

No. MIIMS0003EA

**DICOM
CONFORMANCE STATEMENT
FOR
MODEL TFS-400B
(MIIMS0003EA)**

TOSHIBA CORPORATION

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1 Introduction

This document is a DICOM Conformance Statement for Toshiba's TFS-400B. It is intended to provide the reader with the knowledge of how to integrate this product within a DICOM compliant hospital network. It details the DICOM Service Classes, Information Objects, and Communication Protocols which are supported by this product.

If readers are unfamiliar with DICOM, it is recommended that they read the DICOM Specification (referenced below) prior to reading this conformance statement. Also note that this document is formatted according to the DICOM Specification, Part 2: Conformance.

1.1 References

- ACR-NEMA Digital Imaging and Communications in Medicine, DICOM V3.0.

1.2 Definitions

- **Association Establishment** - An Association Establishment is the first phase of communication between two DICOM Application Entities(AEs). The AEs use the Association Establishment to negotiate how data will be encoded and the type of data to be exchanged.
- **Called Application Entity Title** - The Called AE Title defines the intended receiver of an Association.
- **Calling Application Entity Title** - The Calling AE Title defines the requestor of an Association.
- **DICOM Message Service Element (DIMSE)** - A DIMSE defines the services and protocols utilized by an Application Entity to exchange messages.
- **Information Object Definition (IOD)** - An IOD is a data model which is an abstraction of real-world information. This data model defines the nature and attributes relevant to the class of real-world objects represented.
- **Service Class Provider (SCP)** - A Service Class Provider plays the "server" role to perform operations and invoke notifications during an Association. An example of a Storage Service Class Provider would be an image storage device. In this case, the image storage device stores the image that was sent by a Service Class User.
- **Service Class User (SCU)** - A Service Class User plays the "client" role to invoke operations and perform notifications during an Association. An example of a Storage Service Class User would be an image acquisition device. In this case, the image acquisition device creates and sends a DICOM image by requesting that a Service Class Provider store that image.
- **Service/Object Pair (SOP) Class** - An SOP Class is defined by the union of an Information Object Definition and a set of DIMSE Services. A DICOM Application Entity may support one or more SOP Classes. Each SOP Class is uniquely identified by an SOP Class UID.
- **SOP Instance** - A specific occurrence of an Information Object.
- **Transfer Syntax** - The Transfer Syntax is a set of encoding rules that allow DICOM Application Entities to negotiate the encoding techniques (e.g. data element structure, byte ordering, compression) that they are able to support. The Transfer Syntax is negotiated during Association Negotiation.
- **Unique Identifier (UID)** - A Unique Identifier is a globally unique, ISO compliant, ASCII-numeric string. It guarantees uniqueness across multiple countries, sites, vendors, and equipment.

1.3 Acronyms, Abbreviations and Symbols

- ACC American College of Cardiology
- ACR American College of Radiology
- ASCII American Standard Code for Information Interchange
- AE Application Entity
- ANSI American National Standards Institute
- CEN TC251 Comite Europeen de Normalisation - Technical Committee 251 - Medical Informatics
- DICOM Digital Imaging and Communications in Medicine
- DIMSE DICOM Message Service Element
- DIMSE-C DICOM Message Service Element - Composite
- DIMSE-N DICOM Message Service Element - Normalized
- HIS Hospital Information System
- HL7 Health Level 7
- IE Information Entity
- IOD Information Object Definition
- ISO International Standards Organization
- JIRA Japan Industries Association of Radiological Systems
- MEDIS-DC Medical Information System Development Center
- NEMA National Electrical Manufacturers Association
- OSI Open Systems Interconnection
- PDU Protocol Data Unit
- RIS Radiology Information System
- SCP Service Class Provider
- SCU Service Class User
- SOP Service-Object Pair
- TCP/IP Transmission Control Protocol/Internet Protocol
- UID Unique Identifier

2 Implementation Model

2.1 Application Data Flow Diagram

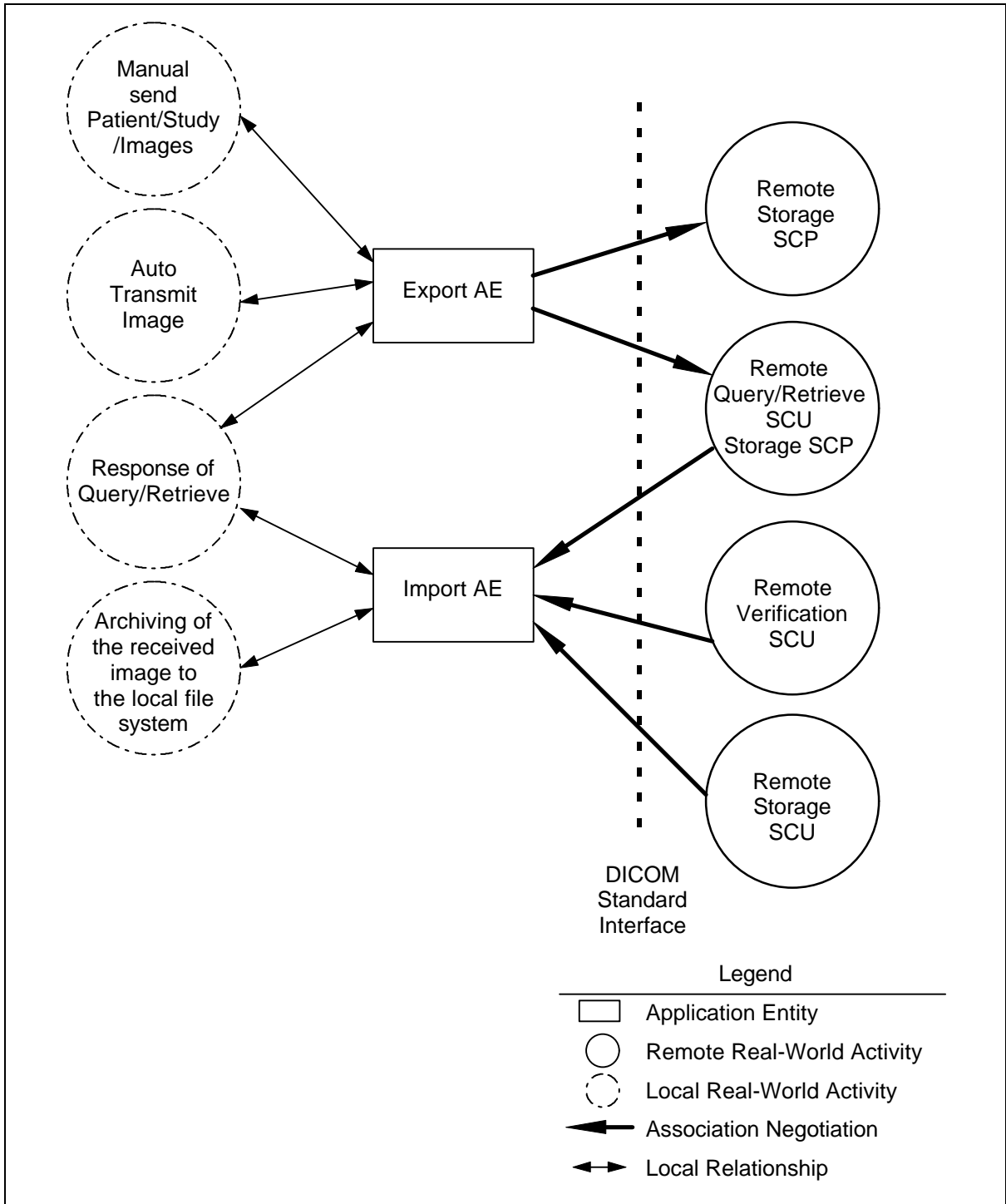


Figure 1

2.2 Functional Definitions of AE's

2.2.1 Export AE

Export AE is used to verify that a remote DICOM device is active on the network and to transmit images to a remote DICOM device. It therefore performs the following tasks:

- Builds DICOM CR, CT, MR, NM, SC, US, US Multi-frame, XA, and XRF Information Objects
- Establishes DICOM Association with remote DICOM device
- Performs storage of DICOM CR, CT, MR, NM, SC, US, US Multi-frame, XA, and XRF Information Objects to remote DICOM device
- Performs verification of remote DICOM device's presence on network

2.2.2 Import AE

Import AE is used to respond to requests to verify that the TFS-400B is present and active on the network and to receive CR, CT, MR, NM, SC, US, US Multi-frame, XA, and XRF images and respond to requests of Query/Retrieve from remote DICOM devices.

2.3 Sequencing of Real World Activities

2.3.1 Features

2.3.1.1 Manual Send Patient/Study/Images

- Operator requests to send images after selecting the transferred images from the Patient List or from the Study List.
- When the image transfer fails, display the Send Failed Image List. And operator can manually attempt to resend image at a later time.

2.3.1.2 Auto Transmit Image

- When the TFS-400B receives image that predetermined to send to a remote DICOM device, sends the image to the device automatically.
- When the image transfer fails, the TFS-400B automatically attempts to resend the image at a later time.

2.3.1.3 Archiving of the Received Image to the Local File System

- The TFS-400B receives CR, CT, MR, NM, SC, US, US Multi-frame, XA, and XRF images from remote DICOM devices.
- The TFS-400B archives the received image to the local file system.

2.3.1.4 Response of Query/Retrieve

- It returns the result of the search corresponding to the search request.
- Returns the requested images.

2.3.2 Operation

2.3.2.1 Manual Send Patient/Study/Images

The operation for sending images is described below:

- Step-1: Select the patient or the study to be sent.
- Step-2: Select the destination of image sending.
- Step-3: Request sending.

2.3.2.2 Auto Transmit Image

There is no specific operation for Auto Transmit Image.

Note: The target image and the destination DICOM device are set by your Toshiba representative

at the time of installation of the TFS-400B.

2.3.2.3 Archiving of the Received Image to the Local File System

There is no specific operation for receiving and archiving images.

3 AE Specifications

3.1 Export Specification

Export AE provides Standard Conformance to the following DICOM SOP Classes as an SCU:

Table 1

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
CR Image Storage	1.2.840.10008.5.1.4.1.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
NM Image Storage	1.2.840.10008.5.1.4.1.1.20
SC Image Storage	1.2.840.10008.5.1.4.1.1.7
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1
US Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2

3.1.1 Association Establishment Policies

3.1.1.1 General

Export AE will utilize and understand the following Application Context Name:

Table 2

DICOM V3.0 Application Context	1.2.840.10008.3.1.1.1
--------------------------------	-----------------------

Export AE supports a minimum PDU size of 64 Kbytes and a maximum PDU size of 64 Kbytes. The default value is set to 64 Kbytes.

3.1.1.2 Number of Associations

Export AE will be able to initiate 8 associations at a time.

3.1.1.3 Asynchronous Nature

Export AE allows a single outstanding operation on any association. Therefore, Export AE does not support asynchronous operation window negotiation other than the default as specified by the specification.

3.1.1.4 Implementation Identifying Information

Export AE will specify the following Implementation Identifying Information:

- Implementation Class UID 1.2.392.200036.9116.7.3.10
- Implementation Version Name TM_OT_TFS_1.0

3.1.2 Association Initiation by Real-World Activity

Export AE initiates an association when the following activity occur:

- “Manual Send Patient/Study/Images”
 - Verification - Verify that a remote DICOM device is present on the network
 - Storage - Create and store a CR, CT, MR, NM, SC, US, US Multi-frame, XA, or XRF image to a remote DICOM device
- “Auto Transmit Image”
 - Verification - Verify that a remote DICOM device is present on the network
 - Storage - Create and store a CR, CT, MR, NM, SC, US, US Multi-frame, XA, or XRF image to a remote DICOM device
- “Response of Query/Retrieve”
 - Verification - Verify that a remote DICOM device is present on the network
 - Storage - Create and store a CR, CT, MR, NM, SC, US, US Multi-frame, XA, or XRF image to a remote DICOM device

The Verification is initiated automatically at each case.

