



KONICA MINOLTA

Picture Archiving and Communication System

**Acies**

# **DICOM 3.0 Conformance Statement**



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**EN**

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# DICOM Conformance Statement

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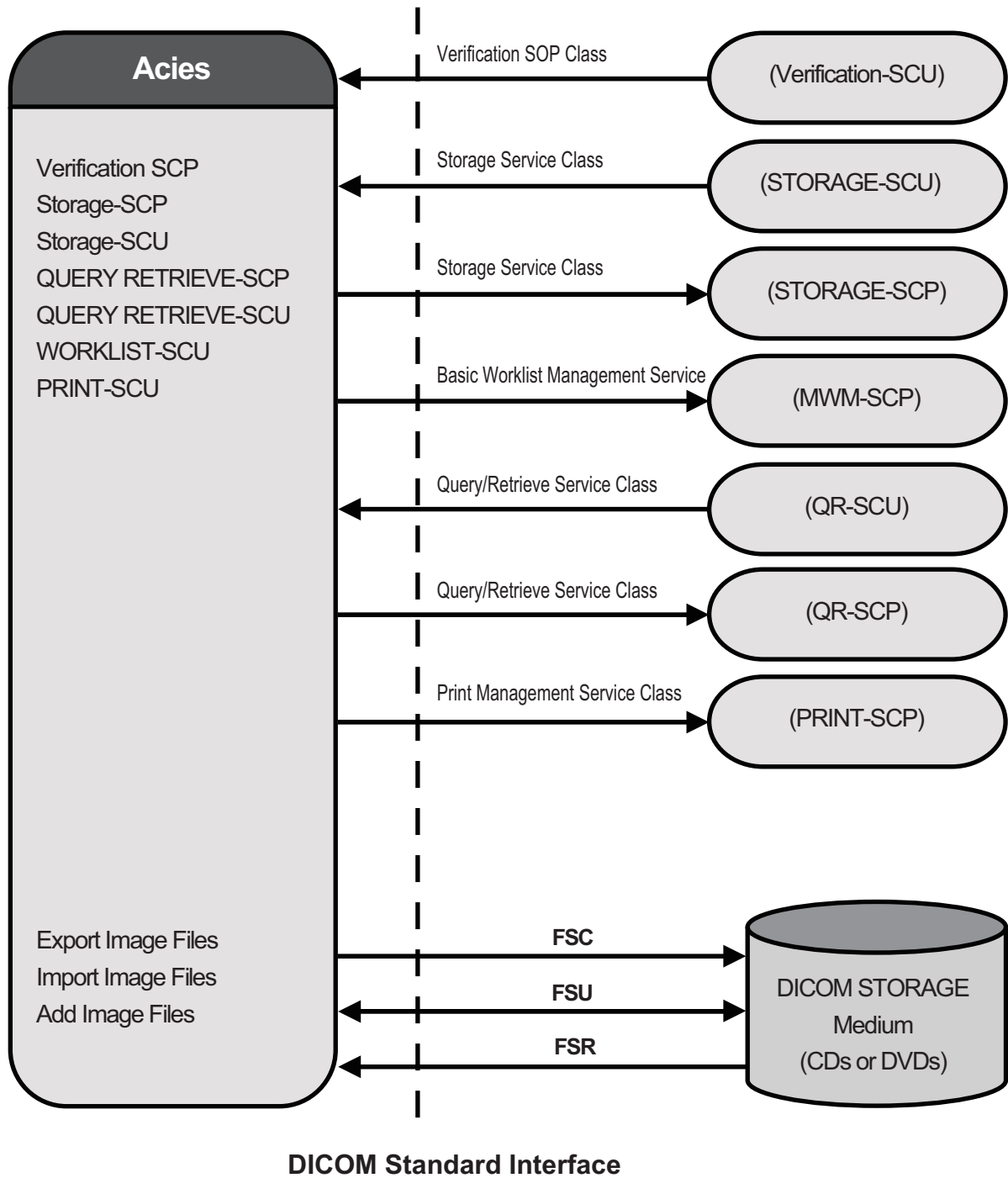
# 0. PREFACE

This document declares conformance to DICOM3.0 regarding KONICA MINOLTA Acies.

# 1. IMPLEMENTATION MODEL

The application model for Acies is as shown below.

