DICOM 3.0 Conformance Statement

DICOM PRI
v. 4.64

Version 11.0

September 2011

Summary :

This document presents the conformance statement of DICOM PRI that implements as Service Class Provider (SCP) the following DICOM 3.0 Meta services: Basic Grayscale Print Management and Basic Color Print Management. DICOM PRI may also be configured to act as a Storage Service Class Provider.
It applies to version 4.64 of DICOM PRI.

Table of Contents

1   Introduction

1.1   Scope and field of application

This document describes DICOM PRI conformance to the DICOM 3.0 standard.

This conformance statement describes the conformance specifics of DICOM PRI software configurations supporting various Windows compatible devices.

It contains a short description of application involved and provides technical information about data exchange capabilities of the equipment. The main elements describing these capabilities are the supported DICOM Service Object Pair (SOP) Classes, Roles, Information Object Definitions (IOD) and Transfer Syntaxes.

It should be read in conjunction with the DICOM standard and its addenda.

This statement is conformant with the recommended format as described in PS 3.2 of the DICOM standard.

DICOM PRI acts as a SCP for the following Meta SOP Classes:

- Basic Grayscale Print Management
- Basic Color Print Management

DICOM PRI also acts as a SCP for the following SOP Classes:

- Verification SOP Class
- Presentation LUT SOP Class

DICOM PRI may also be configured to act as a Storage SCP to perform automatic Store to Print operations.

1.2   Acronyms and Abbreviations

The following acronyms and abbreviations are used in this document

- ACR   American college of Radiology
- ANSI   American National Standards Institute
- DICOM   Digital Imaging and Communication in Medicine
- DIMSE   DICOM Message Service Element
- DIMSE-C   DICOM Message Service Element-Composite
- DIMSE-N   DICOM Message Service Element-Normalized
- NEMA   National Electrical Manufacturers Association
- PDU   Protocol Data Unit
- SCP   Service Class Provider
- SCU   Service Class User

- SOP   Service Object Pair
- TCP/IP   Transmission Control Protocol/Internet Protocol
- UID   Unique Identifier

1.3 References

[DICOM]

The Digital Imaging and Communications in Medicine (DICOM) standard:

NEMA PS 3.1 – to 3.18 and Supplements

National Electrical Manufacturers Association (NEMA) - Publication Sales - 1300 N. 17th Street, Suite 1847 - Rosslyn, Va. 22209, United States of America.

1.4 Intended audience

This Conformance Statement is intended for:

- Potential users;
- System integrators of medical equipment;
- Software designers implementing DICOM interfaces;

1.5 Warning to the Reader

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

If another device matches this Conformance Statement based on the comparison with its own Conformance Statement, there is a chance, but no guarantee that they interoperate. DICOM only deals with communication; it is not a standard which specifies what is needed for certain applications to run on a device.

2 Document history

Version	Changes	Authors	Date
1	Creation	Fabien BOISSE	16 Jul 2001
2	Update	Gilles MEVEL	12 Feb 2002
3	Update	Gilles MEVEL / Jérôme GUIGNOT	31 Mar 2003
4	Update	Gilles MEVEL / Jérôme GUIGNOT	01 Jun 2007
5	Update	Gilles MEVEL	10 Mar 2008
6	Update	Gilles MEVEL	20 Jun 2008

7	Update 4.22	Gilles MEVEL	11 Dec 2008
8	Update 4.40	Gilles MEVEL	28 Sep 2009
9	Update 4.60	Gilles MEVEL	19 Nov 2010
10	Update 4.62	Gilles MEVEL	13 Nov 2010
11	Update 4.64	Gilles MEVEL	20 Sep 2011

3 Implementation Model

3.1 Application Data Flow Diagram

DICOM PRI is a Windows application that allows transforming your PC into a DICOM 3.0 Print Server.