3.1.2.1 Real-World Activity - Verification

3.1.2.1.1 Associated Real-World Activity - Verification

Export AE performs the Verification automatically before performing an image transfer request. If the destination device does not support the Verification Service, this feature can be turned off in the configuration.

3.1.2.1.2 Proposed Presentation Contexts - Verification

Export AE proposes the following Presentation Contexts shown below:

Table 3

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

3.1.2.2 Real-World Activity - Storage

3.1.2.2.1 Associated Real-World Activity - Storage

The Storage is executed by the TFS-400B after manual or automatic requests are queued.

3.1.2.2.2 Proposed Presentation Contexts - Storage

Export AE proposes the following Presentation Contexts shown below:

Table 4

Presentation Context Table					
Abstract Syntax		Transfer Syntax			Extended
Name	UID	Name List	UID List	Role	Negotiation
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None

NM Image Storage	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		RLE Lossless	1.2.840.10008.1.2.5	SCU	None
US Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCU	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCU	None

3.1.2.2.2.1 SOP Specific Conformance - Storage

Export AE operation involves the following sequence of steps for each image transfer.

- (1) Association establishment (requestor only)
- (2) Data transfer (SCU only)
- (3) Association release (requestor only)

Export AE judges that the transfer of one image succeeded when the result of (2) "Data transfer" is "Success" even if the result of (3) "Association release" is "Failure".

Note: The TFS-400B does not perform image data compression/expand. So Export AE initiates an association with the transfer syntax for the image data.

3.1.3 Association Acceptance Policy

Export AE does not accept any associations generated by remote applications.

3.2 Import Specification

Import AE provides Standard Conformance to the following DICOM SOP Classes as an SCP:

Table 5

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
CR Image Storage	1.2.840.10008.5.1.4.1.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
NM Image Storage	1.2.840.10008.5.1.4.1.1.20
SC Image Storage	1.2.840.10008.5.1.4.1.1.7
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1
US Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2
Patient / Study Only Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.3.1
Patient / Study Only Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.3.2

3.2.1 Association Establishment Policies

3.2.1.1 General

Import AE will utilize and understand the following Application Context Name:

Table 6

DICOM V3.0 Application Context	1.2.840.10008.3.1.1.1
--------------------------------	-----------------------

Import AE supports a minimum PDU size of 64 Kbytes and a maximum PDU size of 64 Kbytes. The default value is set to 64 Kbytes.

3.2.1.2 Number of Associations

Import AE will be able to support up to 8 associations at a time.

3.2.1.3 Asynchronous Nature

Import AE allows a single outstanding operation on any association. Therefore, Import AE does not support asynchronous operation window negotiation other than the default as specified by the specification.

3.2.1.4 Implementation Identifying Information

Import AE will specify the following Implementation Identifying Information:

- Implementation Class UID 1.2.392.200036.9116.7.3.10
- Implementation Version Name TM_OT_TFS_1.0

3.2.2 Association Initiation by Real-World Activity

Import AE never initiates an association.

3.2.3 Association Acceptance Policy

When Import AE receives an association request, it will allow the following activities to be performed during that association:

- Verification - Allow a remote DICOM device to verify that the TFS-400B is active on the DICOM network
- Storage - Allow a remote DICOM device to send a CR, CT, MR, NM, SC, US, US Multi-frame, XA, or XRF image to the TFS-400B
- Query/Retrieve(Find) - Allow a remote DICOM device to send a search request
- Query/Retrieve(Move) - Allow a remote DICOM device to send a request for image transfer

3.2.3.1 Real-World Activity - Verification

3.2.3.1.1 Associated Real-World Activity - Verification

The TFS-400B responds to the Verification made by a remote Verification SCU.

3.2.3.1.2 Presentation Context Table - Verification

Import AE accepts the Presentation Contexts shown below:

Table 7

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

3.2.3.1.2.1 SOP Specific Conformance - Verification

Import AE responds with the following status codes in response to a C-ECHO request.

Table 8

Service Status	Further Meaning	Protocol Codes	Description
Success	Success	0x0000	Operation performed properly.

3.2.3.1.3 Presentation Context Acceptance Criterion - Verification

Import AE accepts the Presentation Contexts listed in the Presentation Context Table (Table 7).

3.2.3.1.4 Transfer Syntax Selection Policies - Verification

Import AE supports only the Implicit VR Little Endian transfer syntax. It rejects any proposed Presentation Context which does not specify the default Implicit VR Little Endian transfer syntax.

3.2.3.2 Real-World Activity - Storage

3.2.3.2.1 Associated Real-World Activity - Storage

The TFS-400B receives image data sent by a remote Storage SCU, archives it to the local file system, and responds to the remote Storage SCU.

3.2.3.2.2 Presentation Context Table - Storage

Import AE accepts the Presentation Contexts shown below:

Table 9

Presentation Context Table					
Abstract Syntax		Transfer Syntax			Extended
Name	UID	Name List	UID List	Role	Negotiation
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None

NM Image Storage	1.2.840.10008.5.1.4.1.1.20	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		RLE Lossless	1.2.840.10008.1.2.5	SCU	None
US Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCU	None
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		JPEG Lossy, Baseline(Process1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEGLossy,Extended (Process2&4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG Lossless (Process 14[Selection Value 1])	1.2.840.10008.1.2.4.70	SCP	None

3.2.3.2.2.1 SOP Specific Conformance - Storage

Import AE responds with the following status codes in response to a C-STORE request.

Import AE achieves Level 2 Conformance as described in Part 4 of the DICOM V3.0 Standard document.

Table 10

Service Status	Further Meaning	Protocol Codes	Description
Success	Success	0x0000	Operation performed properly.
Error	Data Set does not match SOP Class	0xA900	SOP Class UID does not match.
	Cannot understand	0xC000	Invalid data set or unsupported extended character sets. (See section 7 'Support of Extended Character Sets'.)
Refused	Out of Resources	0xA700	Local resource is insufficient.

When the service status is "Refused", check the free space in the local file system of the remote Storage SCU before resending.

- If the free space is insufficient, create enough space.
- If there is enough free space, wait till all large applications that are running are terminated.

Note: The TFS-400B does not perform image data compression/expand.

3.2.3.2.3 Presentation Context Acceptance Criterion - Storage

Import AE accepts the Presentation Contexts listed in the Presentation Context Table (Table 9).

3.2.3.2.4 Transfer Syntax Selection Policies - Storage

Import AE supports the transfer syntax listed in the Presentation Context Table (Table 9). It rejects any proposed Presentation Context which is not specified in the Presentation Context Table (Table 9).

3.2.3.3 Real-World Activity - Query/Retrieve(Find)

3.2.3.3.1 Associated Real-World Activity - Query/Retrieve(Find)

When a request for a search is performed by a remote system, an association is accepted.

3.2.3.3.2 Presentation Context Table - Query/Retrieve(Find)

Import AE accepts the Presentation Contexts shown below:

Table 11

Presentation Context Table					
Abstract Syntax		Transfer Syntax			Extended
Name	UID	Name List	UID List	Role	Negotiation
Patient / Study Only Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

3.2.3.3.2.1 SOP Specific Conformance - Query/Retrieve(Find)

The status is indicated by C-FIND-RSP as shown below.

Table 12

Service Status	Protocol Codes	Meaning
Refused	0xA700	Out of Resources - Local resource is insufficient.
Failed	0xA900	Identifier does not match SOP Class.
	0xC000	Unable to process - Local Error occurred or unsupported extended character sets. (See section 7 'Support of Extended Character Sets'.)
Cancel	0xFE00	Matching terminated due to Cancel request.
Success	0x0000	Matching is complete - No final Identifier is supplied.
Pending	0xFF00	Matches are continuing - Current Match is supplied and any Optional Keys were supported in the same manner as Required Keys.
	0xFF01	Matches are continuing - Warning that one or more Optional Keys were not supported for existence and/or matching for this Identifier.

Search keys for Query/Retrieve SCP are described in section 10 'Search Keys'.

3.2.3.3.3 Presentation Context Acceptance Criterion - Query/Retrieve(Find)

Import AE accepts the Presentation Contexts listed in the Presentation Context Table (Table 11).

3.2.3.3.4 Transfer Syntax Selection Policies - Query/Retrieve(Find)

Import AE supports only the Implicit VR Little Endian transfer syntax. It rejects any proposed Presentation Context which does not specify the default Implicit VR Little Endian transfer syntax.

3.2.3.4 Real-World Activity - Query/Retrieve(Move)

3.2.3.4.1 Associated Real-World Activity - Query/Retrieve(Move)

When a request for the image transfer is made of a remote system, an association is accepted.

3.2.3.4.2 Presentation Context Table - Query/Retrieve(Move)

Import AE accepts the Presentation Contexts shown below:

Table 13

Presentation Context Table					
Abstract Syntax		Transfer Syntax			Extended
Name	UID	Name List	UID List	Role	Negotiation
Patient / Study Only Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.3.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

3.2.3.4.2.1 SOP Specific Conformance - Query/Retrieve(Move)

The status is indicated by C-MOVE-RSP as shown below.

Table 14

Service Status	Protocol Codes	Meaning
Refused	0xA701	Out of Resources - Unable to calculate number of matches.
	0xA702	Out of Resources - Unable to perform sub-operations.
	0xA801	Move Destination unknown
Failed	0xA900	Identifier does not match SOP Class.
	0xC000	Unable to process - Local Error occurred.
Cancel	0xFE00	Sub-operations terminated due to Cancel Indication.
Warning	0xB000	Sub-operations Complete - One or more Failures.
Success	0x0000	Sub-operations Complete - No Failures.

3.2.3.4.3 Presentation Context Acceptance Criterion - Query/Retrieve(Move)

Import AE accepts the Presentation Contexts listed in the Presentation Context Table (Table 13).

3.2.3.4.4 Transfer Syntax Selection Policies - Query/Retrieve(Move)

Import AE supports only the Implicit VR Little Endian transfer syntax. It rejects any proposed Presentation Context which does not specify the default Implicit VR Little Endian transfer syntax.

4 Communication Profiles

4.1 Supported Communication Stacks

This product provides DICOM TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

4.2 OSI Stack

Not applicable to this product.

4.3 TCP/IP Stack

This product inherits its TCP/IP stack from the computer system upon which it executes.

4.3.1 API

Not applicable to this product.

4.3.2 Physical Media Support

This product is indifferent to the physical medium over which TCP/IP executes; it inherits the medium from the computer system upon which it executes.

4.4 Point-to-Point Stack

Not applicable to this product.

5 Extensions/Specializations/Privatizations

Not applicable to this product.

6 Configuration

For the TFS-400B, the configuration can be set using the DICOM Online Setup interface.

Note: Settings are performed by your Toshiba representative at the time of installation of the TFS-400B.

6.1 AE Title/Presentation Address Mapping

The mapping from the AE titles to the presentation addresses is as follows:

- One port number and one AE title can be described for one host name.
- Each AE title is mapped to one port number.
- The TFS-400B has following default values:

Local Port No.	5000
Local AE Title	TM_OT_TFS_1.0

6.2 Configurable Parameters

6.2.1 Time-out Value, Retry Count, Retry Interval

The time-out value, retry count, and retry interval in each status are shown below.