## 1.1 Application Data Flow



## 1.2 Function Definition of AEs

Acies provides standard conformance to DICOM V3.0 SOP classes to both SCU and SCP

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class			
Verification	1.2.840.10008.1.1	No	Yes
Storage Service Class			
CR (Computed Radiography) Image	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
Digital X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes
Digital X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	Yes
Digital Mammography Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.2	Yes	Yes
Digital Mammography Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	Yes
Digital Intra-oral X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	Yes
CT Image Information Object Storage	1.2.840.10008.5.1.4.1.1.2	Yes	Yes
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes
MR Image Information Object Storage	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes
SC (Secondary Capture) Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
XA Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes
XRF Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	Yes
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	Yes
Position Emission Tomography Storage	1.2.840.10008.5.1.4.1.1.128	Yes	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	Yes
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes
Basic Worklist Management Service Class			
Modality Worklist information Model - FIND	1.2.840.10008.5.1.4.31	Yes	No
Query/Retrieve Service Class			
Patient Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.1.1	No	Yes
Patient Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.1.2	No	Yes
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes
Patient/Study Only Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.3.1	No	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Patient/Study Only Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.3.2	No	Yes
Print Management Service Class			
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Yes	No
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Yes	No
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	Yes	No

Acies provides standard conformance to DICOM Interchange option of Media Storage Service Class.

Identifier	Real World Activity	Role	SC Option
STD-GEN-CD STD-GEN-DVD	Create CD-DVD-R	FSC	Interchange
	Reads and displays directory file	FSR	Interchange
	Saves to local	FSU	Interchange
STD-US-ID-SF-CD STD-US-ID-MF-CD STD-US-ID-SF-DVD STD-US-ID-MF-DVD	Create CD-DVD-R	FSC	Interchange
	Reads and displays directory file	FSR	Interchange
	Saves to local	FSU	Interchange
STD-CTMR-CD STD-CTMR-DVD	Create CD-DVD-R	FSC	Interchange
	Reads and displays directory file	FSR	Interchange
	Saves to local	FSU	Interchange

### 1.2.1 Verification SOP Class SCP

Acies Verification SOP Class SCP works as a communication process. After accepting the Association establishment request to C-ECHO-RQ from an external AE, it responds a C-EHCO-RSP message.

### 1.2.2 Storage Service Class SCP

Acies Verification SOP Class SCP works as a communication process. After accepting the Association establishment request to C-STORE-RQ from an external AE, it starts receiving images.

### 1.2.3 Storage Service Class SCU

Acies Storage Service Class SCU works as a communication process. After accepting the Association establishment request to an external AE, it starts sending images from C-STORE-RQ.

### 1.2.4 Basic Worklist Management Service SCU

Acies Basic Worklist Management Service Class SCU works as a communication process. After accepting the Association establishment request to an external AE, it obtains patient/study information by C-FIND-RQ.

### 1.2.5 Query/Retrieve Service Class SCP

Acies Query/Retrieve Service Class SCP works as a communication process. After accepting the Association establishment request to C-FIND-RQ from an external AE, it searches requested images and responds the result. It also sends images requested by C-MOVE-RQ to a specified external AE.

### 1.2.6 Query/Retrieve Service Class SCU

Acies Query/Retrieve Service Class SCU works as a communication process. After accepting the Association establishment request to an external AE, it searches requested images by C-FIND and delegates obtainment of images by C-MOVE.



### **1.2.7 Print Management Service Class SCU**

Acies Print Management Service Class works as a communication process. After accepting the Association establishment request to an external AE, it starts sending hard copies by N-CREATE-RQ.

### **1.2.8 Media Storage**

Acies Media Storage has following functions:

- Initializing a medium and writing a collection of DICOM files to the medium
- Updating a medium by adding a new SOP instance to a collection of DICOM files that has already been existed
- Displaying a list of directories of a collection of files in the medium
- Copying a SOP instance to the local storage

## **1.3 Sequencing of Real-World Activities**

Sequencing of Real-World Activities is not supported.

## 2. AE SPECIFICATIONS

### 2.1 Specifications of Acies Verification SOP Class SCP

Acies supports the following SOP class as Verification SOP Class SCP.

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1

#### 2.1.1 Association Establishment Policy

The conditions to establish the Association are described below.

##### 2.1.1.1 General

Acies Verification SOP Class SCP identifies and uses the following application context name.

Content	Value
Application context name	1.2.840.10008.3.1.1.1

The maximum and initial PDU size is 64KB.

##### 2.1.1.2 Number of Associations

Acies Verification SOP Class SCP accepts up to 16 external AEs and Association requests including the Associations for different services at the same time. Parallel processing will be implemented for each AE whose Association has been established.

##### 2.1.1.3 Asynchronous Nature

Asynchronous processing is not supported.

##### 2.1.1.4 Implementation Identifying Information

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.635. Device serial number
Implementation Version Name	KC_IPACSEX_X.XX

\* A software version number is specified in X.XX.

