-	-	-	-
Latin alphabet No. 1	ISO_IR 100	-	ISO-IR 6	G0	ISO 646
		-	ISO-IR 100	G1	Supplementary set of ISO 8859

## 7. SECURITY

### 7.1. Security Profiles

#### 7.1.1. Attribute Confidentiality Profiles

##### 7.1.1.1. The Basic Application Level Confidentiality Profile

No instances of the Encrypted Attributes Data Set are created. No Transfer Syntaxes are supported for encoding/decoding of Encrypted Attributes Data Sets.

The table below lists the protected attributes. The terms used to describe the replacement value can be read as below

Empty            The attribute will have a value of zero length.

**Table 107: Basic Application Level Confidentiality Profile Attributes**

Attribute Name	Tag	VR	Replacement Value
Patient's Name	0010,0010	PN	Empty
Patient's Birth Date	0010,0030	DA	Empty
Patient's Sex	0010,0040	CS	Empty
Patient's Age	0010,1010	AS	Empty
Patient ID	0010,0020	LO	Empty
Referring Physician's Name	0008,0090	PN	Empty
Performing Physician's Name	0008,1050	PN	Empty
Institution Name	0008,0080	LO	Empty
Study ID	0020, 0010	SH	Empty
Accession Number	0008,0050	SH	Empty

### 7.2. Association Level Security

Any calling AE title and/or IP address may open an association shall be specified here.

### 7.3. Application Level Security

The ViewForum R6.1 supports the HIPAA Audit trail profile.

The ViewForum can create audit messages according to the IHE Basic Security Integration Profile [IHE] to audit activities, to detect non-compliant behavior in the enterprise, and to facilitate detection of improper creation, access, modification and deletion of Protected Health Information (PHI).

These messages may contain information that identifies the patient



## 8. ANNEXES OF APPLICATION "VIEWFORUM NETWORK (APPLICATION)"

### 8.1. IOD Contents

#### 8.1.1. Created SOP Instance

This section specifies each IOD created (including private IOD's). It should specify the attribute name, tag, VR, and value. The value should specify the range and source (e.g. user input, Modality Worklist, automatically generated, etc.). For content items in templates, the range and source of the concept name and concept values should be specified. Whether the value is always present or not shall be specified.

Abbreviations used in the IOD tables for the column "Presence of Module" are:

ALWAYS           The module is always present  
 CONDITIONAL    The module is used under specified condition

Abbreviations used in the Module table for the column "Presence of Value" are:

ALWAYS           The attribute is always present with a value  
 EMPTY           The attribute is always present without any value (attribute sent zero length)  
 VNAP            The attribute is always present and its Value is Not Always Present (attribute sent zero length if no value is present)  
 ANAP            The attribute is present under specified condition – if present then it will always have a value  
 ANAPCV         The attribute is present under specified condition – if present then its Value is Not Always Present (attribute sent zero length if condition applies and no value is present)  
 ANAPEV         The attribute is present under specified condition – if present then it will not have any value

The abbreviations used in the Module table for the column "Source" are:

AUTO             The attribute value is generated automatically  
 CONFIG         The attribute value source is a configurable parameter  
 COPY            The attribute value source is another SOP instance  
 FIXED           The attribute value is hard-coded in the application  
 IMPLICIT        The attribute value source is a user-implicit setting  
 MPPS            The attribute value is the same as that use for Modality Performed Procedure Step  
 MWL             The attribute value source is a Modality Worklist  
 USER            The attribute value source is explicit user input

#### 8.1.1.1. List of created SOP Classes

**Table 108: List of created SOP Classes**

SOP Class Name	SOP Class UID
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1
3D Object new Storage (Private)	1.3.46.670589.5.0.2.1
3D Volume Storage new SOP Class (Private)	1.3.46.670589.5.0.1.1
Cardio Image Storage new SOP Class (Private)	1.3.46.670589.5.0.8.1

Computed Radiography Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.1
CT Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.2
CT Synthetic Image Storage (Private)	1.3.46.670589.5.0.9
CX Synthetic Image Storage (Private)	1.3.46.670589.5.0.12
Digital X-Ray Image Storage - For Pres. SOP	1.2.840.10008.5.1.4.1.1.1.1
MR Cardio Analysis new Storage (Private)	1.3.46.670589.5.0.11.1
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2
MR Synthetic Image Storage (Private)	1.3.46.670589.5.0.10
Perfusion (Private)	1.3.46.670589.5.0.13
Perfusion Image Storage (Private)	1.3.46.670589.5.0.14
Surface Storage new (Private)	1.3.46.670589.5.0.3.1
Ultrasound Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.6.1
Ultrasound Multi-frame Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.3.1
X-Ray Angiographic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.1
X-Ray Radiofluoroscopic Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.12.2
Raw Data Storage SOP Class	1.2.840.10008.5.1.4.1.1.66

### 8.1.1.2. MR Image Storage SOP Class

**Table 109: IOD of Created MR Image Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Study	Patient Study Module	
Series	General Series Module	ALWAYS
Frame of Reference	Frame of Reference Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	Image Plane Module	ALWAYS
Image	Contrast/Bolus Module	CONDITIONAL
Image	General Image Module	ALWAYS
Image	MR Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	SOP Common Module	ALWAYS
Image	Overlay Plane Module	CONDITIONAL
Image	VOI LUT Module	CONDITIONAL

**Table 110: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	IMPLICIT	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Issuer of Patient ID	0010,0021	LO		ANAP	AUTO	
Patient's Birth Time	0010,0032	TM		ANAP	AUTO	
Other Patient IDs	0010,1000	LO		ANAP	AUTO	
Other Patient Names	0010,1001	PN		ANAP	AUTO	
Ethnic Group	0010,2160	SH		ANAP	AUTO	
Patient Comments	0010,4000	LT		ANAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP		
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

Table 111: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	
Study Description	0008,1030	LO		ANAP	AUTO	
Physician(s) of Record	0008,1048	PN		ANAP	AUTO	
Name of Physician(s) Reading Study	0008,1060	PN		ANAP	AUTO	
Referenced Study Sequence	0008,1110	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	
Procedure Code Sequence	0008,1032	SQ		ANAP	AUTO	
>Code Value	0008,0100	SH		ALWAYS	AUTO	
>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>Code Meaning	0008,0104	LO		ALWAYS	AUTO	
>Coding Scheme Version	0008,0103	SH		ANAPEV	AUTO	
>Mapping Resource	0008,0105	CS		ANAPEV	AUTO	
>Context Group Version	0008,0106	DT		ANAPEV	AUTO	
>Context Group Local Version	0008,0107	DT		ANAPEV	AUTO	
>Context Group Extension Creator UID	0008,010D	UI		ANAPEV	AUTO	
>Context Group Extension Flag	0008,010B	CS		ANAP	AUTO	
>Context Identifier	0008,010F	CS		ANAP	AUTO	

Table 112: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAP	AUTO	
Patient's Age	0010,1010	AS		ANAP	AUTO	
Patient's Size	0010,1020	DS		ANAP	AUTO	
Patient's Weight	0010,1030	DS		ANAP	AUTO	
Occupation	0010,2180	SH		ANAP	AUTO	
Additional Patient History	0010,21B0	LT		ANAP	AUTO	

Table 113: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	
Patient Position	0018,5100	CS		VNAP	AUTO	
Laterality	0020,0060	CS		VNAP	AUTO	
Series Date	0008,0021	DA		ANAP	AUTO	
Series Time	0008,0031	TM		ANAP	AUTO	
Series Description	0008,103E	LO		ANAP	AUTO	
Performing Physician's Name	0008,1050	PN		ANAP	AUTO	
Operators' Name	0008,1070	PN		ANAP	AUTO	
Body Part Examined	0018,0015	CS		ANAP	AUTO	
Protocol Name	0018,1030	LO		ANAP	AUTO	
Smallest Pixel Value in Series	0028,0108	US /SS		ANAP	AUTO	
Largest Pixel Value in Series	0028,0109	US /SS		ANAP	AUTO	