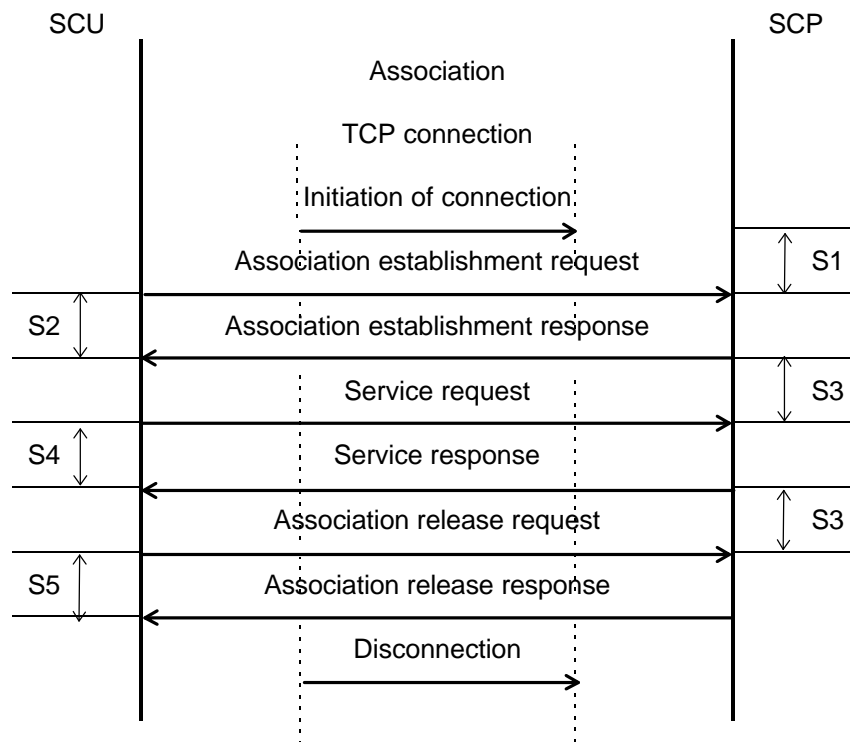


Figure 2

Table 15

Status	Item	Time-out value	Retry count	Retry interval	Remarks
S1	Association establishment request waiting time	default: 30 seconds Range: 1 to 999999 seconds	Not set	Not set	Only one parameter can be set in the TFS-400B.
S2	Association establishment response waiting time	default: 30 seconds Range: 1 to 999999 seconds	default: Once Range: 0 to 999999	default: 30 seconds Range: 0 to 999999 seconds	Only one parameter can be set in the TFS-400B.
S3	Service request waiting time	default: 180 seconds Range: 1 to 999999 seconds	Not set	Not set	Only one parameter can be set in the TFS-400B.
S4	Service response waiting time	default: 180 seconds Range: 1 to 999999 seconds	Not set	Not set	Can be set for each provided service
S5	Association release waiting time	default: 5 seconds Range: 1 to 999999 seconds	Not set	Not set	Only one parameter can be set in the TFS-400B.

6.2.2 Warning Status Criteria

The warning status criteria can be set for each station and each service, for Export AE.

6.2.2.1 CR Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 16

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.2 CT Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 17

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.3 MR Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 18

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.4 NM Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 19

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.5 SC Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 20

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.6 US Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 21

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.7 US Multi-frame Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 22

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.8 XA Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 23

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.2.2.9 XRF Image Storage

If SUCCESS is set, the TFS-400B judges that the image transfer succeeded.

If FAIL is set, the TFS-400B judges that the image transfer failed.

Table 24

Warning response	Default	Parameter setting range
Coercion of Data Elements	FAIL	SUCCESS or FAIL
Data Set does not match SOP Class	FAIL	SUCCESS or FAIL
Elements discarded	FAIL	SUCCESS or FAIL

6.3 Implementation Information and Maximum Reception PDU Size

The default values for the TFS-400B are used for the Implementation Class UID, the Implementation Version name, and the Maximum length received. They cannot be changed.

Table 25

Parameter	Default
Implementation Class UID	1.2.392.200036.9116.7.3.10
Implementation Version Name	TM_OT_TFS_1.0
Maximum length received	0x10000 (64 Kbytes)

7 Support of Extended Character Sets

This product supports the following character sets:

- ISO-IR 6 (default) ISO646
- ISO-IR 13 (Japanese) JIS X 0201 (Katakana) (Storage SCU/SCP only)
- ISO-IR 14 (Japanese) JIS X 0201 (Romaji) (Storage SCU/SCP only)
- ISO-IR 87 (Japanese) JIS X 0208 (Kanji) (Storage SCU/SCP only)

If Import AE receives image data that contains characters from an unsupported character set, Import AE will respond with "Cannot understand" to the C-STORE request. (See subsection 3.2.3.2.2.1)

If Import AE receives search request that contains characters from an unsupported character set, Import AE will respond with "Unable to process" to the C-FIND request. (See subsection 3.2.3.3.2.1)

8 Information Object Definition - Storage SCU

8.1 Entity Module Definitions

The information modules for TFS-400B are defined below.

8.1.1 CR IMAGE IOD Modules

Table 26

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
	CR Series Module	8.2.5	M
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Pixel Module	8.2.13	M
	Contrast/bolus Module	8.2.15	C
	CR Image Module	8.2.26	M
	Overlay Plane Module	8.2.45	U
	Curve Module	8.2.47	U
	Modality LUT Module	8.2.48	U
	VOI LUT Module	8.2.49	U
	SOP Common Module	8.2.50	M

¹ M=Mandatory, C=Conditional, U=User option

8.1.2 CT IMAGE IOD Modules

Table 27

Information Entity	Module	Reference	Usage¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
Frame of Reference	Frame of Reference Module	8.2.7	M
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Plane Module	8.2.12	M
	Image Pixel Module	8.2.13	M
	Contrast/bolus Module	8.2.15	C
	CT Image Module	8.2.27	M
	Overlay Plane Module	8.2.45	U
	VOI LUT Module	8.2.49	U
	SOP Common Module	8.2.50	M

¹ M=Mandatory, C=Conditional, U=User option

8.1.3 MR IMAGE IOD Modules

Table 28

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
Frame of Reference	Frame of Reference Module	8.2.7	M
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Plane Module	8.2.12	M
	Image Pixel Module	8.2.13	M
	Contrast/bolus Module	8.2.15	C
	MR Image Module	8.2.28	M
	Overlay Plane Module	8.2.45	U
	VOI LUT Module	8.2.49	U
	SOP Common Module	8.2.50	M

¹ M=Mandatory, C=Conditional, U=User option

8.1.4 NM IMAGE IOD Modules

Table 29

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
	NM Series Module	8.2.6	M
Frame of Reference	Frame of Reference Module	8.2.7	U
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Pixel Module	8.2.13	M
	NM Image Pixel Module	8.2.14	M
	Multi-frame Module	8.2.19	M
	NM Multi-frame Module	8.2.20	M
	NM Image Module	8.2.29	M
	NM Isotope Module	8.2.31	M
	NM Detector Module	8.2.32	M
	NM TOMO Acquisition Module	8.2.33	C
	NM Multi-gated Acquisition Module	8.2.34	C
	NM Phase Module	8.2.35	C
	NM Reconstruction Module	8.2.36	C
	Overlay Plane Module	8.2.45	U
	Multi-frame Overlay Module	8.2.46	U
	Curve Module	8.2.47	U
VOI LUT Module	8.2.49	U	
SOP Common Module	8.2.50	M	

¹ M=Mandatory, C=Conditional, U=User option

8.1.5 SC IMAGE IOD Modules

Table 30

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
Equipment	General Equipment Module	8.2.9	U
	SC Equipment Module	8.2.10	M
Image	General Image Module	8.2.11	M
	Image Pixel Module	8.2.13	M
	SC Image Module	8.2.37	M
	Overlay Plane Module	8.2.45	U
	Modality LUT Module	8.2.48	U
	VOI LUT Module	8.2.49	U
	SOP Common Module	8.2.50	M

¹ M=Mandatory, C=Conditional, U=User option

8.1.6 US IMAGE IOD Modules

Table 31

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
Frame of Reference	Frame of Reference Module	8.2.7	U
	US Frame of Reference Module	8.2.8	C
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Pixel Module	8.2.13	M
	Contrast/Bolus Module	8.2.15	C
	Palette Color Lookup Table Module	8.2.16	C
	US Region Calibration Module	8.2.17	U
	US Image	8.2.30	M
	Overlay Plane Module	8.2.45	U
	VOI LUT Module	8.2.49	U
	SOP Common Module	8.2.50	M
Curve	Curve Identification Module	8.2.51	M
	Curve Module	8.2.47	M
	Audio Module	8.2.52	U
	SOP Common Module	8.2.50	M

¹ M=Mandatory, C=Conditional, U=User option

8.1.7 US MULTI-FRAME IMAGE IOD Modules

Table 32

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
Frame of Reference	Frame of Reference Module	8.2.7	U
	US Frame of Reference Module	8.2.8	C
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Pixel Module	8.2.13	M
	Contrast/Bolus Module	8.2.15	C
	Cine Module	8.2.18	M
	Multi-frame Module	8.2.19	M
	Palette Color Lookup Table Module	8.2.16	C
	US Region Calibration Module	8.2.17	U
	US Image Module	8.2.30	M
	VOI LUT Module	8.2.49	U
	SOP Common Module	8.2.50	M
Curve	Curve Identification Module	8.2.51	M
	Curve Module	8.2.47	M
	Audio Module	8.2.52	U
	SOP Common Module	8.2.50	M

¹ M=Mandatory, C=Conditional, U=User option

8.1.8 XA IMAGE IOD Modules

Table 33

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Pixel Module	8.2.13	M
	Contrast/Bolus Module	8.2.15	C
	Cine Module	8.2.18	C
	Multi-frame Module	8.2.19	C
	Frame Pointers Module	8.2.21	U
	Mask Module	8.2.22	C
	Display Shutter Module	8.2.23	U
	Device Module	8.2.24	U
	Therapy Module	8.2.25	U
	X-Ray Image Module	8.2.38	M
	X-Ray Acquisition Module	8.2.39	M
	X-Ray Collimator Module	8.2.40	U
	X-Ray Table Module	8.2.41	C
	XA Positioner Module	8.2.44	M
	Overlay Plane Module	8.2.45	U
	Multi-frame Overlay Module	8.2.46	C
	Curve Module	8.2.47	U
	Modality LUT Module	8.2.48	C/U
	VOI LUT Module	8.2.49	U
SOP Common Module	8.2.50	M	

¹ M=Mandatory, C=Conditional, U=User option

8.1.9 XRF IMAGE IOD Modules

Table 34

Information Entity	Module	Reference	Usage ¹
Patient	Patient Module	8.2.1	M
Study	General Study Module	8.2.2	M
	Patient Study Module	8.2.3	U
Series	General Series Module	8.2.4	M
Equipment	General Equipment Module	8.2.9	M
Image	General Image Module	8.2.11	M
	Image Pixel Module	8.2.13	M
	Contrast/Bolus Module	8.2.15	C
	Cine Module	8.2.18	C
	Multi-frame Module	8.2.19	C
	Frame Pointers Module	8.2.21	U
	Mask Module	8.2.22	C
	X-Ray Image Module	8.2.38	M
	X-Ray Acquisition Module	8.2.39	M
	X-Ray Collimator Module	8.2.40	U
	Display Shutter Module	8.2.23	U
	Therapy Module	8.2.25	U
	Device Module	8.2.24	U
	X-Ray Table Module	8.2.41	U
	XRF Positioner Module	8.2.42	U
	XRF Tomo Acquisition Module	8.2.43	C
	Overlay Plane Module	8.2.45	U
	Multi-frame Overlay Module	8.2.46	C
	Curve Module	8.2.47	U
	Modality LUT Module	8.2.48	C/U
VOI LUT Module	8.2.49	U	
SOP Common Module	8.2.50	M	