#### 2.1.2 Real World Activity

##### 2.1.2.1 Related Real World Activity

A related real-world activity is to receive a C-STORE request on images each reception authorized class from Storage Service Class SCU.

##### 2.1.2.2 Table of Presentation Context

The following presentation context IDs are accepted.

Abstract Syntax			
Name	UID	Role	Extended Negotiation
Verification Service Class	1.2.840.10008.1.1	SCP	None

Transfer Syntax	
Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2

**2.1.2.3 Verification SOP Class**

This provides conformance to Verification SOP Class.

Acies uses C-ECHO to verify the data reception from a sender device (SCU).

Behavior: Acies executes C-ECHO DIMSE service that conforms to a request in Verification Class.

Acies accepts the C-ECHO request, processes it properly, and then sends whether the process is complete successfully or unsuccessfully to SCU.

**2.2 Specifications of Acies Storage Service Class SCP**

Acies supports the following SOP classes as Storage Service Class SCP.

SOP Class Name	SOP Class UID
CR (Computed Radiography) Image	1.2.840.10008.5.1.4.1.1.1
Digital X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.1
Digital X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra-oral X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra-oral X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.3.1
CT Image Information Object Storage	1.2.840.10008.5.1.4.1.1.2
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
MR Image Information Object Storage	1.2.840.10008.5.1.4.1.1.4
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1
SC (Secondary Capture) Image Storage	1.2.840.10008.5.1.4.1.1.7
XA Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.1
XRF Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.2
NM Image Storage	1.2.840.10008.5.1.4.1.1.20
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4
Position Emission Tomography Storage	1.2.840.10008.5.1.4.1.1.128
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1

## 2.2.1 Association Establishment Policy

The conditions to establish the Association are described below.

### 2.2.1.1 General

Acies Storage Service Class SCP identifies and uses the following application context name.

Content	Value
Application context name	1.2.840.10008.3.1.1.1

The maximum and initial PDU size is 64KB.

### 2.2.1.2 Number of Associations

Acies Storage Service Class SCP accepts up to 10 external AEs and Association requests including the Associations for different services at the same time. Parallel processing will be implemented for each AE whose Association has been established.

### 2.2.1.3 Asynchronous Nature

A single image is only treated in the Association. Asynchronous processing is not supported.

### 2.2.1.4 Implementation Identifying Information

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.635. Device serial number
Implementation Version Name	KC_IPACSEX_X.XX

\* A software version number is specified in X.XX.

## 2.2.2 Real-world Activity

### 2.2.2.1 Related Real-world Activity

A related real-world activity is to receive C-STORE request on images each reception authorized class from Storage Service Class SCU.

### 2.2.2.2 Table of Presentation Context

The following presentation context IDs are accepted.

Abstract Syntax			
Name	UID	Role	Extended Negotiation
CR (Computed Radiography) Image	1.2.840.10008.5.1.4.1.1.1	SCP	None
Digital X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.1	SCP	None
Digital X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.1.1	SCP	None
Digital Mammography Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.2	SCP	None
Digital Mammography Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.2.1	SCP	None
Digital Intra-oral X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.3	SCP	None

Abstract Syntax			
Digital Intra-oral X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.3.1	SCP	None
CT Image Information Object Storage	1.2.840.10008.5.1.4.1.1.2	SCP	None
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	SCP	None
MR Image Information Object Storage	1.2.840.10008.5.1.4.1.1.4	SCP	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	SCP	None
SC (Secondary Capture) Image Storage	1.2.840.10008.5.1.4.1.1.7	SCP	None
XA Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.1	SCP	None
XRF Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.2	SCP	None
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	SCP	None
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	SCP	None
Position Emission Tomography Storage	1.2.840.10008.5.1.4.1.1.128	SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	SCP	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	SCP	None

Transfer Syntax	
Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2
Default transfer syntax for lossy compression of 8-bit JPEG images	1.2.840.10008.1.2.4.50
Default transfer syntax for lossy compression of 12-bit JPEG images	1.2.840.10008.1.2.4.51
Default transfer syntax for lossless compression of JPEG images	1.2.840.10008.1.2.4.70

**2.2.2.3 Each Image Storage SOP Class**

This provides conformance to each Image Storage SOP Class.

Acies uses C-STORE to receive the image data from an image-generated device (SCU).

The received data in each Service Class accords with the DICOM standard.

Behavior: Acies executes C-STORE DIMSE service that conforms to a request on images in each reception authorized class.

Acies accepts the C-STORE request, processes it properly, and then sends whether the process is complete successfully or unsuccessfully to SCU.

## 2.3 Specifications of Acies Storage Service Class SCU

Acies supports the following SOP classes as Storage Service Class SCU.