Performed Procedure Step Start Date	0040,0244	DA		ANAP	AUTO	
Performed Procedure Step Start Time	0040,0245	TM		ANAP	AUTO	
Performed Procedure Step ID	0040,0253	SH		ANAP	AUTO	
Performed Procedure Step Description	0040,0254	LO		ANAP	AUTO	
Comments on the Performed Procedure Step	0040,0280	ST		ANAP	AUTO	
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	
Performed Protocol Code Sequence	0040,0260	SQ		ANAP	AUTO	
>Code Value	0008,0100	SH		ALWAYS	AUTO	
>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>Code Meaning	0008,0104	LO		ALWAYS	AUTO	
>Coding Scheme Version	0008,0103	SH		ANAP	AUTO	
>Mapping Resource	0008,0105	CS		ANAP	AUTO	
>Context Group Version	0008,0106	DT		ANAP	AUTO	
>Context Group Local Version	0008,0107	DT		ANAP	AUTO	
>Context Group Extension Creator UID	0008,010D	UI		ANAP	AUTO	
>Context Group Extension Flag	0008,010B	CS		ANAP	AUTO	
>Context Identifier	0008,010F	CS		ANAP	AUTO	

Table 114: Frame of Reference Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame of Reference UID	0020,0052	UI		ALWAYS	AUTO	
Position Reference Indicator	0020,1040	LO		VNAP	AUTO	

Table 115: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	
Institution Name	0008,0080	LO		ANAP	AUTO	
Institution Address	0008,0081	ST		ANAP	AUTO	
Station Name	0008,1010	SH		ANAP	AUTO	
Institutional Department Name	0008,1040	LO		ANAP	AUTO	
Manufacturer's Model Name	0008,1090	LO		ANAP	AUTO	
Device Serial Number	0018,1000	LO		ANAP	AUTO	
Software Version(s)	0018,1020	LO		ANAP	AUTO	
Spatial Resolution	0018,1050	DS		ANAP	AUTO	
Date of Last Calibration	0018,1200	DA		ANAP	AUTO	
Time of Last Calibration	0018,1201	TM		ANAP	AUTO	
Pixel Padding Value	0028,0120	US/SS		ANAP	AUTO	

Table 116: Image Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Position (Patient)	0020,0032	DS		ALWAYS	AUTO	
Image Orientation (Patient)	0020,0037	DS		ALWAYS	AUTO	
Pixel Spacing	0028,0030	DS		ALWAYS	AUTO	
Slice Thickness	0018,0050	DS		VNAP	AUTO	
Slice Location	0020,1041	DS		ANAP	AUTO	

Table 117: Contrast/Bolus Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Contrast/Bolus Agent	0018,0010	LO		VNAP	AUTO	
Contrast/Bolus Route	0018,1040	LO		ANAP	AUTO	
Contrast/Bolus Volume	0018,1041	DS		ANAP	AUTO	
Contrast/Bolus Start Time	0018,1042	TM		ANAP	AUTO	
Contrast/Bolus Stop Time	0018,1043	TM		ANAP	AUTO	
Contrast/Bolus Total Dose	0018,1044	DS		ANAP	AUTO	
Contrast Flow Rate	0018,1046	DS		ANAP	AUTO	
Contrast Flow Duration	0018,1047	DS		ANAP	AUTO	
Contrast/Bolus Ingredient	0018,1048	CS		ANAP	AUTO	
Contrast/Bolus Ingredient Concentration	0018,1049	DS		ANAP	AUTO	

Table 118: General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	
Content Date	0008,0023	DA		VNAP	AUTO	
Content Time	0008,0033	TM		VNAP	AUTO	
Patient Orientation	0020,0020	CS		VNAP	AUTO	
Acquisition Date	0008,0022	DA		ANAP	AUTO	
Acquisition Datetime	0008,002A	DT		ANAP	AUTO	
Acquisition Time	0008,0032	TM		ANAP	AUTO	
Derivation Description	0008,2111	ST		ANAP	AUTO	
Acquisition Number	0020,0012	IS		ANAP	AUTO	
Images in Acquisition	0020,1002	IS		ANAP	AUTO	
Image Comments	0020,4000	LT		ANAP	AUTO	
Quality Control Image	0028,0300	CS		ANAP	AUTO	
Burned In Annotation	0028,0301	CS		ANAP	AUTO	
Lossy Image Compression	0028,2110	CS		ANAP	AUTO	
Lossy Image Compression Ratio	0028,2112	DS		ANAP	AUTO	
Presentation LUT Shape	2050,0020	CS		ANAP	AUTO	
Referenced Image Sequence	0008,1140	SQ		ANAP	AUTO	

Table 119: MR Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	
Scanning Sequence	0018,0020	CS		ALWAYS	AUTO	
Sequence Variant	0018,0021	CS		ALWAYS	AUTO	
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS		ALWAYS	AUTO	
Bits Allocated	0028,0100	US		ALWAYS	AUTO	
Scan Options	0018,0022	CS		VNAP	AUTO	
MR Acquisition Type	0018,0023	CS		VNAP	AUTO	
Echo Time	0018,0081	DS		VNAP	AUTO	
Echo Train Length	0018,0091	IS		VNAP	AUTO	
Repetition Time	0018,0080	DS		VNAP	AUTO	
Inversion Time	0018,0082	DS		VNAP	AUTO	
Trigger Time	0018,1060	DS		VNAP	AUTO	
Sequence Name	0018,0024	SH		ANAP	AUTO	
Angio Flag	0018,0025	CS		ANAP	AUTO	
Number of Averages	0018,0083	DS		ANAP	AUTO	
Imaging Frequency	0018,0084	DS		ANAP	AUTO	
Imaged Nucleus	0018,0085	SH		ANAP	AUTO	
Echo Number(s)	0018,0086	IS		ANAP	AUTO	

Magnetic Field Strength	0018,0087	DS		ANAP	AUTO	
Spacing Between Slices	0018,0088	DS		ANAP	AUTO	
Number of Phase Encoding Steps	0018,0089	IS		ANAP	AUTO	
Percent Sampling	0018,0093	DS		ANAP	AUTO	
Percent Phase Field of View	0018,0094	DS		ANAP	AUTO	
Pixel Bandwidth	0018,0095	DS		ANAP	AUTO	
Nominal Interval	0018,1062	IS		ANAP	AUTO	
Beat Rejection Flag	0018,1080	CS		ANAP	AUTO	
Low R-R Value	0018,1081	IS		ANAP	AUTO	
High R-R Value	0018,1082	IS		ANAP	AUTO	
Intervals Acquired	0018,1083	IS		ANAP	AUTO	
Intervals Rejected	0018,1084	IS		ANAP	AUTO	
PVC Rejection	0018,1085	LO		ANAP	AUTO	
Skip Beats	0018,1086	IS		ANAP	AUTO	
Heart Rate	0018,1088	IS		ANAP	AUTO	
Cardiac Number of Images	0018,1090	IS		ANAP	AUTO	
Trigger Window	0018,1094	IS		ANAP	AUTO	
Reconstruction Diameter	0018,1100	DS		ANAP	AUTO	
Receiving Coil Name	0018,1250	SH		ANAP	AUTO	
Transmitting Coil Name	0018,1251	SH		ANAP	AUTO	
Acquisition Matrix	0018,1310	US		ANAP	AUTO	
In-plane Phase Encoding Direction	0018,1312	CS		ANAP	AUTO	
Flip Angle	0018,1314	DS		ANAP	AUTO	
Variable Flip Angle Flag	0018,1315	CS		ANAP	AUTO	
SAR	0018,1316	DS		ANAP	AUTO	
dB/dt	0018,1318	DS		ANAP	AUTO	
Temporal Position Identifier	0020,0100	IS		ANAP	AUTO	
Number of Temporal Positions	0020,0105	IS		ANAP	AUTO	
Temporal Resolution	0020,0110	DS		ANAP	AUTO	