¹ M=Mandatory, C=Conditional, U=User option

8.2 Information Object Definitions

8.2.1 Patient Module

Table 35

Attribute Name	Tag	Type	Attribute Description
Patient's Name	(0010,0010)	2	Length=0 when no entry is made
Patient ID	(0010,0020)	2	Length=0 when no entry is made
Patient's Birth Date	(0010,0030)	2	Length=0 when no entry is made
Patient's Sex	(0010,0040)	2	Length=0 when no entry is made
Referenced Patient Sequence	(0008,1120)	3	Not set when no entry is made
> Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
> Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Patient's Birth Time	(0010,0032)	3	Not set when no entry is made
Other Patient IDs	(0010,1000)	3	Not set when no entry is made
Other Patient Names	(0010,1001)	3	Not set when no entry is made
Ethnic Group	(0010,2160)	3	Not set when no entry is made
Patient Comments	(0010,4000)	3	Not set when no entry is made

8.2.2 General Study Module

Table 36

Attribute Name	Tag	Type	Attribute Description
Study Instance UID	(0020,000D)	1	Always set
Study Date	(0008,0020)	2	Length=0 when no entry is made
Study Time	(0008,0030)	2	Length=0 when no entry is made
Referring Physician's Name	(0008,0090)	2	Length=0 when no entry is made
Study ID	(0020,0010)	2	Length=0 when no entry is made
Accession Number	(0008,0050)	2	Length=0 when no entry is made
Study Description	(00018,1030)	3	Not set when no entry is made
Physician(s) of Record	(0008,1048)	3	Not set when no entry is made
Name of Physician(s) Reading Study	(0008,1060)	3	Not set when no entry is made
Referenced Study Sequence	(0008,1110)	3	Not set when no entry is made
> Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
> Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set

8.2.3 Patient Study Module

Table 37

Attribute Name	Tag	Type	Attribute Description
Admitting Diagnoses Description	(0008,1080)	3	Not set when no entry is made
Patient's Age	(0010,1010)	3	Not set when no entry is made
Patient's Size	(0010,1020)	3	Not set when no entry is made
Patient's Weight	(0010,1030)	3	Not set when no entry is made
Occupation	(0010,2180)	3	Not set when no entry is made
Additional Patient's History	(0010,21B0)	3	Not set when no entry is made

8.2.4 General Series Module

Table 38

Attribute Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	Always set
Series Instance UID	(0020,000E)	1	Always set
Series Number	(0020,0011)	2	Length=0 when no entry is made
Laterality	(0020,0060)	2C	If the setting conditions are met, Length=0 when no entry is made
Series Date	(0008,0021)	3	Not set when no entry is made
Series Time	(0008,0031)	3	Not set when no entry is made
Performing Physicians' Name	(0008,1050)	3	Not set when no entry is made
Protocol Name	(0018,1030)	3	Not set when no entry is made
Series Description	(0008,103E)	3	Not set when no entry is made
Operator's Name	(0008,1070)	3	Not set when no entry is made
Referenced Study Component Sequence	(0008,1111)	3	Not set when no entry is made
>Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
>Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Body Part Examined	(0018,0015)	3	Not set when no entry is made
Patient Position	(0018,5100)	2C	If the setting conditions are met, Length=0 when no entry is made
Smallest Pixel Value in Series	(0028,0108)	3	Not set when no entry is made
Largest Pixel Value in Series	(0028,0109)	3	Not set when no entry is made

8.2.5 CR Series Module

Table 39

Attribute Name	Tag	Type	Attribute Description
Body Part Examined	(0018,0015)	2	Length=0 when no entry is made
View Position	(0018,5101)	2	Length=0 when no entry is made
Filter Type	(0018,1160)	3	Not set when no entry is made
Collimator/grid Name	(0018,1180)	3	Not set when no entry is made
Focal Spot(s)	(0018,1190)	3	Not set when no entry is made
Plate Type	(0018,1260)	3	Not set when no entry is made
Phosphor Type	(0018,1261)	3	Not set when no entry is made

8.2.6 NM Series Module

Table 40

Attribute Name	Tag	Type	Attribute Description
Patient Orientation Code Sequence	(0054,0410)	2	Length=0 when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Patient Orientation Modifier Code Sequence	(0054,0412)	2C	If the setting conditions are met, Length=0 when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
Patient Gantry Relationship Code Sequence	(0054,0414)	2	Length=0 when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made

8.2.7 Frame of Reference Module

Table 41

Attribute Name	Tag	Type	Attribute Description
Frame of Reference UID	(0020,0052)	1	Always set
Position Reference Indicator	(0020,1040)	2	Length=0 when no entry is made

8.2.8 US Frame of Reference Module

Table 42

Attribute Name	Tag	Type	Attribute Description
Region Location Min x_0	(0018,6018)	1	Always set
Region Location Min y_0	(0018,601A)	1	Always set
Region Location Max x_1	(0018,601C)	1	Always set
Region Location Max y_1	(0018,601E)	1	Always set
Physical Units X Direction	(0018,6024)	1	Always set
Physical Units Y Direction	(0018,6026)	1	Always set
Physical Delta X	(0018,602C)	1	Always set
Physical Delta Y	(0018,602E)	1	Always set
Reference Pixel x_0	(0018,6020)	3	Not set when no entry is made
Reference Pixel y_0	(0018,6022)	3	Not set when no entry is made
Ref. Pixel Physical Value X	(0018,6028)	3	Not set when no entry is made
Ref. Pixel Physical Value Y	(0018,602A)	3	Not set when no entry is made

8.2.9 General Equipment Module

Table 43

Attribute Name	Tag	Type	Attribute Description
Manufacturer	(0008,0070)	2	Length=0 when no entry is made
Institution Name	(0008,0080)	3	Not set when no entry is made
Institution Address	(0008,0081)	3	Not set when no entry is made
Station Name	(0008,1010)	3	Not set when no entry is made
Institutional Department Name	(0008,1040)	3	Not set when no entry is made
Manufacturer's Model Name	(0008,1090)	3	Not set when no entry is made
Device Serial Number	(0018,1000)	3	Not set when no entry is made
Software Versions	(0018,1020)	3	Not set when no entry is made
Spatial Resolution	(0018,1050)	3	Not set when no entry is made
Date of Last Calibration	(0018,1200)	3	Not set when no entry is made
Time of Last Calibration	(0018,1201)	3	Not set when no entry is made
Pixel Padding Value	(0028,0120)	3	Not set when no entry is made

8.2.10 SC Equipment Module

Table 44

Attribute Name	Tag	Type	Attribute Description
Conversion Type	(0008,0064)	1	Always set
Modality	(0008,0060)	3	Not set when no entry is made
Secondary Capture Device ID	(0018,1010)	3	Not set when no entry is made
Secondary Capture Device Manufacturer	(0018,1016)	3	Not set when no entry is made
Secondary Capture Device Manufacturer's Model Name	(0018,1018)	3	Not set when no entry is made
Secondary Capture Device Software Version(s)	(0018,1019)	3	Not set when no entry is made
Video Image Format Acquired	(0018,1022)	3	Not set when no entry is made
Digital Image Format Acquired	(0018,1023)	3	Not set when no entry is made

8.2.11 General Image Module

Table 45

Attribute Name	Tag	Type	Attribute Description
Image Number	(0020,0013)	2	Length=0 when no entry is made
Patient Orientation	(0020,0020)	2C	If the setting conditions are met, Length=0 when no entry is made
Image Date	(0008,0023)	2C	If the setting conditions are met, Length=0 when no entry is made
Image Time	(0008,0033)	2C	If the setting conditions are met, Length=0 when no entry is made
Image Type	(0008,0008)	1	Always set
Acquisition Number	(0020,0012)	3	Not set when no entry is made
Acquisition Date	(0008,0022)	3	Not set when no entry is made
Acquisition Time	(0008,0032)	3	Not set when no entry is made
Referenced Image Sequence	(0008,1140)	3	Not set when no entry is made
>Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
>Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Derivation Description	(0008,2111)	3	Not set when no entry is made
Source Image Sequence	(0008,2112)	3	Not set when no entry is made
>Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
>Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Image in Acquisition	(0020,1002)	3	Not set when no entry is made
Image Comments	(0020,4000)	3	Not set when no entry is made
Lossy Image Compression	(0028,2110)	3	Not set when no entry is made

8.2.12 Image Plane Module

Table 46

Attribute Name	Tag	Type	Attribute Description
Pixel Spacing	(0028,0030)	1	Always set
Image Orientation (Patient)	(0020,0037)	1	Always set
Image Position (Patient)	(0020,0032)	1	Always set
Slice Thickness	(0018,0050)	2	Length=0 when no entry is made
Slice Location	(0020,1041)	3	Not set when no entry is made

8.2.13 Image Pixel Module

Table 47

Attribute Name	Tag	Type	Attribute Description
Samples per Pixel	(0028,0002)	1	Always set
Photometric Interpretation	(0028,0004)	1	Always set
Rows	(0028,0010)	1	Always set
Columns	(0028,0011)	1	Always set
Bits Allocated	(0028,0100)	1	Always set
Bits Stored	(0028,0101)	1	Always set
High Bit	(0028,0102)	1	Always set
Pixel Representation	(0028,0103)	1	Always set
Pixel Data	(7FE0,0010)	1	Always set
Planar Configuration	(0028,0006)	1C	Always set when the setting conditions are met
Pixel Aspect Ratio	(0028,0034)	1C	Always set when the setting conditions are met
Smallest Image Pixel Value	(0028,0106)	3	Not set when no entry is made
Largest Image Pixel Value	(0028,0107)	3	Not set when no entry is made
Red Palette Color Lookup Table Descriptor	(0028,1101)	1C	Always set when the setting conditions are met
Green Palette Color Lookup Table Descriptor	(0028,1102)	1C	Always set when the setting conditions are met
Blue Palette Color Lookup Table Descriptor	(0028,1103)	1C	Always set when the setting conditions are met
Red Palette Color Lookup Table Data	(0028,1201)	1C	Always set when the setting conditions are met
Green Palette Color Lookup Table Data	(0028,1202)	1C	Always set when the setting conditions are met
Blue Palette Color Lookup Table Data	(0028,1203)	1C	Always set when the setting conditions are met

8.2.14 NM Image Pixel Module

Table 48

Attribute Name	Tag	Type	Attribute Description
Samples per Pixel	(0028,0002)	1	Always set
Photometric Interpretation	(0028,0004)	1	Always set
Bits Allocated	(0028,0100)	1	Always set
Bits Stored	(0028,0101)	1	Always set
High Bit	(0028,0102)	1	Always set
Pixel Spacing	(0028,0030)	2	Length=0 when no entry is made