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
CR (Computed Radiography) Image	1.2.840.10008.5.1.4.1.1.1
Digital X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.1
Digital X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra-oral X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra-oral X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.3.1
CT Image Information Object Storage	1.2.840.10008.5.1.4.1.1.2
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
MR Image Information Object Storage	1.2.840.10008.5.1.4.1.1.4
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1
SC (Secondary Capture) Image Storage	1.2.840.10008.5.1.4.1.1.7
XA Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.1
XRF Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.2
NM Image Storage	1.2.840.10008.5.1.4.1.1.20
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4
Position Emission Tomography Storage	1.2.840.10008.5.1.4.1.1.128
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1

### 2.3.1 Association Establishment Policy

The conditions to establish the Association are described below.

#### 2.3.1.1 General

Acies Storage Service Class SCU identifies and uses the following application context name.

Content	Value
Application context name	1.2.840.10008.3.1.1.1

The maximum and initial PDU size is 64KB.

#### 2.3.1.2 Number of Associations

Acies Storage Service Class SCU issues up to 5 Association establishment requests at a time for an external AE, which is a different device. Parallel processing will be implemented for each AE whose Association has been established.

**2.3.1.3 Asynchronous Nature**

A single image is only treated in the Association. Asynchronous processing is not supported.

**2.3.1.4 Implementation Identifying Information**

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.635. Device serial number
Implementation Version Name	KC_IPACSEX_X.XX

\* A software version number is specified in X.XX.

**2.3.2 Real-world Activity**

**2.3.2.1 Related Real-world Activity**

A related real-world activity is to issue a C-STORE request on images each reception authorized class for Storage Service Class SCP.

**2.3.2.2 Table of Presentation Context**

Acies Storage Service Class SCU makes a request by using the presentation context in the table below.

Abstract Syntax			
Name	UID	Role	Extended Negotiation
CR (Computed Radiography) Image	1.2.840.10008.5.1.4.1.1.1	SCU	None
Digital X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.1	SCU	None
Digital X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.1.1	SCU	None
Digital Mammography Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.2	SCU	None
Digital Mammography Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.2.1	SCU	None
Digital Intra-oral X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.3	SCU	None
Digital Intra-oral X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.3.1	SCU	None
CT Image Information Object Storage	1.2.840.10008.5.1.4.1.1.2	SCU	None
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	SCU	None
MR Image Information Object Storage	1.2.840.10008.5.1.4.1.1.4	SCU	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	SCU	None
SC (Secondary Capture) Image Storage	1.2.840.10008.5.1.4.1.1.7	SCU	None
XA Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.1	SCU	None
XRF Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.2	SCU	None
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	SCU	None

Abstract Syntax			
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	SCU	None
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	SCU	None
Position Emission Tomography Storage	1.2.840.10008.5.1.4.1.1.128	SCU	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	SCU	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	SCU	None

Transfer Syntax	
Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2
Default transfer syntax for lossy compression of 8-bit JPEG images	1.2.840.10008.1.2.4.50
Default transfer syntax for lossy compression of 12-bit JPEG images	1.2.840.10008.1.2.4.51
Default transfer syntax for lossless compression of JPEG images	1.2.840.10008.1.2.4.70

### 2.3.2.3 Each Image Storage SOP Class

This provides conformance to each Image Storage SOP Class.

Acies uses C-STORE to store the image data in an image-storage device (SCP). The private data may be output, if necessary.

The received data in each Service Class accords with the DICOM standard.

Behavior: Acies executes C-STORE DIMSE service that conforms to a request on images in each reception authorized class.

Acies identifies the status of the C-STORE reply, and takes a proper action according to whether the service is complete successfully or unsuccessfully.

## 2.4 Specifications of Basic Worklist Management Service Class SCU

Acies supports the following SOP class as Basic Worklist Management Service Class SCU.

SOP Class Name	Value
Modality Worklist information Model - FIND	1.2.840.10008.5.1.4.31

### 2.4.1 Association Establishment Policy

The conditions to establish the Association are described below.



**2.4.1.1 General**

Acies Storage Service Class SCP identifies and uses the following application context name.

Content	Value
Application context name	1.2.840.10008.3.1.1.1

The maximum and initial PDU size is 64KB.

**2.4.1.2 Number of Associations**

Acies Basic Worklist Management Service Class SCU issues up to 1 Association establishment request at a time for an external AE, which is a different device.

**2.4.1.3 Asynchronous Nature**

A single image is only treated in the Association. Asynchronous processing is not supported.

**2.4.1.4 Implementation Identifying Information**

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.635. Device serial number
Implementation Version Name	KC_IPACSEX_X.XX

\* A software version number is specified in X.XX.