Table 120: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
High Bit	0028,0102	US		ANAP	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ANAP	AUTO	
Planar Configuration	0028,0006	US		ANAP	AUTO	
Pixel Aspect Ratio	0028,0034	IS		ANAP	AUTO	
Red Palette Color Lookup Table Descriptor	0028,1101	US /SS		ANAP	AUTO	
Green Palette Color Lookup Table Descriptor	0028,1102	US /SS		ANAP	AUTO	
Blue Palette Color Lookup Table Descriptor	0028,1103	US /SS		ANAP	AUTO	
Red Palette Color Lookup Table Data	0028,1201	O W		ANAP	AUTO	
Green Palette Color Lookup Table Data	0028,1202	O W		ANAP	AUTO	
Blue Palette Color Lookup Table Data	0028,1203	O W		ANAP	AUTO	
Smallest Image Pixel Value	0028,0106	US /SS		ANAP	AUTO	
Largest Image Pixel Value	0028,0107	US /SS		ANAP	AUTO	

**Table 121: SOP Common Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAPEV	AUTO	
SOP Class UID	0008,0016	UI		ANAPEV	AUTO	
SOP Instance UID	0008,0018	UI		ANAPEV	AUTO	
Instance Creation Date	0008,0012	DA		ANAP	AUTO	
Instance Creation Time	0008,0013	TM		ANAP	AUTO	
Instance Creator UID	0008,0014	UI		ANAP	AUTO	
Timezone Offset From UTC	0008,0201	SH		ANAP	AUTO	
SOP Instance Status	0100,0410	CS		ANAP	AUTO	
SOP Authorization Date and Time	0100,0420	DT		ANAP	AUTO	
SOP Authorization Comment	0100,0424	LT		ANAP	AUTO	
Authorization Equipment Certification Number	0100,0426	LO		ANAP	AUTO	

**Table 122: Overlay Plane Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	6000,0010	US		ALWAYS	AUTO	
Overlay Columns	6000,0011	US		ALWAYS	AUTO	
Overlay Type	6000,0040	CS		ALWAYS	AUTO	
Overlay Origin	6000,0050	SS		ALWAYS	AUTO	
Overlay Bits Allocated	6000,0100	US		ALWAYS	AUTO	
Overlay Bit Position	6000,0102	US		ALWAYS	AUTO	
Overlay Data	6000,3000	O W/ OB		ANAPEV	AUTO	
Overlay Description	6000,0022	LO		ANAP	AUTO	
Overlay Subtype	6000,0045	LO		ANAP	AUTO	
ROI Area	6000,1301	IS		ANAP	AUTO	
ROI Mean	6000,1302	DS		ANAP	AUTO	
ROI Standard Deviation	6000,1303	DS		ANAP	AUTO	
Overlay Label	6000,1500	LO		ANAP	AUTO	

**Table 123: VOI LUT Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Window Width	0028,1051	DS		ALWAYS	AUTO	
Window Center	0028,1050	DS		ALWAYS	AUTO	
Window Center & Width Explanation	0028,1055	LO		ANAP	AUTO	

**8.1.1.3. Secondary Capture Image Storage SOP Class****Table 124: IOD of Created Secondary Capture Image Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Study	Patient Study Module	CONDITIONAL
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	CONDITIONAL
Equipment	SC Equipment Module	
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS

Image	SC Image Module	ALWAYS
Image	SOP Common Module	ALWAYS
Image	Overlay Plane Module	CONDITIONAL
Image	Modality LUT Module	CONDITIONAL
Image	VOI LUT Module	CONDITIONAL
	Sc Image Equipment Module	ALWAYS

Table 125: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Patient's Birth Time	0010,0032	TM		VNAP	AUTO	
Other Patient IDs	0010,1000	LO		ANAP	AUTO	
Other Patient Names	0010,1001	PN		ANAP	AUTO	
Ethnic Group	0010,2160	SH		ANAP	AUTO	
Patient Comments	0010,4000	LT		ANAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI	1.2.840.10008.3.1.2.1.1	ANAP	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAP	AUTO	

Table 126: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		ANAP	AUTO	
Study Description	0008,1030	LO		ANAP	AUTO	
Physician(s) of Record	0008,1048	PN		ANAP	AUTO	
Name of Physician(s) Reading Study	0008,1060	PN		ANAP	AUTO	
Referenced Study Sequence	0008,1110	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAP	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAP	AUTO	
Procedure Code Sequence	0008,1032	SQ		ANAP	AUTO	
>Code Value	0008,0100	SH		ANAP	AUTO	
>Coding Scheme Designator	0008,0102	SH		ANAP	AUTO	
>Code Meaning	0008,0104	LO		ANAP	AUTO	
>Coding Scheme Version	0008,0103	SH		ANAP	AUTO	
>Mapping Resource	0008,0105	CS		ANAP	AUTO	
>Context Group Version	0008,0106	DT		ANAP	AUTO	
>Context Group Local Version	0008,0107	DT		ANAP	AUTO	
>Context Group Extension Creator UID	0008,010D	UI		ANAP	AUTO	
>Context Group Extension Flag	0008,010B	CS	N, Y	ANAP	AUTO	
>Context Identifier	0008,010F	CS		ANAP	AUTO	

Table 127: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAP	AUTO	
Patient's Age	0010,1010	AS		ANAP	AUTO	
Patient's Size	0010,1020	DS		ANAP	AUTO	
Patient's Weight	0010,1030	DS		ANAP	AUTO	



Occupation	0010,2180	SH		ANAP	AUTO	
Additional Patient History	0010,21B0	LT		ANAP	AUTO	
Admitting Diagnosis Code Sequence	0008,1084	SQ		ANAP	AUTO	
>Code Value	0008,0100	SH		ANAP	AUTO	
>Coding Scheme Designator	0008,0102	SH		ANAP	AUTO	
>Code Meaning	0008,0104	LO		ANAP	AUTO	
>Coding Scheme Version	0008,0103	SH		ANAP	AUTO	
>Mapping Resource	0008,0105	CS		ANAP	AUTO	
>Context Group Version	0008,0106	DT		ANAP	AUTO	
>Context Group Local Version	0008,0107	DT		ANAP	AUTO	
>Context Group Extension Creator UID	0008,010D	UI		ANAP	AUTO	
>Context Group Extension Flag	0008,010B	CS	N, Y	ANAP	AUTO	
>Context Identifier	0008,010F	CS		ANAP	AUTO	

Table 128: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Instance UID	0020,000E	UI		ALWAYS	CONFIG	
Series Number	0020,0011	IS		VNAP	AUTO	
Patient Position	0018,5100	CS		ANAP	AUTO	
Laterality	0020,0060	CS		ANAP	AUTO	
Series Date	0008,0021	DA		ANAP	AUTO	
Series Time	0008,0031	TM		ANAP	AUTO	
Series Description	0008,103E	LO		ANAP	AUTO	
Performing Physician's Name	0008,1050	PN		ANAP	AUTO	
Operators' Name	0008,1070	PN		ANAP	AUTO	
Body Part Examined	0018,0015	CS		ANAP	AUTO	
Protocol Name	0018,1030	LO		ANAP	AUTO	
Smallest Pixel Value in Series	0028,0108	US/SS		ANAP	AUTO	
Largest Pixel Value in Series	0028,0109	US/SS		ANAP	AUTO	
Performed Procedure Step Start Date	0040,0244	DA		ANAP	AUTO	
Performed Procedure Step Start Time	0040,0245	TM		ANAP	AUTO	
Performed Procedure Step ID	0040,0253	SH		ANAP	AUTO	
Performed Procedure Step Description	0040,0254	LO		ANAP	AUTO	
Comments on the Performed Procedure Step	0040,0280	ST		ANAP	AUTO	
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAP	AUTO	
Performed Protocol Code Sequence	0040,0260	SQ		ANAP	AUTO	
Request Attributes Sequence	0040,0275	SQ		ANAP	AUTO	

Table 129: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	
Institution Name	0008,0080	LO		ANAP	AUTO	
Institution Address	0008,0081	ST		ANAP	AUTO	
Station Name	0008,1010	SH		ANAP	AUTO	
Institutional Department Name	0008,1040	LO		ANAP	AUTO	
Manufacturer's Model Name	0008,1090	LO		ANAP	AUTO	
Device Serial Number	0018,1000	LO		ANAP	AUTO	
Software Version(s)	0018,1020	LO		ANAP	AUTO	