8.2.15 Contrast/Bolus Module

Table 49

Attribute Name	Tag	Type	Attribute Description
Contrast/Bolus Agent	(0018,0010)	2	Length=0 when no entry is made
Contrast/Bolus Agent Sequence	(0018,0012)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
Contrast/Bolus Route	(0018,1040)	3	Not set when no entry is made
Contrast/Bolus Administration Route Sequence	(0018,0014)	3	Not set when no entry is made
Code Value	(0008,0100)	1C	Always set when the setting conditions are met
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is sett
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Additional Drug Sequence	(0018,002A)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
Contrast/Bolus Volume	(0018,1041)	3	Not set when no entry is made
Contrast/Bolus Start Time	(0018,1042)	3	Not set when no entry is made
Contrast/Bolus Stop Time	(0018,1043)	3	Not set when no entry is made
Contrast/Bolus Total Dose	(0018,1044)	3	Not set when no entry is made
Contrast Flow Rate(s)	(0018,1046)	3	Not set when no entry is made
Contrast Flow Duration(s)	(0018,1047)	3	Not set when no entry is made
Contrast/Bolus Ingredient	(0018,1048)	3	Not set when no entry is made
Contrast/Bolus Ingredient Concentration	(0018,1049)	3	Not set when no entry is made

8.2.16 Palette Color Lookup Table Module

Table 50

Attribute Name	Tag	Type	Attribute Description
Red Palette Color Lookup Table Descriptor	(0028,1101)	1C	Always set when the setting conditions are met
Green Palette Color Lookup Table Descriptor	(0028,1102)	1C	Always set when the setting conditions are met
Blue Palette Color Lookup Table Descriptor	(0028,1103)	1C	Always set when the setting conditions are met
Palette Color Lookup Table UID	(0028,1199)	3	Not set when no entry is made
Red Palette Color Lookup Table Data	(0028,1201)	1C	Always set when the setting conditions are met
Green Palette Color Lookup Table Data	(0028,1202)	1C	Always set when the setting conditions are met
Blue Palette Color Lookup Table Data	(0028,1203)	1C	Always set when the setting conditions are met
Segmented Red Palette Color Lookup Table Data	(0028,1221)	1C	Always set when the setting conditions are met
Segmented Green Palette Color Lookup Table Data	(0028,1222)	1C	Always set when the setting conditions are met
Segmented Red Palette Color Lookup Table Data	(0028,1223)	1C	Always set when the setting conditions are met

8.2.17 US Region Calibration Module

Table 51

Attribute Name	Tag	Type	Attribute Description
Sequence of Ultrasound Regions	(0018,6011)	1	Always set
>Region Location Min x_0	(0018,6018)	1	Always set
>Region Location Min y_0	(0018,601A)	1	Always set
>Region Location Max x_1	(0018,601C)	1	Always set
>Region Location Max y_1	(0018,601E)	1	Always set
>Physical Units X Direction	(0018,6024)	1	Always set
>Physical Units Y Direction	(0018,6026)	1	Always set
>Physical Delta X	(0018,602C)	1	Always set
>Physical Delta Y	(0018,602E)	1	Always set
>Reference Pixel x_0	(0018,6020)	3	Not set when no entry is made
>Reference Pixel y_0	(0018,6022)	3	Not set when no entry is made
>Ref. Pixel Physical Value X	(0018,6028)	3	Not set when no entry is made
>Ref. Pixel Physical Value Y	(0018,602A)	3	Not set when no entry is made
>Region Spatial Format	(0018,6012)	1	Always set
>Region Data Type	(0018,6014)	1	Always set
>Region Flags	(0018,6016)	1	Always set
>Pixel Component Organization	(0018,6044)	1C	Always set when the setting conditions are met
>Pixel Component Mask	(0018,6046)	1C	Always set when the setting conditions are met
>Pixel Component Range Start	(0018,6048)	1C	Always set when the setting conditions are met
>Pixel Component Range Stop	(0018,604A)	1C	Always set when the setting conditions are met
>Pixel Component Physical Units	(0018,604C)	1C	Always set when the setting conditions are met
>Pixel Component Data Type	(0018,604E)	1C	Always set when the setting conditions are met
>Number of Table Break Points	(0018,6050)	1C	Always set when the setting conditions are met
>Table of X Break Points	(0018,6052)	1C	Always set when the setting conditions are met

To be continued

>Table of Y Break Points	(0018,6054)	1C	Always set when the setting conditions are met
>Number of Table Entries	(0018,6056)	1C	Always set when the setting conditions are met
>Table of Pixel Values	(0018,6058)	1C	Always set when the setting conditions are met
>Table of Parameter Values	(0018,605A)	1C	Always set when the setting conditions are met
>Tranducer Frequency	(0018,6030)	3	Not set when no entry is made
>Pulse Repetition Frequency	(0018,6032)	3	Not set when no entry is made
>Doppler Correction Angle	(0018,6034)	3	Not set when no entry is made
>Steering Angle	(0018,6036)	3	Not set when no entry is made
>Doppler Sample Volume X Position	(0018,6038)	3	Not set when no entry is made
>Doppler Sample Volume Y Position	(0018,603A)	3	Not set when no entry is made
>TM-Line Position x_0	(0018,603C)	3	Not set when no entry is made
>TM-Line Position y_0	(0018,603E)	3	Not set when no entry is made
>TM-Line Position x_1	(0018,6040)	3	Not set when no entry is made
>TM-Line Position y_1	(0018,6042)	3	Not set when no entry is made

8.2.18 Cine Module

Table 52

Attribute Name	Tag	Type	Attribute Description
Preferred Playback Sequencing	(0018,1244)	3	Not set when no entry is made
Frame Time	(0018,1063)	1C	Always set when the setting conditions are met
Frame Time Vector	(0018,1065)	1C	Always set when the setting conditions are met
Start Trim	(0008,2142)	3	Not set when no entry is made
Stop Trim	(0008,2143)	3	Not set when no entry is made
Recommended Display Frame Rate	(0008,2144)	3	Not set when no entry is made
Cine Rate	(0018,0040)	3	Not set when no entry is made
Frame Delay	(0018,1066)	3	Not set when no entry is made
Effective Series Duration	(0018,0072)	3	Not set when no entry is made
Actual Frame Duration	(0018,1242)	3	Not set when no entry is made

8.2.19 Multi-Frame Module

Table 53

Attribute Name	Tag	Type	Attribute Description
Number of Frames	(0028,0008)	1	Always set
Frame Incremental Pointer	(0028,0009)	1	Always set

8.2.20 NM Multi-Frame Module

Table 54

Attribute Name	Tag	Type	Attribute Description
Frame Increment Pointer	(0028,0009)	1	Always set
Energy Window Vector	(0054,0010)	1C	Always set when the setting conditions are met
Number of Energy Windows	(0054,0011)	1	Always set
Detector Vector	(0054,0020)	1C	Always set when the setting conditions are met
Number of Detectors	(0054,0021)	1	Always set
Phase Vector	(0054,0030)	1C	Always set when the setting conditions are met
Number of Phases	(0054,0031)	1C	Always set when the setting conditions are met
Rotation Vector	(0054,0050)	1C	Always set when the setting conditions are met
Number of Rotations	(0054,0051)	1C	Always set when the setting conditions are met
R-R Interval Vector	(0054,0060)	1C	Always set when the setting conditions are met
Number of R-R Intervals	(0054,0061)	1C	Always set when the setting conditions are met
Time Slot Vector	(0054,0070)	1C	Always set when the setting conditions are met
Number of Time Slots	(0054,0071)	1C	Always set when the setting conditions are met
Slice Vector	(0054,0080)	1C	Always set when the setting conditions are met
Number of Slices	(0054,0081)	1C	Always set when the setting conditions are met
Angular View Vector	(0054,0090)	1C	Always set when the setting conditions are met
Time Slice Vector	(0054,0100)	1C	Always set when the setting conditions are met

8.2.21 Frame Pointers Module

Table 55

Attribute Name	Tag	Type	Attribute Description
Representative Frame Number	(0028,6010)	3	Not set when no entry is made
Frame Numbers of Interest(FOI)	(0028,6020)	3	Not set when no entry is made
Frame(s) of Interest Description	(0028,6022)	3	Not set when no entry is made

8.2.22 Mask Module

Table 56

Attribute Name	Tag	Type	Attribute Description
Mask Subtraction Sequence	(0028,6100)	1	Always set
> Mask Operation	(0028,6101)	1	Always set
> Applicable Frame Range	(0028,6102)	3	Not set when no entry is made
> Mask Frame Numbers	(0028,6110)	1C	Always set when the sequence is set
> Contrast Frame Averaging	(0028,6112)	3	Not set when no entry is made
> Mask Sub-pixel Shift	(0028,6114)	3	Not set when no entry is made
> TID Offset	(0028,6120)	2C	If the setting conditions are met, Length=0 when no entry is made
> Mask Operation Explanation	(0028,6190)	3	Not set when no entry is made
Recommended Viewing Mode	(0028,1090)	2	Length=0 when no entry is made

8.2.23 Display Shutter Module

Table 57

Attribute Name	Tag	Type	Attribute Description
Shutter Shape	(0018,1600)	1	Always set
Shutter Left Vertical Edge	(0018,1602)	1C	Always set when the setting conditions are met
Shutter Right Vertical Edge	(0018,1604)	1C	Always set when the setting conditions are met
Shutter Upper Horizontal Edge	(0018,1606)	1C	Always set when the setting conditions are met
Shutter Lower Horizontal Edge	(0018,1608)	1C	Always set when the setting conditions are met
Center of Circular Shutter	(0018,1610)	1C	Always set when the setting conditions are met
Radius of Circular Shutter	(0018,1612)	1C	Always set when the setting conditions are met
Vertices of the Polygonal Shutter	(0018,1620)	1C	Always set when the setting conditions are met

8.2.24 Device Module

Table 58

Attribute Name	Tag	Type	Attribute Description
Device Sequence	(0050,0010)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Device Length	(0050,0014)	3	Not set when no entry is made
> Device Diameter	(0050,0016)	3	Not set when no entry is made
> Device Diameter Units	(0050,0017)	2C	If the setting conditions are met, Length=0 when no entry is made
> Device Volume	(0050,0018)	3	Not set when no entry is made
> Inter-Marker Distance	(0050,0019)	3	Not set when no entry is made
> Device Description	(0050,0020)	3	Not set when no entry is made

8.2.25 Therapy Module

Table 59

Attribute Name	Tag	Type	Attribute Description
Interventional Therapy Sequence	(0018,0036)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Interventional Status	(0018,0038)	2	Length=0 when no entry is made
> Intervention Drug Code Sequence	(0018,0029)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Intervention Drug Start Time	(0018,0035)	3	Not set when no entry is made
> Intervention Drug Stop Time	(0018,0027)	3	Not set when no entry is made
> Administration Route Code Sequence	(0054,0302)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Therapy Description	(0018,0039)	3	Not set when no entry is made

8.2.26 CR Image Module

Table 60

Attribute Name	Tag	Type	Attribute Description
KVP	(0018,0060)	3	Not set when no entry is made
Plate ID	(0018,1004)	3	Not set when no entry is made
Distance Source to Detector	(0018,1110)	3	Not set when no entry is made
Distance Source to Patient	(0018,1111)	3	Not set when no entry is made
Exposure Time	(0018,1150)	3	Not set when no entry is made
X-ray Tube Current	(0018,1151)	3	Not set when no entry is made
Exposure	(0018,1152)	3	Not set when no entry is made
Generator Power	(0018,1170)	3	Not set when no entry is made
Acquisition Device Processing Description	(0018,1400)	3	Not set when no entry is made
Acquisition Device Processing Code	(0018,1401)	3	Not set when no entry is made
Cassette Orientation	(0018,1402)	3	Not set when no entry is made
Cassette Size	(0018,1403)	3	Not set when no entry is made
Exposures on Plate	(0018,1404)	3	Not set when no entry is made
Relative X-ray Exposure	(0018,1405)	3	Not set when no entry is made
Sensitivity	(0018,6000)	3	Not set when no entry is made