**2.4.2 Real-world Activity**

**2.4.2.1 Related Real-world Activity**

Acies Basic Worklist Management Service Class SCU, in the real world where the Association is established, performs C-FIND and makes a request for Remote Management Worklist Management Service Class to receive patient/study information.

**2.4.2.2 Table of Presentation Context**

Acies Basic Worklist Management Service Class SCU makes a request by using the presentation context in the table below.

Abstract Syntax			
Name	UID	Role	Extended Negotiation
Modality Worklist information Model - FIND	1.2.840.10008.5.1.4.31	SCU	None

Transfer Syntax	
Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2

**2.4.3 Modality Worklist Information Model Attribute**

Modality Worklist attribute accords with the DICOM standard process.

## 2.5 Specifications of Query/Retrieve Service Class SCP

Acies supports the following SOP classes as Query/Retrieve Service Class SCP.

SOP Class Name	Value
Patient Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.1.1
Patient Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.1.2
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2
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

Transfer Syntax	
Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2
Default transfer syntax for lossy compression of 8-bit JPEG images	1.2.840.10008.1.2.4.50
Default transfer syntax for lossy compression of 12-bit JPEG images	1.2.840.10008.1.2.4.51
Default transfer syntax for lossless compression of JPEG images	1.2.840.10008.1.2.4.70

### 2.5.1 Association Establishment Policy

The conditions to establish the Association are described below.

#### 2.5.1.1 General

Acies Query/Retrieve Service Class SCU identifies and uses the following application context name.

Content	Value
Application context name	1.2.840.10008.3.1.1.1

The maximum and initial PDU size is 64KB.

#### 2.5.1.2 Number of Associations

Acies Query/Retrieve Service Class SCU issues up to 1 Association establishment request at a time for an external AE, which is a different device.

#### 2.5.1.3 Asynchronous Nature

A single image is only treated in the Association. Asynchronous processing is not supported.

### 2.5.1.4 Implementation Identifying Information

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.635. Device serial number
Implementation Version Name	KC_IPACSEX_X.XX

\* A software version number is specified in X.XX.

## 2.5.2 Real-world Activity

### 2.5.2.1 Related Real-world Activity

Acies receives a search request from a remote AE, searches images in the internal database based on the request level, and sends the search result back.

### 2.5.2.2 Table of Presentation Context

The following presentation context IDs are accepted.

Abstract Syntax			
SOP Class Name	UID	Role	Extended Negotiation
Patient Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.1.1	SCU	None
Patient Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.1.2	SCU	None
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	SCU	None
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	SCU	None
Patient/Study Only Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.3.1	SCU	None
Patient/Study Only Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.3.2	SCU	None

### 2.5.2.3 SOP-specific Conformance

Data items that can be searched can be changed by setting options. Default setting items are indicated below.

Level	Tag	Type	Name
Patient	0010,0010	R	Patient Name
	0010,0020	R	Patient ID
	0010,0040	R	Patient's Sex
Study	0008,0020	R	Study Date
	0008,0050	R	Accession Number
	0020,0010	R	Study ID
	0020,1206	O	Number of Study-related Series
	0020,1208	O	Number of Study-related Instances
	0020,000D	U	Study Instance UID
Series	0008,0060	R	Modality
	0020,000E	U	Series Instance UID

Level	Tag	Type	Name
Image	0008,0018	U	SOP Instance UID
	0020,0013	R	Instance Number

## 2.6 Specifications of Query/Retrieve Service Class SCU

Acies supports the following SOP classes as Query/Retrieve Service Class SCU.

SOP Class Name	Value
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2

Transfer Syntax	
Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2
Default transfer syntax for lossy compression of 8-bit JPEG images	1.2.840.10008.1.2.4.50
Default transfer syntax for lossy compression of 12-bit JPEG images	1.2.840.10008.1.2.4.51
Default transfer syntax for lossless compression of JPEG images	1.2.840.10008.1.2.4.70

### 2.6.1 Association Establishment Policy

The conditions to establish the Association are described below.

#### 2.6.1.1 General

Acies Query/Retrieve Service Class SCU identifies and uses the following application context name.

Content	Value
Application context name	1.2.840.10008.3.1.1.1

The maximum and initial PDU size is 64KB.

#### 2.6.1.2 Number of Associations

Acies Query/Retrieve Service Class SCU issues up to 1 Association establishment request at a time for an external AE, which is a different device.

#### 2.6.1.3 Asynchronous Nature

A single image is only treated in the Association. Asynchronous processing is not supported.