Spatial Resolution	0018,1050	DS		ANAP	AUTO	
Date of Last Calibration	0018,1200	DA		ANAP	AUTO	
Time of Last Calibration	0018,1201	TM		ANAP	AUTO	
Pixel Padding Value	0028,0120	US /SS		ANAP	AUTO	

**Table 130: SC Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Conversion Type	0008,0064	CS		ALWAYS		
Modality	0008,0060	CS		ANAP		

**Table 131: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	
Content Date	0008,0023	DA		ANAP	AUTO	
Content Time	0008,0033	TM		ANAP	AUTO	
Patient Orientation	0020,0020	CS		ALWAYS	AUTO	
Image Type	0008,0008	CS		ANAP	AUTO	
Acquisition Date	0008,0022	DA		ANAP	AUTO	
Acquisition Datetime	0008,002A	DT		ANAP	AUTO	
Acquisition Time	0008,0032	TM		ANAP	AUTO	
Derivation Description	0008,2111	ST		ANAP	AUTO	
Acquisition Number	0020,0012	IS		ANAP	AUTO	
Images in Acquisition	0020,1002	IS		ANAP	AUTO	
Image Comments	0020,4000	LT		ANAP	AUTO	
Quality Control Image	0028,0300	CS		ANAP	AUTO	
Burned In Annotation	0028,0301	CS		ANAP	AUTO	
Lossy Image Compression	0028,2110	CS		ANAP	AUTO	
Lossy Image Compression Ratio	0028,2112	DS		ANAP	AUTO	
Presentation LUT Shape	2050,0020	CS		ANAP	AUTO	
Source Image Sequence	0008,2112	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAP	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAP	AUTO	
>Referenced Frame Number	0008,1160	IS		ANAP	AUTO	
>Purpose of Reference Code Sequence	0040,A170	SQ		ANAP	AUTO	
>>Code Value	0008,0100	SH		ANAP	AUTO	
Derivation Code Sequence	0008,9215	SQ		ANAP	AUTO	
>Code Value	0008,0100	SH		ANAP	AUTO	
Icon Image Sequence	0088,0200	SQ		ANAP	AUTO	
>Samples per Pixel	0028,0002	US		ANAP	AUTO	
>Photometric Interpretation	0028,0004	CS		ANAP	AUTO	
>Rows	0028,0010	US		ANAP	AUTO	
>Columns	0028,0011	US		ANAP	AUTO	
>Bits Allocated	0028,0100	US		ANAP	AUTO	
>Bits Stored	0028,0101	US		ANAP	AUTO	
>High Bit	0028,0102	US		ANAP	AUTO	
>Pixel Representation	0028,0103	US		ANAP	AUTO	
>Pixel Data	7FE0,0010	O W/ OB		ANAP	AUTO	
>Red Palette Color Lookup Table Data	0028,1201	O W		ANAP	AUTO	
Referenced Image Sequence	0008,1140	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAP	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAP	AUTO	
>Referenced Frame Number	0008,1160	IS		ANAP	AUTO	

>Purpose of Reference Code Sequence	0040,A170	SQ		ANAP	AUTO	
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Table 132: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS		ALWAYS	AUTO	
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Bits Allocated	0028,0100	US		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
High Bit	0028,0102	US		ALWAYS	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	
Planar Configuration	0028,0006	US		ANAP	AUTO	
Pixel Aspect Ratio	0028,0034	IS		ALWAYS	AUTO	
Red Palette Color Lookup Table Descriptor	0028,1101	US /SS		ANAP	AUTO	
Green Palette Color Lookup Table Descriptor	0028,1102	US /SS		ANAP	AUTO	
Blue Palette Color Lookup Table Descriptor	0028,1103	US /SS		ANAP	AUTO	
Red Palette Color Lookup Table Data	0028,1201	O W		ANAP	AUTO	
Green Palette Color Lookup Table Data	0028,1202	O W		ANAP	AUTO	
Blue Palette Color Lookup Table Data	0028,1203	O W		ANAP	AUTO	
Smallest Image Pixel Value	0028,0106	US /SS		ANAP	AUTO	
Largest Image Pixel Value	0028,0107	US /SS		ANAP	AUTO	

Table 133: SC Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Date of Secondary Capture	0018,1012	DA		ALWAYS		
Time of Secondary Capture	0018,1014	TM		ALWAYS		

Table 134: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
SOP Class UID	0008,0016	UI		ALWAYS	AUTO	
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	

Table 135: Overlay Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	6000,0010	US		ALWAYS	AUTO	
Overlay Columns	6000,0011	US		ALWAYS	AUTO	
Overlay Type	6000,0040	CS		ALWAYS	AUTO	
Overlay Origin	6000,0050	SS		ALWAYS	AUTO	
Overlay Bits Allocated	6000,0100	US		ALWAYS	AUTO	
Overlay Bit Position	6000,0102	US		ALWAYS	AUTO	
Overlay Data	6000,3000	O W/ OB		ANAP	AUTO	

Overlay Description	6000,0022	LO		ANAP	AUTO	
Overlay Subtype	6000,0045	LO		ANAP	AUTO	
ROI Area	6000,1301	IS		ANAP	AUTO	
ROI Mean	6000,1302	DS		ANAP	AUTO	
ROI Standard Deviation	6000,1303	DS		ANAP	AUTO	
Overlay Label	6000,1500	LO		ANAP	AUTO	

**Table 136: Modality LUT Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rescale Intercept	0028,1052	DS		ANAP	AUTO	
Rescale Slope	0028,1053	DS		ANAP	AUTO	
Rescale Type	0028,1054	LO		ANAP	AUTO	
Modality LUT Sequence	0028,3000	SQ		ANAP	AUTO	
>LUT Descriptor	0028,3002	US /SS		ANAP	AUTO	
>Modality LUT Type	0028,3004	LO	HU, OD, US	ANAP	AUTO	
>LUT Data	0028,3006	US /SS		ANAP	AUTO	
>LUT Explanation	0028,3003	LO		ANAP	AUTO	

**Table 137: VOI LUT Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Window Width	0028,1051	DS		ANAP	AUTO	
Window Center	0028,1050	DS		ANAP	AUTO	
Window Center & Width Explanation	0028,1055	LO		ANAP	AUTO	
VOI LUT Sequence	0028,3010	SQ		ANAP	AUTO	

**Table 138: Sc Image Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Conversion Type	0008,0064	CS		ALWAYS	AUTO	
Secondary Capture Device ID	0018,1010	LO		ANAPCV	AUTO	
Secondary Capture Device Manufacturer	0018,1016	LO		ANAPCV	AUTO	
Secondary Capture Device Manufacturer's Model Name	0018,1018	LO		ANAPCV	AUTO	
Secondary Capture Device Software Version(s)	0018,1019	LO		ANAPCV	AUTO	
Video Image Format Acquired	0018,1022	SH		ANAPCV	AUTO	
Digital Image Format Acquired	0018,1023	LO		ANAPCV	AUTO	

**8.1.1.4. Grayscale Softcopy Presentation State Storage SOP Class****Table 139: IOD of Created Grayscale Softcopy Presentation State Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Curve	Displayed Area Module	ALWAYS
Curve	Presentation Series Module	ALWAYS
Presentation State	Softcopy Presentation LUT Module	ALWAYS
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	SOP Common Module	ALWAYS

Presentation State Module

ALWAYS

**Table 140: Displayed Area Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Displayed Area Selection Sequence	0070,005A	SQ		ALWAYS	AUTO	
>Displayed Area Top Left Hand Corner	0070,0052	SL		ALWAYS	AUTO	
>Displayed Area Bottom Right Hand Corner	0070,0053	SL		ALWAYS	AUTO	
>Presentation Size Mode	0070,0100	CS	SCALE TO FIT	ALWAYS	AUTO	
>Presentation Pixel Spacing	0070,0101	DS		ANAPEV	AUTO	
>Presentation Pixel Aspect Ratio	0070,0102	IS		ANAPEV	AUTO	
>Presentation Pixel Magnification Ratio	0070,0103	FL		ANAPEV	AUTO	