8.2.27 CT Image Module

Table 61

Attribute Name	Tag	Type	Attribute Description
Image Type	(0008,0008)	1	Always set
Samples per Pixel	(0028,0002)	1	Always set
Photometric Interpretation	(0028,0004)	1	Always set
Bits Allocated	(0028,0100)	1	Always set
Bits Stored	(0028,0101)	1	Always set
High Bit	(0028,0102)	1	Always set
Rescale Intercept	(0028,1052)	1	Always set
Rescale Slope	(0028,1053)	1	Always set
KVP	(0018,0060)	2	Length=0 when no entry is made
Acquisition Number	(0020,0012)	2	Length=0 when no entry is made
Scan Options	(0018,0022)	3	Not set when no entry is made
Data Collection Diameter	(0018,0090)	3	Not set when no entry is made
Reconstruction Diameter	(0018,1100)	3	Not set when no entry is made
Distance Source to Detector	(0018,1110)	3	Not set when no entry is made
Distance Source to Patient	(0018,1111)	3	Not set when no entry is made
Gantry/Detector Tilt	(0018,1120)	3	Not set when no entry is made
Table Height	(0018,1130)	3	Not set when no entry is made
Rotation Direction	(0018,1140)	3	Not set when no entry is made
Exposure Time	(0018,1150)	3	Not set when no entry is made
X-ray Tube Current	(0018,1151)	3	Not set when no entry is made
Exposure	(0018,1152)	3	Not set when no entry is made
Filter Type	(0018,1160)	3	Not set when no entry is made
Generator Power	(0018,1170)	3	Not set when no entry is made
Focal Spot	(0018,1190)	3	Not set when no entry is made
Convolution Kernel	(0018,1210)	3	Not set when no entry is made

8.2.28 MR Image Module

Table 62

Attribute Name	Tag	Type	Attribute Description
Image Type	(0008,0008)	1	Always set
Samples per Pixel	(0028,0002)	1	Always set
Photometric Interpretation	(0028,0004)	1	Always set
Bits Allocated	(0028,0100)	1	Always set
Scanning Sequence	(0018,0020)	1	Always set
Sequence Variant	(0018,0021)	1	Always set
Scan Options	(0018,0022)	2	Length=0 when no entry is made
MR Acquisition Type	(0018,0023)	2	Length=0 when no entry is made
Repetition Time	(0018,0080)	2C	f the setting conditions are met, Length=0 when no entry is made
Echo Time	(0018,0081)	2	Length=0 when no entry is made
Echo Train Length	(0018,0091)	2	Length=0 when no entry is made
Inversion Time	(0018,0082)	2C	f the setting conditions are met, Length=0 when no entry is made
Trigger Time	(0018,1060)	2C	f the setting conditions are met, Length=0 when no entry is made
Sequence Name	(0018,0024)	3	Not set when no entry is made
Angio Flag	(0018,0025)	3	Not set when no entry is made
Number of Averages	(0018,0083)	3	Not set when no entry is made
Imaging Frequency	(0018,0084)	3	Not set when no entry is made
Imaged Nucleus	(0018,0085)	3	Not set when no entry is made
Echo Number	(0018,0086)	3	Not set when no entry is made
Magnetic Field Strength	(0018,0087)	3	Not set when no entry is made
Spacing Between Slices	(0018,0088)	3	Not set when no entry is made
Number of Phase Encoding Steps	(0018,0089)	3	Not set when no entry is made
Percent Sampling	(0018,0093)	3	Not set when no entry is made
Percent Phase Field of View	(0018,0094)	3	Not set when no entry is made
Pixel Bandwidth	(0018,0095)	3	Not set when no entry is made
Nominal Interval	(0018,1062)	3	Not set when no entry is made
Beat Rejection Flag	(0018,1080)	3	Not set when no entry is made
Low R-R Value	(0018,1081)	3	Not set when no entry is made
High R-R Value	(0018,1082)	3	Not set when no entry is made

To be continued

Intervals Acquired	(0018,1083)	3	Not set when no entry is made
Intervals Rejected	(0018,1084)	3	Not set when no entry is made
PVC Rejection	(0018,1085)	3	Not set when no entry is made
Skip Beats	(0018,1086)	3	Not set when no entry is made
Heart Rate	(0018,1088)	3	Not set when no entry is made
Cardiac Number of Images	(0018,1090)	3	Not set when no entry is made
Trigger Window	(0018,1094)	3	Not set when no entry is made
Reconstruction Diameter	(0018,1100)	3	Not set when no entry is made
Receiving Coil	(0018,1250)	3	Not set when no entry is made
Transmitting Coil	(0018,1251)	3	Not set when no entry is made
Acquisition Matrix	(0018,1310)	3	Not set when no entry is made
Phase Encoding Direction	(0018,1312)	3	Not set when no entry is made
Flip Angle	(0018,1314)	3	Not set when no entry is made
SAR	(0018,1316)	3	Not set when no entry is made
Variable Flip Angle Flag	(0018,1315)	3	Not set when no entry is made
dB/dt	(0018,1318)	3	Not set when no entry is made
Temporal Position Identifier	(0020,0100)	3	Not set when no entry is made
Number of Temporal Positions	(0020,0105)	3	Not set when no entry is made
Temporal Resolution	(0020,0110)	3	Not set when no entry is made

8.2.29 NM Image Module

Table 63

Attribute Name	Tag	Type	Attribute Description
Image Type	(0008,0008)	1	Always set
Image ID	(0054,0400)	3	Not set when no entry is made
Lossy Image Compression	(0028,2110)	1C	Always set when the setting conditions are met
Counts Accumulated	(0018,0070)	2	Length=0 when no entry is made
Acquisition Termination Condition	(0018,0071)	3	Not set when no entry is made
Table Height	(0018,1130)	3	Not set when no entry is made
Table Traverse	(0018,1131)	3	Not set when no entry is made
Actual Frame Duration	(0018,1242)	1C	Always set when the setting conditions are met
Count Rate	(0018,1243)	3	Not set when no entry is made
Processing Function	(0018,5020)	3	Not set when no entry is made
Corrected Image	(0028,0051)	3	Not set when no entry is made
Whole Body Technique	(0018,1301)	3	Not set when no entry is made
Scan Velocity	(0018,1300)	2C	If the setting conditions are met, Length=0 when no entry is made
Scan Length	(0018,1302)	2C	If the setting conditions are met, Length=0 when no entry is made
Referenced Overlay Sequence	(0008,1130)	3	Not set when no entry is made
> Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
> Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Referenced Curve Sequence	(0008,1145)	3	Not set when no entry is made
> Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
> Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Trigger Source or Type	(0018,1061)	3	Not set when no entry is made
Anatomic Region Sequence	(0008,2218)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Anatomic Region Modifier Sequence	(0008,2220)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set

To be continued

>> Code Meaning	(0008,0104)	3	Not set when no entry is made
Primary Anatomic Structure Sequence	(0008,2228)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Primary Anatomic Structure Modifier Sequence	(0008,2230)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made

8.2.30 US Image Module

Table 64

Attribute Name	Tag	Type	Attribute Description
Samples Per Pixel	(0028,0002)	1	Always set
Photometric Interpretation	(0028,0004)	1	Always set
Bits Allocated	(0028,0100)	1	Always set
Bits Stored	(0028,0101)	1	Always set
High Bit	(0028,0102)	1	Always set
Planar Configuration	(0028,0006)	1C	Always set when the sequence is set
Pixel Representation	(0028,0103)	1	Always set
Frame Increment Pointer	(0028,0009)	1C	Always set when the sequence is set
Image Type	(0008,0008)	2	Length=0 when no entry is made
Lossy Image Compression	(0028,2110)	1C	Always set when the sequence is set
Number of Stages	(0008,2124)	2C	If the setting conditions are met, Length=0 when no entry is made
Number of Views in Stage	(0008,212A)	2C	If the setting conditions are met, Length=0 when no entry is made
Ultrasound Color Data Present	(0028,0014)	3	Not set when no entry is made
Referenced Overlay Sequence	(0008,1130)	3	Not set when no entry is made
> Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
> Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Referenced Curve Sequence	(0008,1145)	3	Not set when no entry is made
> Referenced SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
> Referenced SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Stage Name	(0008,2120)	3	Not set when no entry is made
Stage Number	(0008,2122)	3	Not set when no entry is made
View Number	(0008,2128)	3	Not set when no entry is made
Number of Event Timers	(0008,2129)	3	Not set when no entry is made
Event Elapsed Time(s)	(0008,2130)	3	Not set when no entry is made
Event Timer Name(s)	(0008,2132)	3	Not set when no entry is made
Anatomic Region Sequence	(0008,2218)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
>Anatomic Region Modifier Sequence	(0008,2220)	3	Not set when no entry is made

To be continued

>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
Primary Anatomic Structure Modifier Sequence	(0008,2228)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
>Primary Anatomic Structure Modifier Sequence	(0008,2230)	3	Not set when no entry is made
>>Code Value	(0008,0100)	1C	Always set when the sequence is set
>>Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>>Code Meaning	(0008,0104)	3	Not set when no entry is made
Transducer Position Sequence	(0008,2240)	3	Not set when no entry is made
>Code Value	(0008,0100)	1C	Always set when the sequence is set
>Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>Code Meaning	(0008,0104)	3	Not set when no entry is made
> Transducer Position Modifier Sequence	(0008,2242)	3	Not set when no entry is made
>>Code Value	(0008,0100)	1C	Always set when the sequence is set
>>Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>>Code Meaning	(0008,0104)	3	Not set when no entry is made
Transducer Orientation Sequence	(0008,2244)	3	Not set when no entry is made
>Code Value	(0008,0100)	1C	Always set when the sequence is set
>Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>Code Meaning	(0008,0104)	3	Not set when no entry is made
> Transducer Orientation Modifier Sequence	(0008,2246)	3	Not set when no entry is made
>>Code Value	(0008,0100)	1C	Always set when the sequence is set
>>Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>>Code Meaning	(0008,0104)	3	Not set when no entry is made
Trigger Time	(0018,1060)	3	Not set when no entry is made
Nominal Interval	(0018,1062)	3	Not set when no entry is made
Beat Rejection Flag	(0018,1080)	3	Not set when no entry is made
Low R-R Value	(0018,1081)	3	Not set when no entry is made
High R-R Value	(0018,1082)	3	Not set when no entry is made
Heart Rate	(0018,1088)	3	Not set when no entry is made

To be continued

Output Power	(0018,5000)	3	Not set when no entry is made
Transducer Data	(0018,5010)	3	Not set when no entry is made
Transducer Type	(0018,6031)	3	Not set when no entry is made
Focus Depth	(0018,5012)	3	Not set when no entry is made
Preprocessing Function	(0018,5020)	3	Not set when no entry is made
Mechanical Index	(0018,5022)	3	Not set when no entry is made
Bone Thermal Index,	(0018,5024)	3	Not set when no entry is made
Cranial Thermal Index	(0018,5026)	3	Not set when no entry is made
Soft Tissue Thermal Index	(0018,5027)	3	Not set when no entry is made
Soft Tissue-focus Thermal Index	(0018,5028)	3	Not set when no entry is made
Soft Tissue-surface Thermal Index	(0018,5029)	3	Not set when no entry is made
Depth of Scan Field	(0018,5050)	3	Not set when no entry is made
Image Transformation Matrix	(0018,5210)	3	Not set when no entry is made
Image Translation Vector	(0018,5212)	3	Not set when no entry is made
Overlay Subtype	(60xx,0045)	3	Not set when no entry is made