#### 2.6.1.4 Implementation Identifying Information

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.635. Device serial number
Implementation Version Name	KC_IPACSEX_X.XX

## 2.6.2 Real-world Activity

### 2.6.2.1 Related Real-world Activity

When a user selects Q/R SCP, performs searches based on search items such as Patient Name, Patient ID or Accession Number, Acies Q/R SCU AE gets activated. A user can obtain study/series/images. Images are received by Storage SCP AE, which is another Association.

### 2.6.2.2 Table of Presentation Context

The following presentation context IDs are accepted.

Abstract Syntax			
Name	UID	Role	Extended Negotiation
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	SCU	None
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	SCU	None

### 2.6.2.3 SOP-specific Conformance

Acies performs hierarchical study-root searches.

Level	Tag	Type	Name
Study	0008,0020	R	Study Date
	0008,0050	R	Accession Number
	0010,0010	R	Patient Name
	0010,0020	R	Patient ID
	0010,0030	R	Study ID
	0010,0040	R	Patient's Sex
	0020,0010	R	Study ID
	0020,000D	U	Study Instance UID
Series	0008,0060	R	Modality
	0020,000E	U	Series Instance UID

## 2.7 Specifications of Print Management Service Class SCU

Acies supports the following SOP class as Print Management Service Class SCU.

SOP Class Name	Value
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23

### 2.7.1 Association Establishment Policy

The conditions to establish the Association are described below.

#### 2.7.1.1 General

Acies Print Management Service Class SCU identifies and uses the following application context name.

Content	Value
Application context name	1.2.840.10008.3.1.1.1

The maximum and initial PDU size is 64KB.

#### 2.7.1.2 Number of Associations

Acies Print Management Service Class SCU issues up to 1 Association establishment request at a time for an external AE, which is a different device.

#### 2.7.1.3 Asynchronous Nature

A hard copy is only treated in the Association. Asynchronous processing is not supported.

#### 2.7.1.4 Implementation Identifying Information

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.635. Device serial number
Implementation Version Name	KC_IPACSEX_X.XX

\* A software version number is specified in X.XX.

SOP Instance UD, which is issued by SCP, of each of Basin Film session, Basic Film Box and Basic Grayscale Image Box is used.

### 2.7.2 Real-world Activity

#### 2.7.2.1 Related Real-world Activity

A related real-world activity is to send images and various parameters to an image printing device (imager) to copy a film.

**2.7.2.2 Table of Presentation Context**

Abstract Syntax			
SOP Class Name	UID	Role	Extended Negotiation
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	SCU	None
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	SCU	None

Transfer Syntax	
Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2

**2.7.2.3 Basic Film Session SOP Class**

This provides conformance to Basic Film Session SOP Class.

Acies uses DIMSE service for film print for an image printing device (SCP).

Behavior: Acies executes DIMSE service, described in the table below, for SOP instance that conforms to a request in Basic Film Session attribute list.

Acies identifies the status of the DIMSE service reply, described in the table below, and takes a proper action according to whether the service is complete successfully or unsuccessfully.

DIMSE service element	Usage SCU/SCP
N-CREATE	M/M
N-SET	U/M
N-DELETE	U/M
N-ACTION	U/U

**Basic Film Session Attribute List (N-CREATE/N-SET)**

Tag	Attribute Name	VR	VM	Usage
(2000,0010)	Copy Counts	IS	1	U/M
(2000,0020)	Printing Priority	CS	1	U/M
(2000,0030)	Media Type	CS	1	U/M
(2000,0040)	Film Destination	LO	1	U/U

**2.7.2.4 Basic Film Box SOP Class**

This provides conformance to Basic Film Session SOP Class.

Acies uses DIMSE service for film print for an image printing device (SCP). The private data may be output, if necessary.

Behavior: Acies executes DIMSE service, described in the table below, for SOP instance that conforms to a request in Basic Film Box attribute list. Acies identifies the status of the DIMSE service reply, described in the table below, and takes a proper action according to whether the service is complete successfully or unsuccessfully.

DIMSE service element	Usage SCU/SCP
N-CREATE	M/M
N-SET	U/M
N-DELETE	U/M
N-ACTION	U/U