**Table 141: Presentation Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	

**Table 142: Softcopy Presentation LUT Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Presentation LUT Sequence	2050,0010	SQ		ALWAYS	AUTO	
>LUT Descriptor	0028,3002	US /SS		ALWAYS	AUTO	
>LUT Data	0028,3006	US /SS		ALWAYS	AUTO	

**Table 143: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		ALWAYS	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	

**Table 144: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 145: General Series Module**

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

**Table 146: General Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	
Manufacturer's Model Name	0008,1090	LO		VNAP	AUTO	
Software Version(s)	0018,1020	LO		ALWAYS	AUTO	

**Table 147: SOP Common Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
SOP Class UID	0008,0016	UI		ALWAYS	AUTO	
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	

**Table 148: Presentation State Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS	1	ALWAYS	AUTO	
Content Label	0070,0080	CS		ALWAYS	AUTO	
Presentation Creation Date	0070,0082	DA		ALWAYS	AUTO	
Presentation Creation Time	0070,0083	TM		ALWAYS	AUTO	
Recommended Viewing Mode	0028,1090	CS		ANAPEV	AUTO	
Content Description	0070,0081	LO		VNAP	AUTO	
Content Creator's Name	0070,0084	PN		VNAP	AUTO	
Referenced Series Sequence	0008,1115	SQ		ALWAYS	AUTO	

**8.1.1.5. Computed Radiography Image Storage SOP Class****Table 149: IOD of Created Computed Radiography Image Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Series	CR Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Contrast/Bolus Module	CONDITIONAL
Image	CR Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	SOP Common Module	ALWAYS

**Table 150: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

**Table 151: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	

Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 152: General Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	
Patient Position	0018,5100	CS		VNAP	AUTO	

**Table 153: CR Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Body Part Examined	0018,0015	CS		VNAP	AUTO	
View Position	0018,5101	CS		VNAP	AUTO	

**Table 154: General Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

**Table 155: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 156: Contrast/Bolus Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Contrast/Bolus Agent	0018,0010	LO		VNAP	AUTO	

**Table 157: CR Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Photometric Interpretation	0028,0004	CS		ALWAYS	AUTO	

**Table 158: Image Pixel Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Bits Allocated	0028,0100	US		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
High Bit	0028,0102	US		ALWAYS	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	

**Table 159: SOP Common Module**

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

**8.1.1.6. CT Image Storage SOP Class****Table 160: IOD of Created CT Image Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Frame of Reference	Frame of Reference Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	Image Plane Module	ALWAYS
Image	Contrast/Bolus Module	CONDITIONAL
Image	CT Image Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	SOP Common Module	ALWAYS

**Table 161: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAP	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAP	AUTO	

**Table 162: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 163: General Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

**Table 164: Frame of Reference Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame of Reference UID	0020,0052	UI		ALWAYS	AUTO	
Position Reference Indicator	0020,1040	LO		VNAP	AUTO	



**Table 165: General Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

**Table 166: Image Plane Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Position (Patient)	0020,0032	DS		ALWAYS	AUTO	
Image Orientation (Patient)	0020,0037	DS		ALWAYS	AUTO	
Pixel Spacing	0028,0030	DS		ALWAYS	AUTO	
Slice Thickness	0018,0050	DS		VNAP	AUTO	

**Table 167: Contrast/Bolus Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Contrast/Bolus Agent	0018,0010	LO		VNAP	AUTO	

**Table 168: CT Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS		ALWAYS	AUTO	
Bits Allocated	0028,0100	US		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
High Bit	0028,0102	US		ALWAYS	AUTO	
Rescale Intercept	0028,1052	DS		ALWAYS	AUTO	
Rescale Slope	0028,1053	DS		ALWAYS	AUTO	
KVP	0018,0060	DS		VNAP	AUTO	
Acquisition Number	0020,0012	IS		VNAP	AUTO	

**Table 169: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 170: Image Pixel Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	

**Table 171: SOP Common Module**

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

## 8.1.1.7. Digital X-Ray Image Storage - For Pres. SOP

Table 172: IOD of Created Digital X-Ray Image Storage - For Pres. SOP Instances

Information Entity	Module	Presence Of Module
Image	DX Anatomy Imaged Module	ALWAYS
Image	DX Detector Module	ALWAYS
Image	DX Image Module	ALWAYS
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Waveform	Acquisition Context Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	SOP Common Module	ALWAYS
Image	Overlay Plane Module	CONDITIONAL
Image	VOI LUT Module	CONDITIONAL

Table 173: DX Anatomy Imaged Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Laterality	0020,0062	CS		ALWAYS	AUTO	
Anatomic Region Sequence	0008,2218	SQ		VNAP	AUTO	
>Anatomic Region Modifier Sequence	0008,2220	SQ		ANAP	AUTO	
>>Code Value	0008,0100	SH		ALWAYS	AUTO	
>>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>>Code Meaning	0008,0104	LO		ALWAYS	AUTO	
>Code Value	0008,0100	SH		ALWAYS	AUTO	
>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>Code Meaning	0008,0104	LO		ALWAYS	AUTO	

Table 174: DX Detector Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Imager Pixel Spacing	0018,1164	DS		ALWAYS	AUTO	
Detector Type	0018,7004	CS		VNAP	AUTO	

Table 175: DX Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	
Patient Orientation	0020,0020	CS		ALWAYS	AUTO	
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS		ALWAYS	AUTO	
Bits Allocated	0028,0100	US		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
High Bit	0028,0102	US		ALWAYS	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	
Burned In Annotation	0028,0301	CS		ALWAYS	AUTO	
Pixel Intensity Relationship	0028,1040	CS		ALWAYS	AUTO	
Pixel Intensity Relationship Sign	0028,1041	SS		ALWAYS	AUTO	
Rescale Intercept	0028,1052	DS		ALWAYS	AUTO	
Rescale Slope	0028,1053	DS		ALWAYS	AUTO	
Rescale Type	0028,1054	LO		ALWAYS	AUTO	
Lossy Image Compression	0028,2110	CS		ALWAYS	AUTO	
Presentation LUT Shape	2050,0020	CS		ALWAYS	AUTO	

**Table 176: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

**Table 177: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 178: General Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

**Table 179: General Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

**Table 180: Acquisition Context Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Context Sequence	0040,0555	SQ		VNAP	AUTO	
>Date	0040,A121	DA		ANAPEV	AUTO	
>Time	0040,A122	TM		ANAPEV	AUTO	
>Person Name	0040,A123	PN		ANAPEV	AUTO	
>Referenced Frame Numbers	0040,A136	US		ANAPEV	AUTO	
>Concept Name Code Sequence	0040,A043	SQ		ALWAYS	AUTO	
>>Code Value	0008,0100	SH		ALWAYS	AUTO	
>>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>>Code Meaning	0008,0104	LO		ALWAYS	AUTO	
>Measurement Units Code Sequence	0040,08EA	SQ		ANAPEV	AUTO	
>>Code Value	0008,0100	SH		ALWAYS	AUTO	
>>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>>Code Meaning	0008,0104	LO		ALWAYS	AUTO	
>Concept Code Sequence	0040,A168	SQ		ANAPEV	AUTO	
>>Code Value	0008,0100	SH		ALWAYS	AUTO	
>>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>>Code Meaning	0008,0104	LO		ALWAYS	AUTO	

**Table 181: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 182: Image Pixel Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	

**Table 183: SOP Common Module**

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

**Table 184: Overlay Plane Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	6000,0010	US		ALWAYS	AUTO	
Overlay Columns	6000,0011	US		ALWAYS	AUTO	
Overlay Type	6000,0040	CS		ALWAYS	AUTO	
Overlay Origin	6000,0050	SS		ALWAYS	AUTO	
Overlay Bits Allocated	6000,0100	US		ALWAYS	AUTO	
Overlay Bit Position	6000,0102	US		ALWAYS	AUTO	
Overlay Data	6000,3000	O W/ OB		VNAP	AUTO	