8.2.31 NM Isotope Module

Table 65

Attribute Name	Tag	Type	Attribute Description
Energy Window Information Sequence	(0054,0012)	2	Length=0 when no entry is made
> Energy Window Name	(0054,0018)	3	Not set when no entry is made
> Energy Window Range Sequence	(0054,0013)	3	Not set when no entry is made
>> Energy Window Lower Limit	(0054,0014)	3	Not set when no entry is made
>> Energy Window Upper Limit	(0054,0015)	3	Not set when no entry is made
Radiopharmaceutical Information Sequence	(0054,0016)	2	Length=0 when no entry is made
> Radionuclide Code Sequence	(0054,0300)	2C	If the setting conditions are met, Length=0 when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Radiopharmaceutical Route	(0018,1070)	3	Not set when no entry is made
> Administration Route Code Sequence	(0054,0302)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Radiopharmaceutical Volume	(0018,1071)	3	Not set when no entry is made
> Radiopharmaceutical Start Time	(0018,1072)	3	Not set when no entry is made
> Radiopharmaceutical Stop Time	(0018,1073)	3	Not set when no entry is made
> Radionuclide Total Dose	(0018,1074)	3	Not set when no entry is made
> Calibration Data Sequence	(0054,0306)	3	Not set when no entry is made
>> Energy Window Number	(0054,0308)	1C	Always set when the sequence is set
>> Syringe Counts	(0018,1045)	3	Not set when no entry is made
>> Residual Syringe Counts	(0054,0017)	3	Not set when no entry is made
> Radiopharmaceutical	(0018,0031)	3	Not set when no entry is made
> Radiopharmaceutical Code Sequence	(0054,0304)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set

To be continued

>> Code Meaning	(0008,0104)	3	Not set when no entry is made
Intervention Drug Information Sequence	(0018,0026)	3	Not set when no entry is made
> Intervention Drug Name	(0018,0034)	3	Not set when no entry is made
> Intervention Drug Code Sequence	(0018,0029)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Administration Route Code Sequence	(0054,0302)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Intervention Drug Start Time	(0018,0035)	3	Not set when no entry is made
> Intervention Drug Stop Time	(0018,0027)	3	Not set when no entry is made
> Intervention Drug Dose	(0018,0028)	3	Not set when no entry is made

8.2.32 NM Detector Module

Table 66

Attribute Name	Tag	Type	Attribute Description
Detector Information Sequence	(0054,0022)	2	Length=0 when no entry is made
> Collimator/grid Name	(0018,1180)	3	Not set when no entry is made
> Collimator Type	(0018,1181)	2C	If the setting conditions are met, Length=0 when no entry is made
> Field of View Shape	(0018,1147)	3	Not set when no entry is made
> Field of View Dimension(s)	(0018,1149)	3	Not set when no entry is made
> Focal Distance	(0018,1182)	2C	If the setting conditions are met, Length=0 when no entry is made
> X Focus Center	(0018,1183)	3	Not set when no entry is made
> Y Focus Center	(0018,1184)	3	Not set when no entry is made
> Zoom Center	(0028,0032)	3	Not set when no entry is made
> Zoom Factor	(0028,0031)	3	Not set when no entry is made
> Center of Rotation Offset	(0018,1145)	3	Not set when no entry is made
> Gantry/Detector Tilt	(0018,1120)	3	Not set when no entry is made
> Distance Source to Detector	(0018,1110)	2C	If the setting conditions are met, Length=0 when no entry is made
> Start Angle	(0054,0200)	3	Not set when no entry is made
> Radial Position	(0018,1142)	3	Not set when no entry is made
> Image Orientation (Patient)	(0020,0037)	2C	If the setting conditions are met, Length=0 when no entry is made
> Image Position (Patient)	(0020,0032)	2C	If the setting conditions are met, Length=0 when no entry is made
> View Code Sequence	(0054,0220)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
>> View Angulation Modifier Code Sequence	(0054,0222)	2C	If the setting conditions are met, Length=0 when no entry is made
>>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>>> Code Meaning	(0008,0104)	3	Not set when no entry is made

8.2.33 NM TOMO Acquisition Module

Table 67

Attribute Name	Tag	Type	Attribute Description
Rotation Information Sequence	(0054,0052)	2	Length=0 when no entry is made
> Start Angle	(0054,0200)	1C	Always set when the sequence is set
> Angular Step	(0018,1144)	1C	Always set when the sequence is set
> Rotation Direction	(0018,1140)	1C	Always set when the sequence is set
> Scan Arc	(0018,1143)	1C	Always set when the sequence is set
> Actual Frame Duration	(0018,1242)	1C	Always set when the sequence is set
> Radial Position	(0018,1142)	3	Not set when no entry is made
> Distance Source to Detector	(0018,1110)	2C	If the setting conditions are met, Length=0 when no entry is made
> Number of Frames in Rotation	(0054,0053)	1C	Always set when the sequence is set
> Table Traverse	(0018,1131)	3	Not set when no entry is made
> Table Height	(0018,1130)	3	Not set when no entry is made
Type of Detector Motion	(0054,0202)	3	Not set when no entry is made

8.2.34 NM Multi-Gated Acquisition Module

Table 68

Attribute Name	Tag	Type	Attribute Description
Beat Rejection Flag	(0018,1080)	3	Not set when no entry is made
PVC Rejection	(0018,1085)	3	Not set when no entry is made
Skip Beats	(0018,1086)	3	Not set when no entry is made
Heart Rate	(0018,1088)	3	Not set when no entry is made
Gated Information Sequence	(0054,0062)	2C	If the setting conditions are met, Length=0 when no entry is made
> Trigger Time	(0018,1060)	3	Not set when no entry is made
> Framing Type	(0018,1064)	3	Not set when no entry is made
> Data Information Sequence	(0054,0063)	2C	If the setting conditions are met, Length=0 when no entry is made
>> Frame Time	(0018,1063)	1C	Always set when the sequence is set
>> Nominal Interval	(0018,1062)	3	Not set when no entry is made
>> Low R-R Value	(0018,1081)	3	Not set when no entry is made
>> High R-R Value	(0018,1082)	3	Not set when no entry is made
>> Intervals Acquired	(0018,1083)	3	Not set when no entry is made
>> Intervals Rejected	(0018,1084)	3	Not set when no entry is made
>> Time Slot Information Sequence	(0054,0072)	2C	If the setting conditions are met, Length=0 when no entry is made
>>> Time Slot Time	(0054,0073)	3	Not set when no entry is made

8.2.35 NM Phase Module

Table 69

Attribute Name	Tag	Type	Attribute Description
Phase Information Sequence	(0054,0032)	2C	If the setting conditions are met, Length=0 when no entry is made
> Phase Delay	(0054,0036)	1C	Always set when the sequence is set
> Actual Frame Duration	(0018,1242)	1C	Always set when the sequence is set
> Pause between Frames	(0054,0038)	1C	Always set when the sequence is set
> Number of Frames in Phase	(0054,0033)	1C	Always set when the sequence is set
> Trigger Vector	(0054,0210)	3	Not set when no entry is made
> Number of Triggers in Phase	(0054,0211)	1C	Always set when the sequence is set

8.2.36 NM Reconstruction Module

Table 70

Attribute Name	Tag	Type	Attribute Description
Spacing Between Slices	(0018,0088)	2	Length=0 when no entry is made
Reconstruction Diameter	(0018,1100)	3	Not set when no entry is made
Convolution Kernel	(0018,1210)	3	Not set when no entry is made
Slice Thickness	(0018,0050)	2	Length=0 when no entry is made
Slice Location	(0020,1041)	3	Not set when no entry is made

8.2.37 SC Image Module

Table 71

Attribute Name	Tag	Type	Attribute Description
Date of Secondary Capture	(0018,1012)	3	Not set when no entry is made
Time of Secondary Capture	(0018,1014)	3	Not set when no entry is made

8.2.38 X-Ray Image Module

Table 72

Attribute Name	Tag	Type	Attribute Description
Frame Increment Pointer	(0028,0009)	1C	Always set when the setting conditions are met
Lossy Image Compression	(0008,2110)	1C	Always set when the setting conditions are met
Image Type	(0008,0008)	1	Always set
Pixel Intensity Relationship	(0028,1040)	1	Always set
Samples per Pixel	(0028,0002)	1	Always set
Photometric Interpretation	(0028,0004)	1	Always set
Bits Allocated	(0028,0100)	1	Always set
Bits Stored	(0028,0101)	1	Always set
High Bit	(0028,0102)	1	Always set
Pixel Representation	(0028,0103)	1	Always set
Scan Options	(0018,0022)	3	Not set when no entry is made
Anatomic Region Sequence	(0008,2218)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Anatomic Region Modifier Sequence	(0008,2220)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
Primary Anatomic Structure Sequence	(0008,2228)	3	Not set when no entry is made
> Code Value	(0008,0100)	1C	Always set when the sequence is set
> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
> Code Meaning	(0008,0104)	3	Not set when no entry is made
> Primary Anatomic Structure Modifier Sequence	(0008,2230)	3	Not set when no entry is made
>> Code Value	(0008,0100)	1C	Always set when the sequence is set
>> Coding Scheme Designator	(0008,0102)	1C	Always set when the sequence is set
>> Code Meaning	(0008,0104)	3	Not set when no entry is made
R Wave Pointer	(0028,6040)	3	Not set when no entry is made

To be continued

Referenced Image Sequence	(0008,1140)	1C	Always set when the setting conditions are met
Referenced Image Sequence	(0008,1140)	1C	Always set when the setting conditions are met
> Reference SOP Class UID	(0008,1150)	1C	Always set when the sequence is set
> Reference SOP Instance UID	(0008,1155)	1C	Always set when the sequence is set
Derivation Description	(0008,2111)	3	Not set when no entry is made
Acquisition Device Processing Description	(0018,1400)	3	Not set when no entry is made
Calibration Image	(0050,0004)	3	Not set when no entry is made

8.2.39 X-Ray Acquisition Module

Table 73

Attribute Name	Tag	Type	Attribute Description
KVP	(0018,0060)	2	Length=0 when no entry is made
Radiation Setting	(0018,1155)	1	Always set
X-ray Tube Current	(0018,1151)	2C	If the setting conditions are met, Length=0 when no entry is made
Exposure Time	(0018,1150)	2C	If the setting conditions are met, Length=0 when no entry is made
Exposure	(0018,1152)	2C	If the setting conditions are met, Length=0 when no entry is made
Grid	(0018,1166)	3	Not set when no entry is made
Average Pulse Width	(0018,1154)	3	Not set when no entry is made
Radiation Mode	(0018,115A)	3	Not set when no entry is made
Type of Filters	(0018,1161)	3	Not set when no entry is made
Intensifier Size	(0018,1162)	3	Not set when no entry is made
Field of View Shape	(0018,1147)	3	Not set when no entry is made
Field of View Dimension(s)	(0018,1149)	3	Not set when no entry is made
Imager Pixel Spacing	(0018,1164)	3	Not set when no entry is made
Focal Spot	(0018,1190)	3	Not set when no entry is made
Image Area Dose Product	(0018,115E)	3	Not set when no entry is made

8.2.40 X-Ray Collimator Module

Table 74

Attribute Name	Tag	Type	Attribute Description
Collimator Shape	(0018,1700)	1	Always set
Collimator Left Vertical Edge	(0018,1702)	1C	Always set when the setting conditions are met
Collimator Right Vertical Edge	(0018,1704)	1C	Always set when the setting conditions are met
Collimator Upper Horizontal Edge	(0018,1706)	1C	Always set when the setting conditions are met
Collimator Lower Horizontal Edge	(0018,1708)	1C	Always set when the setting conditions are met
Center of Circular Collimator	(0018,1710)	1C	Always set when the setting conditions are met
Radius of Circular Collimator	(0018,1712)	1C	Always set when the setting conditions are met
Vertices of the Polygonal Collimator	(0018,1720)	1C	Always set when the setting conditions are met