**Basic Film Box Attribute List (N-CREATE/N-SET)**

Tag	Attribute Name	VR	VM	Usage
(2010,0010)	Image Display Format	ST	1	M/M
(2010,0500)	Referenced Film Session Sequence	SQ	1	M/M
>(0008,1150)	Referenced SOP Class UID	UI	1	M/M
>(0008,1155)	Referenced SOP Instance UID	UI	1	M/M
(2010,0510)	Referenced Image Box Sequence	SQ	1	-/M
>(0008,1150)	Referenced SOP Class UID	UI	1	-/M
>(0008,1155)	Referenced SOP Instance UID	UI	1	-/M
(2010,0040)	Film Orientation	CS	1	U/M
(2010,0050)	Film Size ID	CS	1	U/M
(2010,0060)	Magnification Type	CS	1	U/M
(2010,0130)	Max Density	US	1	U/M
(2010,0150)	Configuration Information	ST	1	U/M
(2050,0500)	Referenced Presentation LUT Sequence	SQ	1	U/MC
>(0008,1150)	Referenced SOP Class UID	UI	1	U/MC
>(0008,1155)	Referenced SOP Instance UID	UI	1	U/MC
(2010,0030)	Annotation Display Format ID	CS	1	U/U
(2010,0080)	Smoothed Type	CS	1	U/U
(2010,0100)	Border Density	CS	1	U/U
(2010,0110)	Empty Image Density	US	1	U/U
(2010,0120)	Min Density	US	1	U/U
(2010,0140)	Trim	US	1	U/U
(2010,015E)	Illumination	US	1	U/MC
(2010,0160)	Reflected Ambient Light	US	1	U/MC

\* The LUT number of the imager is specified in (2010, 0150) configuration information, like "KC\_LUT=1".

**2.7.2.5 Basic Grayscale SOP Class**

This provides conformance to Basic Grayscale Image BOX SOP Class.

Acies uses DIMSE service for film print for an image printing device (SCP).

Behavior: Acies executes DIMSE service, described in the table below, for SOP instance that conforms to a request in Basic Grayscale attribute list.

DIMSE service element	Usage SCU/SCP
N-SET	M/M

**Basic Film Box Attribute List (N-CREATE/N-SET)**

Tag	Attribute Name	VR	VM	Usage
(2020,0010)	Image Position	US	1	M/M
(2020,0110)	Basic Grayscale Image Sequence	SQ	1	M/M
>(0028,0002)	Sample per Pixel	US	1	M/M
>(0028,0004)	Photometric Interpretation	CS	1	M/M



Tag	Attribute Name	VR	VM	Usage
>(0028,0010)	Row	US	1	M/M
>(0028,0011)	Column	US	1	M/M
>(0028,0034)	Pixel Aspect Ratio	IS	1	MC/M
>(0028,0100)	Bits Allocated	US	1	M/M
>(0028,0101)	Bits Stored	US	1	M/M
>(0028,0102)	High Bit	US	1	M/M
>(0028,0103)	Pixel Representation	US	1	M/M
>(7FE0,0010)	Pixel Data	OW or OB	1	M/M
(2020,0020)	Polarity	CS	1	U/M
(2020,0030)	Requested Image Size	DS	1	U/U

**2.7.2.6 Printer SOP Class**

This provides conformance to Printer SOP Class.

Acies uses DIMSE service for obtaining device information from an image printing device (SCP). The private data may be output, if necessary.

Behavior: Acies executes DIMSE service, described in the table below, for SOP instance that conforms to a request in Printer SOP attribute list. Acies identifies the status of the DIMSE service reply, described in the table below, and takes a proper action according to whether the service is complete successfully or unsuccessfully.

DIMSE service element	Usage SCU/SCP
N-GET	U/M

**Printer SOP Attribute List (N-GET)**

Tag	Attribute Name	VR	VM	Usage
(2110,0010)	Printer Status	CS	1	U/M
(2110,0020)	Printer Status Info	CS	1	U/M
(2110,0030)	Printer Name	LO	1	U/U
(0008,0070)	Manufacturer	LO	1	U/U
(0008,10190)	Manufacturer Model Name	LO	1	U/U
(0018,1000)	Device Serial Number	LO	1	U/U
(0018,1020)	Software Versions	LO	1	U/U
(0018,1200)	Date Last Calibration	DA	1-n	U/U
(0018,1201)	Time Last Calibration	TM	1-n	U/U

### 2.7.2.7 Presentation LUT SOP Class

This provides conformance to Presentation LUT SOP Class.

Acies uses DIMSE service for sending presentation LUT that is applied to film print for an image printing device (SCP).

Behavior: Acies executes DIMSE service, described in the table below, for SOP instance that conforms to a request in Presentation LUT attribute list. Acies identifies the status of the DIMSE service reply, described in the table below, and takes a proper action according to whether the service is complete successfully or unsuccessfully.

DIMSE service element	Usage SCU/SCP
N-CREATE	M/M
N-DELETE	U/M

#### Presentation LUT Attribute List (N-CREATE)

Tag	Attribute Name	VR	VM	Usage
(2050,0010)	Presentation LUT Sequence	SQ	1	MC/M
>(0028,3002)	LUT Descriptor	US or SS	1	MC/M
>(0028,3006)	LUT Data	US or SS or OW	1	MC/M
(2050,0020)	Presentation LUT Shape	CS	1	MC/M

## 2.8 Specifications of Media Storage

### 2.8.1 File Meta Information for the Application Entity

Values for identifying information are issued by Konica Minolta.