**Table 185: VOI LUT Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Window Center	0028,1050	DS		ALWAYS	AUTO	
Window Width	0028,1051	DS		ALWAYS	AUTO	
VOI LUT Sequence	0028,3010	SQ		VNAP	AUTO	

**8.1.1.8. MR Spectroscopy Storage SOP Class**

**Table 186: IOD of Created MR Spectroscopy Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
	MR Spectroscopy Module	ALWAYS
	Mr Spectroscopy Pulse Sequence Module	CONDITIONAL
	Multi-frame Functional Groups Module (MR Spectroscopy)	ALWAYS
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
	MR Series Module	ALWAYS
Frame of Reference	Frame of Reference Module	ALWAYS
Frame of Reference	Synchronization Module	CONDITIONAL
Equipment	General Equipment Module	ALWAYS

Waveform	Acquisition Context Module	ALWAYS
	Multi-frame Dimension Module	ALWAYS
Image	SOP Common Module	ALWAYS

**Table 187: MR Spectroscopy Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	
Volumetric Properties	0008,9206	CS		ALWAYS	AUTO	
Volume Based Calculation Technique	0008,9207	CS		ALWAYS	AUTO	
Complex Image Component	0008,9208	CS		ALWAYS	AUTO	
Acquisition Contrast	0008,9209	CS		ALWAYS	AUTO	

**Table 188: Mr Spectroscopy Pulse Sequence Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Pulse Sequence Name	0018,9005	SH		ANAPEV	AUTO	
Echo Pulse Sequence	0018,9008	CS		ANAPEV	AUTO	
Multiple Spin Echo	0018,9011	CS		ANAPEV	AUTO	
Multi-planar Excitation	0018,9012	CS		ANAPEV	AUTO	
Spectrally Selected Suppression	0018,9025	CS		ANAPEV	AUTO	
MR Spectroscopy Acquisition Type	0018,9200	CS		ANAPEV	AUTO	

**Table 189: Multi-frame Functional Groups Module (MR Spectroscopy)**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Content Date	0008,0023	DA		ALWAYS	AUTO	
Content Time	0008,0033	TM		ALWAYS	AUTO	
Instance Number	0020,0013	IS		ALWAYS	AUTO	
Number of Frames	0028,0008	IS		ALWAYS	AUTO	

**Table 190: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

**Table 191: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 192: General Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

**Table 193: MR Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	

**Table 194: Frame of Reference Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame of Reference UID	0020,0052	UI		ALWAYS	AUTO	
Position Reference Indicator	0020,1040	LO		VNAP	AUTO	

**Table 195: Synchronization Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Synchronization Trigger	0018,106A	CS		ALWAYS	AUTO	
Acquisition Time Synchronized	0018,1800	CS		ALWAYS	AUTO	
Synchronization Frame of Reference UID	0020,0200	UI		ALWAYS	AUTO	

**Table 196: General Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

**Table 197: Acquisition Context Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Context Sequence	0040,0555	SQ		VNAP	AUTO	
>Date	0040,A121	DA		ANAPEV	AUTO	
>Time	0040,A122	TM		ANAPEV	AUTO	
>Person Name	0040,A123	PN		ANAPEV	AUTO	

**Table 198: Multi-frame Dimension Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Dimension Organization Sequence	0020,9221	SQ		VNAP	AUTO	
>Dimension Organization UID	0020,9164	UI		ALWAYS	AUTO	
Dimension Index Sequence	0020,9222	SQ		VNAP	AUTO	
>Dimension Index Pointer	0020,9165	AT		ALWAYS	AUTO	

**Table 199: SOP Common Module**

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

## 8.1.1.9. Ultrasound Image Storage SOP Class

Table 200: IOD of Created Ultrasound Image Storage SOP Class Instances

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	Contrast/Bolus Module	CONDITIONAL
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	US Image Module	ALWAYS
Image	SOP Common Module	ALWAYS

Table 201: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

Table 202: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

Table 203: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

Table 204: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

Table 205: Contrast/Bolus Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Contrast/Bolus Agent	0018,0010	LO		VNAP	AUTO	

**Table 206: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 207: Image Pixel Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	

**Table 208: US Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS		ALWAYS	AUTO	
Bits Allocated	0028,0100	US		ALWAYS	AUTO	
High Bit	0028,0102	US		ALWAYS	AUTO	
Image Type	0008,0008	CS		VNAP	AUTO	

**Table 209: SOP Common Module**

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

**8.1.1.10. Ultrasound Multi-frame Image Storage SOP Class****Table 210: IOD of Created Ultrasound Multi-frame Image Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Frame of Reference	Frame of Reference Module	CONDITIONAL
Equipment	General Equipment Module	ALWAYS
Image	Contrast/Bolus Module	CONDITIONAL
Image	Cine Module	ALWAYS
Image	Multi-Frame Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	US Image Module	ALWAYS
Image	SOP Common Module	ALWAYS

**Table 211: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	



Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

**Table 212: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 213: General Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

**Table 214: Frame of Reference Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame of Reference UID	0020,0052	UI		ALWAYS	AUTO	
Position Reference Indicator	0020,1040	LO		VNAP	AUTO	

**Table 215: General Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

**Table 216: Contrast/Bolus Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Contrast/Bolus Agent	0018,0010	LO		VNAP	AUTO	

**Table 217: Cine Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame Time	0018,1063	DS		ANAPEV	AUTO	
Frame Time Vector	0018,1065	DS		ANAPEV	AUTO	

**Table 218: Multi-Frame Module**

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

**Table 219: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 220: Image Pixel Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	

**Table 221: US Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	
Image Type	0008,0008	CS		VNAP	AUTO	

**Table 222: SOP Common Module**

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

**8.1.1.11. X-Ray Angiographic Image Storage SOP Class****Table 223: IOD of Created X-Ray Angiographic Image Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Image	Cine Module	CONDITIONAL
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	X-ray Image Module	ALWAYS
Image	X-Ray Acquisition Module	ALWAYS
Image	XA Positioner Module	ALWAYS

**Table 224: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

**Table 225: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	

Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 226: General Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

**Table 227: Cine Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame Time	0018,1063	DS		ANAPEV	AUTO	
Frame Time Vector	0018,1065	DS		ANAPEV	AUTO	

**Table 228: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 229: Image Pixel Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	
Columns	0028,0011	US		ALWAYS	AUTO	
Pixel Data	7FE0,0010	O W/ OB		ALWAYS	AUTO	

**Table 230: X-ray Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	

**Table 231: X-Ray Acquisition Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
KVP	0018,0060	DS		VNAP	AUTO	

**Table 232: XA Positioner Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Positioner Primary Angle	0018,1510	DS		VNAP	AUTO	
Positioner Secondary Angle	0018,1511	DS		VNAP	AUTO	

## 8.1.1.12. X-Ray Radiofluoroscopic Image Storage SOP Class

Table 233: IOD of Created X-Ray Radiofluoroscopic Image Storage SOP Class Instances

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	Contrast/Bolus Module	CONDITIONAL
Image	Cine Module	CONDITIONAL
Image	Multi-Frame Module	ALWAYS
Image	Mask Module	CONDITIONAL
Image	General Image Module	ALWAYS
Image	X-ray Image Module	ALWAYS
Image	X-Ray Tomography Acquisition Module	CONDITIONAL
Image	X-Ray Acquisition Module	ALWAYS
Image	SOP Common Module	ALWAYS
Image	Multi-frame Overlay Module	CONDITIONAL

Table 234: Patient Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAPEV	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAPEV	AUTO	

Table 235: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

Table 236: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

Table 237: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

**Table 238: Contrast/Bolus Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Contrast/Bolus Agent	0018,0010	LO		VNAP	AUTO	

**Table 239: Cine Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame Time	0018,1063	DS		ANAPEV	AUTO	
Frame Time Vector	0018,1065	DS		ANAPEV	AUTO	

**Table 240: Multi-Frame Module**

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

**Table 241: Mask Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Recommended Viewing Mode	0028,1090	CS		VNAP	AUTO	
Mask Subtraction Sequence	0028,6100	SQ		ALWAYS	AUTO	
>Mask Operation	0028,6101	CS		ALWAYS	AUTO	