8.2.41 X-Ray Table Module

Table 75

Attribute Name	Tag	Type	Attribute Description
Table Motion	(0018,1134)	2	Length=0 when no entry is made
Table Vertical Increment	(0018,1135)	2C	If the setting conditions are met, Length=0 when no entry is made
Table Longitudinal Increment	(0018,1137)	2C	If the setting conditions are met, Length=0 when no entry is made
Table Lateral Increment	(0018,1136)	2C	If the setting conditions are met, Length=0 when no entry is made
Table Angle	(0018,1138)	3	Length=0 when no entry is made

8.2.42 XRF Positioner Module

Table 76

Attribute Name	Tag	Type	Attribute Description
Distance Source to Detector	(0018,1110)	3	Not set when no entry is made
Distance Source to Patient	(0018,1111)	3	Not set when no entry is made
Estimated Radiographic Magnification Factor	(0018,1114)	3	Not set when no entry is made
Column Angulation	(0018,1450)	3	Not set when no entry is made

8.2.43 XRF Tomography Acquisition Module

Table 77

Attribute Name	Tag	Type	Attribute Description
Tomo Layer Height	(0018,1460)	1	Always set
Tomo Angle	(0018,1470)	3	Not set when no entry is made
Tomo Time	(0018,1480)	3	Not set when no entry is made

8.2.44 XA Positioner Module

Table 78

Attribute Name	Tag	Type	Attribute Description
Distance Source to Patient	(0018,1111)	3	Not set when no entry is made
Distance Source to Detector	(0018,1110)	3	Not set when no entry is made
Estimated Radiographic Magnification Factor	(0018,1114)	3	Not set when no entry is made
Positioner Motion	(0018,1500)	2C	If the setting conditions are met, Length=0 when no entry is made
Positioner Primary Angle	(0018,1510)	2	Length=0 when no entry is made
Positioner Secondary Angle	(0018,1511)	2	Length=0 when no entry is made
Positioner Primary Angle Increment	(0018,1520)	2C	If the setting conditions are met, Length=0 when no entry is made
Positioner Secondary Angle Increment	(0018,1521)	2C	If the setting conditions are met, Length=0 when no entry is made
Detector Primary Angle	(0018,1530)	3	Not set when no entry is made
Detector Secondary Angle	(0018,1531)	3	Not set when no entry is made

8.2.45 Overlay Plane Module

Table 79

Attribute Name	Tag	Type	Attribute Description
Overlay Rows	(60xx,0010)	1	Always set
Overlay Columns	(60xx,0011)	1	Always set
Overlay Type	(60xx,0040)	1	Always set
Origin	(60xx,0050)	1	Always set
Overlay Bits Allocated	(60xx,0100)	1	Always set
Overlay Bit Position	(60xx,0102)	1	Always set
Overlay Data	(60xx,3000)	1C	Always set when the setting conditions are met
Overlay Description	(60xx,0022)	3	Not set when no entry is made
Overlay Subtype	(60xx,0045)	3	Not set when no entry is made
Overlay Label	(60xx,1500)	3	Not set when no entry is made
ROI Area	(60xx,1301)	3	Not set when no entry is made
ROI Mean	(60xx,1302)	3	Not set when no entry is made
ROI Standard Deviation	(60xx,1303)	3	Not set when no entry is made
Overlay Descriptor - Gray (retired)	(60xx,1100)	3	Set when the received image contains this entry
Overlay Descriptor - Red (retired)	(60xx,1101)	3	Set when the received image contains this entry
Overlay Descriptor - Green (retired)	(60xx,1102)	3	Set when the received image contains this entry
Overlay Descriptor - Blue (retired)	(60xx,1103)	3	Set when the received image contains this entry
Overlays - Gray (retired)	(60xx,1200)	3	Set when the received image contains this entry
Overlays - Red (retired)	(60xx,1201)	3	Set when the received image contains this entry
Overlays - Green (retired)	(60xx,1202)	3	Set when the received image contains this entry
Overlays - Blue (retired)	(60xx,1203)	3	Set when the received image contains this entry

8.2.46 Multi-frame Overlay Module

Table 80

Attribute Name	Tag	Type	Attribute Description
Number of Frames in Overlay	(60xx,0015)	1	Always set
Image Frame Origin	(60xx,0051)	3	Not set when no entry is made

8.2.47 Curve Module

Table 81

Attribute Name	Tag	Type	Attribute Description
Curve Dimensions	(50xx,0005)	1	Always set
Number of Points	(50xx,0010)	1	Always set
Type of Data	(50xx,0020)	1	Always set
Data Value Representation	(50xx,0103)	1	Always set
Curve Data	(50xx,3000)	1	Always set
Curve Description	(50xx,0022)	3	Not set when no entry is made
Axis Units	(50xx,0030)	3	Not set when no entry is made
Axis Labels	(50xx,0040)	3	Not set when no entry is made
Minimum Coordinate Value	(50xx,0104)	3	Not set when no entry is made
Maximum Coordinate Value	(50xx,0105)	3	Not set when no entry is made
Curve Range	(50xx,0106)	3	Not set when no entry is made
Curve Data Descriptor	(50xx,0110)	1C	Always set when the setting conditions are met
Coordinate Start Value	(50xx,0112)	1C	Always set when the setting conditions are met
Coordinate Step Value	(50xx,0114)	1C	Always set when the setting conditions are met
Curve Label	(50xx,2500)	3	Not set when no entry is made
Referenced Overlay Sequence	(50xx,2600)	3	Not set when no entry is made
> Referenced SOP Class UID	(0008,1150)	1	Always set
> Referenced SOP Instance UID	(0008,1155)	1	Always set
> Referenced Overlay Group	(50xx,2610)	1	Always set

8.2.48 Modality LUT Module

Table 82

Attribute Name	Tag	Type	Attribute Description
Modality LUT Sequence	(0028,3000)	3	Not set when no entry is made
> LUT Descriptor	(0028,3002)	1C	Always set when the sequence is set
> LUT Explanation	(0028,3003)	3	Not set when no entry is made
> Modality LUT Type	(0028,3004)	1C	Always set when the sequence is set
> LUT Data	(0028,3006)	1C	Always set when the sequence is set
Rescale Intercept	(0028,1052)	1C	Always set when the setting conditions are met
Rescale Slope	(0028,1053)	1C	Always set when the setting conditions are met
Rescale Type	(0028,1054)	1C	Always set when the setting conditions are met

8.2.49 VOI LUT Module

Table 83

Attribute Name	Tag	Type	Attribute Description
VOI LUT Sequence	(0028,3010)	3	Not set when no entry is made
>LUT Descriptor	(0028,3002)	1C	Always set when the sequence is set
>LUT Explanation	(0028,3003)	3	Not set when no entry is made
>LUT Data	(0028,3006)	1C	Always set when the sequence is set
Window Center	(0028,1050)	3	Not set when no entry is made
Window Width	(0028,1051)	1C	Always set when the setting conditions are met
Window Center & Width Explanation	(0028,1055)	3	Not set when no entry is made

8.2.50 SOP Common Module

Table 84

Attribute Name	Tag	Type	Attribute Description
SOP Class UID	(0008,0016)	1	Always set
SOP Instance UID	(0008,0018)	1	Always set
Specific Character Set	(0008,0005)	1C	Always set when the setting conditions are met
Instance Creation Date	(0008,0012)	3	Not set when no entry is made
Instance Creation Time	(0008,0013)	3	Not set when no entry is made
Instance Creator UID	(0008,0014)	3	Not set when no entry is made

8.2.51 Curve Identification Module

Table 85

Attribute Name	Tag	Type	Attribute Description
Curve Number	(0020,0024)	2	Length=0 when no entry is made
Curve Date	(0008,0025)	3	Not set when no entry is made
Curve Time	(0008,0035)	3	Not set when no entry is made
Referenced Image Sequence	(0008,1140)	3	Not set when no entry is made
>Referenced SOP Class UID	(0008,1150)	1C	Always set when the setting conditions are met
>Referenced SOP Instance UID	(0008,1155)	1C	Always set when the setting conditions are met
Referenced Overlay Sequence	(0008,1130)	3	Not set when no entry is made
>Referenced SOP Class UID	(0008,1150)	1C	Always set when the setting conditions are met
>Referenced SOP Instance UID	(0008,1155)	1C	Always set when the setting conditions are met
Referenced Curve Sequence	(0008,1145)	3	Not set when no entry is made
>Referenced SOP Class UID	(0008,1150)	1C	Always set when the setting conditions are met
>Referenced SOP Instance UID	(0008,1155)	1C	Always set when the setting conditions are met

8.2.52 Audio Module

Table 86

Attribute Name	Tag	Type	Attribute Description
Audio Type	(50xx,2000)	1	Always set
Audio Sample Format	(50xx,2002)	1	Always set
Number of Channels	(50xx,2004)	1	Always set
Number of Samples	(50xx,2006)	1	Always set
Sample Rate	(50xx,2008)	1	Always set
Total Time	(50xx,200A)	1	Always set
Audio Sample Data	(50xx,200C)	1	Always set
Referenced Image Sequence	(0008,1140)	3	Not set when no entry is made
>Referenced SOP Class UID	(0008,1150)	1C	Always set when the setting conditions are met
>Referenced SOP Instance UID	(0008,1155)	1C	Always set when the setting conditions are met
Audio Comments	(50xx,200E)	3	Not set when no entry is made

9 Information Object Definition - Storage SCP

9.1 Entity Module Definitions

The acceptable information objects are the same as those defined at section 8 "Information Object Definition - Storage SCU" , it is recommended that the remote Storage SCU set the following tags:

Table 87

Attribute Name	Module	Tag	Type	Reasons
Patient's Name	Patient	(0010,0010)	2	To archive in MEDIS-DC media format* ¹
Study Date	General Study	(0008,0020)	2	To archive in MEDIS-DC media format* ¹
Study Time	General Study	(0008,0030)	2	To archive in MEDIS-DC media format* ¹
Institution Name	General Equipment	(0008,0080)	3	To archive in MEDIS-DC media format* ¹
Patient's Name	Patient	(0010,0010)	2	To archive in MEDIS-DC media format* ¹
Patient ID	Patient	(0010,0020)	2	To archive in MEDIS-DC media format* ¹
Patient's Birth Date	Patient	(0010,0030)	2	To archive in MEDIS-DC media format* ¹
Patient's Sex	Patient	(0010,0040)	2	To archive in MEDIS-DC media format* ¹

*1: MEDIS-DC media format is provided by MEDIS-DC.(MDS A 0008-1995)

10 Search Keys

10.1 Query/Retrieve SCP (C-FIND)

The search keys used for the Query/Retrieve SCP(C-FIND) are shown.

10.1.1 Patient/Study Only Information Model - FIND

10.1.1.1 Patient Level

Table 88

Attribute Name	Tag	Type
Patient's Name	(0010,0010)	R
Patient ID	(0010,0020)	U
Patient's Birth Date	(0010,0030)	O
Patient's Sex	(0010,0040)	O

10.1.1.2 Study Level

Table 89

Attribute Name	Tag	Type
Study Date	(0008,0020)	R
Study Time	(0008,0030)	R
Accession Number	(0008,0050)	R
Study Instance UID	(0020,000D)	U
Study ID	(0020,0010)	R
Number of Study Related Images	(0020,1208)	O