Content	Value
Implementation Class UID	1.2.392.200036.9107.700
Implementation Version Name	MG.DICOM XXXXX

\* A software version number is specified in X.XX.

### 2.8.2 Real-world Activity

#### 2.8.2.1 Related Real-world Activity

Acies Media Storage does the followings:

- Export image Files  
Working as FSC that uses the interchange option in which direction for creating CD/DVD from a list is present, with user operations.
- Import Image Files  
Working as FSR that uses the interchange option in which direction for reading CD/DVD is present, with user operations.
- Add Image Files  
Working as FSU that uses the interchange option in which direction for updating CD/DVD is present, with user operations. This makes it possible to update and save patient/study information to the local storage, as well.

**2.8.2.2 SOP Class Specifications**

**IOD and Transfer Syntax for STD-US-ID-SF/MF**

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
Basic Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
Ultrasound Image	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian Explicit VR Little Endian JPEG Baseline	1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.50
Ultrasound Multiframe Image	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian Explicit VR Little Endian JPEG Baseline	1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.50

**IOD and Transfer Syntax for STD-CTMR**

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
Basic Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
CT Image	1.2.840.10008.5.1.4.1.1.2	Explicit VR Little Endian Implicit VR Little Endian JPEG Lossless	1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70
MR Image	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian Implicit VR Little Endian JPEG Lossless	1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70
SC Image	1.2.840.10008.5.1.4.1.1.7	Explicit VR Little Endian Implicit VR Little Endian JPEG Lossless	1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70

## IOD and Transfer Syntax for STD-GEN-CD

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
Basic Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
CR (Computed Radiography) Image	1.2.840.10008.5.1.4.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
Digital X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
Digital X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
Digital Mammography Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1
Digital Mammography Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.2.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
Digital Intra-oral X-Ray Image Storage (for presentation)	1.2.840.10008.5.1.4.1.1.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1
Digital Intra-oral X-Ray Image Storage (for processing)	1.2.840.10008.5.1.4.1.1.1.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
CT Image Information Object Storage	1.2.840.10008.5.1.4.1.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
MR Image Information Object Storage	1.2.840.10008.5.1.4.1.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
SC (Secondary Capture) Image Storage	1.2.840.10008.5.1.4.1.1.7	Explicit VR Little Endian	1.2.840.10008.1.2.1
XA Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
XRF Image Information Object Storage	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Little Endian	1.2.840.10008.1.2.1
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	Explicit VR Little Endian	1.2.840.10008.1.2.1
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Explicit VR Little Endian	1.2.840.10008.1.2.1
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Explicit VR Little Endian	1.2.840.10008.1.2.1
Position Emission Tomography Storage	1.2.840.10008.5.1.4.1.1.128	Explicit VR Little Endian	1.2.840.10008.1.2.1
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Little Endian	1.2.840.10008.1.2.1

## 3. COMMUNICATIONS PROFILES

### 3.1 Supported Communications Stacks

TCP/IP Network Communication Support that is defined in DICOM3.0 PART8 is provided.

### 3.2 TCP/IP Stack

TCP/IP stack is inherited from Windows environment.

#### 3.2.1 Physical Media Support

100BASE-TX is supported as a standard for TCP/IP.

## 4. Expansion/Specialization/Privatization

(0033, A000) in Storage Service Class Image IOD is used as private data.

However, they are transferred, if necessary.

## 5. Configuration Information

### 5.1 Handling AE Title and Presentation Address

An AE title for this soft ware depends on settings.

### 5.2 Configuration Parameters

#### 5.2.1 Configuration Information About This Software

The following items can be set.

- 1) AE title Default = KC\_IPEX\_P001
- 2) TCP/IP Port number

#### 5.2.2 Configuration Information About Remote AE

The following items can be set.

- 1) AE title
- 2) TCP/IP Port number

## 6. Supported Extended Character Set

For the element whose VR is SH, LO, ST, LT or PN, extended characters can be used by specifying a repertory of extended characters to attribute specific character (0008,0005) set in each Service Class.

The following repertories of extended characters are supported.

- .ISO 2022 IR 6
- \ISO 2022 IR 87
- .ISO 2022 IR 13\ISO 2022 IR 87
- \ISO 2022 IR 13\ISO 2022 IR 87
- \ISO 2022 IR 87\ISO 2022 IR 159
- .ISO\_IR 100
- .ISO\_IR 192
- GB18030

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