**Table 242: General Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 243: X-ray Image Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	
Photometric Interpretation	0028,0004	CS		ALWAYS	AUTO	
Bits Allocated	0028,0100	US		ALWAYS	AUTO	
Bits Stored	0028,0101	US		ALWAYS	AUTO	
High Bit	0028,0102	US		ALWAYS	AUTO	
Pixel Representation	0028,0103	US		ALWAYS	AUTO	
Pixel Intensity Relationship	0028,1040	CS		ALWAYS	AUTO	

**Table 244: X-Ray Tomography Acquisition Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Tomo Layer Height	0018,1460	DS		ALWAYS	AUTO	

**Table 245: X-Ray Acquisition Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Radiation Setting	0018,1155	CS		ALWAYS	AUTO	
KVP	0018,0060	DS		VNAP	AUTO	

**Table 246: SOP Common Module**

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

**Table 247: Multi-frame Overlay Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Number of Frames in Overlay	6000,0015	IS		ALWAYS		

**8.1.1.13. Raw Data Storage SOP Class****Table 248: IOD of Created Raw Data Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
	Raw Data Module	ALWAYS
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Series	General Series Module	ALWAYS
Frame of Reference	Synchronization Module	CONDITIONAL
Equipment	General Equipment Module	ALWAYS
Waveform	Acquisition Context Module	ALWAYS
Image	SOP Common Module	ALWAYS

**Table 249: Raw Data Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Content Date	0008,0023	DA		ALWAYS	AUTO	
Content Time	0008,0033	TM		ALWAYS	AUTO	
Creator-Version UID	0008,9123	UI		ALWAYS	AUTO	
Instance Number	0020,0013	IS		VNAP	AUTO	

**Table 250: Patient Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Name	0010,0010	PN		VNAP	AUTO	
Patient ID	0010,0020	LO		VNAP	AUTO	
Patient's Birth Date	0010,0030	DA		VNAP	AUTO	
Patient's Sex	0010,0040	CS		VNAP	AUTO	
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO	
>Referenced SOP Class UID	0008,1150	UI		ANAP	AUTO	
>Referenced SOP Instance UID	0008,1155	UI		ANAP	AUTO	

**Table 251: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Instance UID	0020,000D	UI		ALWAYS	AUTO	
Study Date	0008,0020	DA		VNAP	AUTO	
Study Time	0008,0030	TM		VNAP	AUTO	
Accession Number	0008,0050	SH		VNAP	AUTO	
Referring Physician's Name	0008,0090	PN		VNAP	AUTO	
Study ID	0020,0010	SH		VNAP	AUTO	

**Table 252: General Series Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	
Series Number	0020,0011	IS		VNAP	AUTO	

**Table 253: Synchronization Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Synchronization Trigger	0018,106A	CS		ALWAYS	AUTO	
Acquisition Time Synchronized	0018,1800	CS		ALWAYS	AUTO	
Synchronization Frame of Reference UID	0020,0200	UI		ALWAYS	AUTO	

**Table 254: General Equipment Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO		VNAP	AUTO	

**Table 255: Acquisition Context Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Context Description	0040,0556	ST		ANAP	AUTO	
Acquisition Context Sequence	0040,0555	SQ		VNAP	AUTO	
>Concept Name Code Sequence	0040,A043	SQ		ALWAYS	AUTO	
>>Code Value	0008,0100	SH		ALWAYS	AUTO	
>>Coding Scheme Designator	0008,0102	SH		ALWAYS	AUTO	
>>Code Meaning	0008,0104	LO		ALWAYS	AUTO	

**Table 256: SOP Common Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
SOP Class UID	0008,0016	UI		ANAP	AUTO	
SOP Instance UID	0008,0018	UI		ANAP	AUTO	

### 8.1.2. Usage of Attributes from Received IOD

Not Applicable.

### 8.1.3. Attribute Mapping

Not Applicable.

### 8.1.4. Coerced/Modified fields

In general, ViewForum R6.1 will try and optimize the imported image data. This may involve the removal of redundant data, either or not due to the creation of a Presentation State object for the image data. This may also involve the creation of extra attributes. As it is not the intention of ViewForum R6.1 to export this data as such, the SOP Instance UID shall not be changed.

If not available at import then ViewForum R6.1 will create the additional attributes as listed in the table below.

**Table 257: Additional Attributes for Image Imports**

Attribute Name	Tag	VR	Generated Value
Performed Procedure Step Start Date	0040,0244	DA	Copied from (0008,0020) Study Date.
Performed Procedure Step Start Time	0040,0245	TM	Copied from (0008,0030) Study Time.
Performed Procedure Step ID	0040,0253	SH	Copied from (0020,0010) Study ID.
Performed Procedure Step Description	0040,0254	LO	Copied from (0008,1030) Study Description.

If the SCU does not propose a presentation context for the Grayscale Softcopy Presentation State storage SOP class, then ViewForum R6.1 will derive Presentation State data from the imported image data and store this data in a new series within the examination of the imported image.

However, if during import the image is accompanied by Presentation State data, the ViewForum R6.1 database shall avoid data overlap by only storing the relevant data from the first object received; either the first image or its Presentation State!

Thus it will omit data received by succeeding objects concerning the optional attributes (VT=3) listed in table below.

**Table 258: Omitted Attributes for Image Imports**

Attribute Name	Tag	VR	Value	Presence of Value	Source
<b>Patient Module</b>					
Referenced Patient Sequence	0008,1120	SQ		ANAP	AUTO
Patient's Birth Time	0010,0032	TM		ANAP	AUTO
Other Patient Ids	0010,1000	LO		ANAP	AUTO
Other Patient Names	0010,1001	PN		ANAP	AUTO
Ethnic Group	0010,2160	SH		ANAP	AUTO
Patient Comments	0010,4000	LT		ANAP	AUTO
<b>General Study Module</b>					
Referring Physician Identification Sequence	0008,0096	SQ		ANAP	AUTO
Study Description	0008,1030	LO		ANAP	AUTO
Procedure Code Sequence	0008,1032	SQ		ANAP	AUTO
Physician(s) of Record	0008,1048	PN		ANAP	AUTO
Physician(s) of Record Identification Sequence	0008,1049	SQ		ANAP	AUTO
Name of Physician(s) Reading Study	0008,1060	PN		ANAP	AUTO
Physician(s) Reading Study Identification Sequence	0008,1062	SQ		ANAP	AUTO
Referenced Study Sequence	0008,1110	SQ		ANAP	AUTO
<b>Patient Study Module</b>					
Admitting Diagnoses Description	0008,1080	UI		ANAP	AUTO
Admitting Diagnoses Code Sequence	0008,1084	SQ		ANAP	AUTO
Patient's Age	0010,1010	AS		ANAP	AUTO
Patient's Size	0010,1020	DS		ANAP	AUTO
Patient's Weight	0010,1030	DS		ANAP	AUTO
Occupation	0010,2180	SH		ANAP	AUTO
Additional Patient History	0010,21B0	LT		ANAP	AUTO
<b>Clinical Trial Study Module</b>					
Clinical Trial Time Point Description	0012,0051			ANAP	AUTO
<b>General Series Module</b>					
Series Date	0008,0021	DA		ANAP	AUTO
Series Time	0008,0031	TM		ANAP	AUTO
Series Description	0008,103E	LO		ANAP	AUTO
Performing Physicians' Name	0008,1050	PN		ANAP	AUTO
Performing Physician Identification	0008,1052	SQ		ANAP	AUTO



Sequence					
Operators' Name	0008,1070	PN		ANAP	AUTO
Operators Identification Sequence	0008,1072	SQ		ANAP	AUTO
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAP	AUTO
Body Part Examined	0018,0015	CS		ANAP	AUTO
Protocol Name	0018,1030	LO		ANAP	AUTO
Smallest Pixel Value in Series	0028.0108	US / SS		ANAP	AUTO
Largest Pixel Value in Series	0028.0109	US / SS		ANAP	AUTO
Performed Procedure Step Start Date	0040,0244	DA		ANAP	AUTO
Performed Procedure Step Start Time	0040,0245	TM		ANAP	AUTO
Performed Procedure Step ID	0040,0253	SH		ANAP	AUTO
Performed Procedure Step Description	0040,0254	LO		ANAP	AUTO
Performed Protocol Code Sequence	0040,0260	SQ		ANAP	AUTO
Request Attributes Sequence	0040,0275	SQ		ANAP	AUTO
Comments on the Performed Procedure Step	0040,0280	ST		ANAP	AUTO
<b>General Equipment Module</b>					
Institution Name	0008,0080	LO		ANAP	AUTO
Institution Address	0008,0081	ST		ANAP	AUTO
Station Name	0008,1010	SH		ANAP	AUTO
Institutional Department Name	0008,1040	LO		ANAP	AUTO
Manufacturer's Model Name	0008,1090	LO		ANAP	AUTO
Device Serial Number	0018,1000	LO		ANAP	AUTO
Software Versions	0018,1020	LO		ANAP	AUTO
Spatial Resolution	0018,1050	DS		ANAP	AUTO
Date of Last Calibration	0018,1200	DA		ANAP	AUTO
Time of Last Calibration	0018,1201	TM		ANAP	AUTO
Pixel Padding Value	0028,0120	US / SS		ANAP	AUTO
<b>Display Shutter Module</b>					
Shutter Presentation Value	0018,1622	US		ANAP	AUTO
<b>Overlay Plane Module</b>					
Overlay Description	60xx,0022	LO		ANAP	AUTO
Overlay Subtype	60xx,0045	LO		ANAP	AUTO
ROI Area	60xx,1301	IS		ANAP	AUTO
ROI Mean	60xx,1302	DS		ANAP	AUTO
ROI Standard Deviation	60xx,1303	DS		ANAP	AUTO
Overlay Label	60xx,1500	LO		ANAP	AUTO
<b>SOP Common Module</b>					
Instance Creation Date	0008,0012	DA		ANAP	AUTO
Instance Creation Time	0008,0013	TM		ANAP	AUTO
Instance Creator UID	0008,0014	UI		ANAP	AUTO
Coding Scheme Identification Sequence	0008,0110	SQ		ANAP	AUTO
Timezone Offset From UTC	0008,0201	SH		ANAP	AUTO
Contributing Equipment Sequence	0018,A001	SQ		ANAP	AUTO
Instance Number	0020,0013	IS		ANAP	AUTO
SOP Authorization Date and Time	0100,0420	DT		ANAP	AUTO
SOP Authorization Comment	0100,0424	LT		ANAP	AUTO
Authorization Equipment Certification Number	0100,0426	LO		ANAP	AUTO
MAC Parameters Sequence	4FFE,0001	SQ		ANAP	AUTO
Digital Signatures Sequence	FFFA,FFFA	SQ		ANAP	AUTO

And clear all mandatory attributes (VT=2) listed in table below

**Table 259: Cleared Attributes for Image Imports**

Attribute Name	Tag	VR	Value	Presence of Value	Source
<b>Patient Module</b>					
Patient's Name	0010,0010	PN		VNAP	AUTO
Patient ID	0010,0020	LO		VNAP	AUTO
Patient's Birth Date	0010,0030	DA		VNAP	AUTO
Patient's Sex	0010,0040	CS		VNAP	AUTO
<b>Clinical Trial Subject Module</b>					
Clinical Trial Protocol Name	0012,0021	LO		VNAP	AUTO
Clinical Trial Site ID	0012,0030	LO		VNAP	AUTO
Clinical Trial Site Name	0012,0031	LO		VNAP	AUTO
<b>General Study Module</b>					
Study Date	0008,0020	DA		VNAP	AUTO
Study Time	0008,0030	TM		VNAP	AUTO
Accession Number	0008,0050	SH		VNAP	AUTO
Referring Physician's Name	0008,0090	PN		VNAP	AUTO
Study ID	0020,0010	SH		VNAP	AUTO
<b>Clinical Trial Study Module</b>					
Clinical Trial Time Point ID	0012,0050	LO		VNAP	AUTO
<b>General Series Module</b>					
Patient Position	0018,5100	CS		ANAP	AUTO
Series Number	0020,0011	IS		VNAP	AUTO
Laterality	0020,0060	CS		ANAP	AUTO
<b>Clinical Trial Series Module</b>					
Clinical Trial Coordinating Center Name	0012,0060	LO		VNAP	AUTO
<b>General Equipment Module</b>					
Manufacturer	0008,0070	LO		VNAP	AUTO
<b>Mask Module</b>					
Recommended Viewing Mode	0028,1090	CS		VNAP	AUTO
<b>Overlay/Curve Activation Module</b>					
Curve Activation Layer	50xx,1001	CS		ANAP	AUTO
Overlay Activation Layer	60xx,1001	CS		ANAP	AUTO

ViewForum R6.1 allows the operator to modify attributes of the stored images; see the table below. ViewForum R6.1 does not modify the pixel values of the stored images. Modified images retain their original Study, Series and Image UID.

**Table 260: Modifiable Attributes**

Attribute Name	Tag	VR	Value	Presence of Value	Source
<b>Patient</b>					
Patient's Name	0010,0010	PN		VNAP	USER
Patient ID	0010,0020	LO		VNAP	USER
Patient's Birth Date	0010,0030	DA		VNAP	USER
Patient's Sex	0010,0040	CS		VNAP	USER
Medical Alerts	0010,2000	LO	1-N	VNAP	USER
Contrast Allergies	0010,2110	LO	1-N	VNAP	USER
Patient Comments	0010,4000	LT		ANAP	USER
<b>Study</b>					
Accession Number	0008,0050	SH		VNAP	USER
Referring Physician's Name	0008,0090	PN		VNAP	USER
Study Description	0008,1030	LO		ANAP	USER
Physician(s) of Record	0008,1048	PN	1-N	ANAP	USER
Name of Physician(s) Reading Study	0008,1060	PN	1-N	ANAP	USER

Admitting Diagnoses Description	0008,1080	LO	1-N	ANAP	USER
Patient's Age	0010,1010	AS		ANAP	USER
Occupation	0010,2180	SH		ANAP	USER
Additional Patient History	0010,21B0	LT		ANAP	USER
Examination					
Performed Station Name	0040,0242	SH	An institution defined name for the modality on which the Performed Procedure Step was performed.	ANAP, VNAP	CONF / MPPS
Performed Location	0040,0243	SH	Description of the location at which the Performed Procedure Step was performed.	ANAP, VNAP	USER / MPPS
Performed Procedure Step Description	0040,0254	LO	From Modality Worklist or user input. The user can modify the description provided via Modality Worklist.	ANAP, VNAP	USER / MPPS
Performed Procedure Type Description	0040,0255	LO	A description of the type of procedure performed.	ANAP, VNAP	USER / MPPS
Comments on the Performed Procedure Step	0040,0280	ST	User-defined comments on the Performed Procedure Step.	ANAP, VNAP	USER / MPPS
Series					
-					

ViewForum R6.1 adds additional to exported new created images of the plug in some attributes. Some of the attributes are added for the connection to the created Presentation State. These attributes are listed in table below.

**Table 261: Additional Attributes for Export Images**

Attribute Name	Tag	VR	Value	Presence of Value	Source
General Image Module					
Presentation LUT Shape	2050,0020	SQ		ANAP	AUTO
VOI LUT Module					
Window Width	0028,1051	DS		ANAPEV	AUTO
Window Center	0028,1050	DS		ANAP	AUTO

## 8.2. Data Dictionary of Private Attributes

Not Applicable.

## 8.3. Coded Terminology and Templates

Not Applicable.

## 8.4. Grayscale Image consistency

The high-resolution display monitor attached to the product can be calibrated by using the service tool together with a light probe. .

## 8.5. Standard Extended/Specialized/Private SOPs

Not Applicable.

## 8.6. Private Transfer Syntaxes

None.