DICOM PRI application will appear in the system tray of Windows task bar and run continuously until stopped.
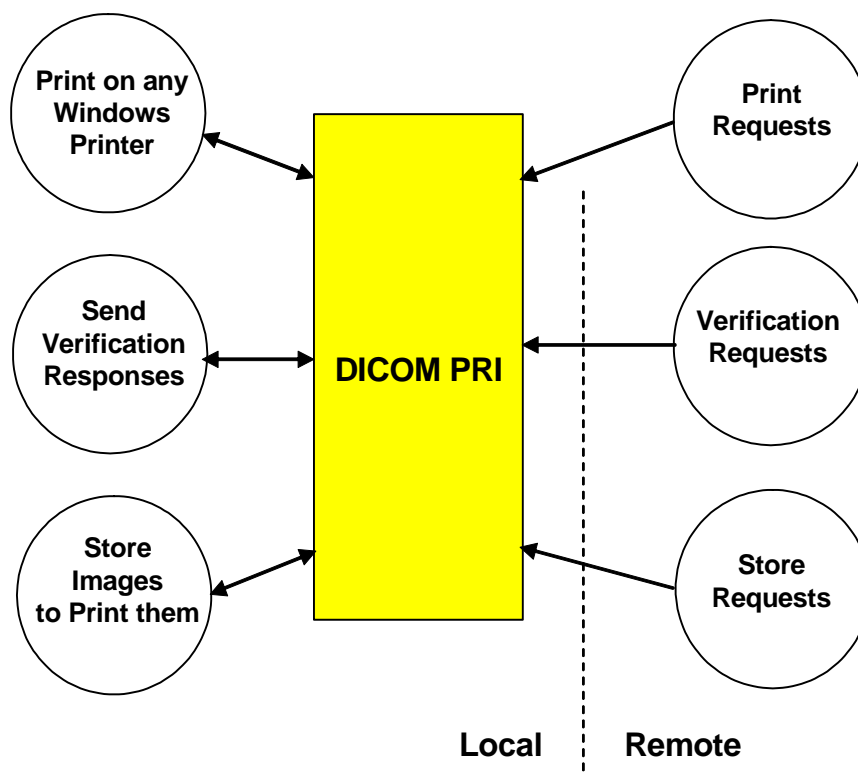

Figure 3.1 DICOM PRI Implementation Model

3.2 Functional Definitions of AE's

In some configurations (Avdanced Edition), DICOM PRI can be called with different AE Titles, each one having the same behavior. This only allows DICOM PRI to drive several

printer devices, or to have different behaviors according to the (calling AETitle, called AETitle) pair value.

3.2.1 Verification Service as SCP

DICOM PRI waits for another application to connect at the presentation address configured for its Application Entity Title. When another application connects, DICOM PRI expects it to be a DICOM application. DICOM PRI will accept associations with Presentation Contexts for SOP Classes of the Verification Service Class.

3.2.2 Print Services as SCP

Once started, DICOM PRI waits for association requests, and, for each accepted request, processes on the association the received print commands compatible with the SOP Classes it supports. Associations are released either on Print SCU request or when an error condition occurs that leads to an association abort.

3.2.3 Storage Services as SCP

DICOM PRI may be configured to accept on storage requests, according to the calling AE Title and the called AE Title. When storage requests are accepted, images may be received via C-STORE commands, and images are stored for later automatic printing. Associations are released either on Print SCU request or when an error condition occurs that leads to an association abort.

3.3 Sequencing of Real-World Activities

Not Applicable.

4   Application Entity Specifications

DICOM PRI exists as a single Application Entity (AE).

In Advanced Edition, DICOM PRI determines its capabilities according to the calling AE Title and the called AE Title specified in the incoming association request. This section provides information on the maximum capabilities of DICOM PRI AE.

DICOM PRI provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCP specified in Tables 4.1a and 4.1b:

Table 4.1a Supported SOP Classes for DICOM PRI

SOP Class Name	SOP Class UID
Verification SOP Class	1.2.840.10008.1.1
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18
Basic Film Session	1.2.840.10008.5.1.1.1
Basic Film Box	1.2.840.10008.5.1.1.2
Basic Grayscale Image Box	1.2.840.10008.5.1.1.4
Basic Color Image Box	1.2.840.10008.5.1.1.4.1
Printer	1.2.840.10008.5.1.1.16
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23

Table 4.1b Supported Storage SOP Classes for DICOM PRI

SOP Class Name	SOP Class UID
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Digital XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Intra Oral XRay Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra Oral XRay Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
US Multiframe Image Storage (RET)	1.2.840.10008.5.1.4.1.1.3
US Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
US Image Storage (RET)	1.2.840.10008.5.1.4.1.1.6
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Multiframe Secondary Capture Single Bit Image Storage	1.2.840.10008.5.1.4.1.1.7.1
Multiframe Secondary Capture Byte Image Storage	1.2.840.10008.5.1.4.1.1.7.2
Multiframe Secondary Capture Word Image Storage	1.2.840.10008.5.1.4.1.1.7.3
Multiframe Secondary Capture True Color Image Storage	1.2.840.10008.5.1.4.1.1.7.4
XRay Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1
XRay Fluoroscopy Image Storage	1.2.840.10008.5.1.4.1.1.12.2
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
Ophthalmic Photography 8Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1
Ophthalmic Photography 16Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2

4.1 Association Establishment Policies

4.1.1 General

Minimum PDU size accepted: 4096 bytes
Maximum PDU size accepted: 131072 bytes

4.1.2 Number of Associations

The number of simultaneous associations supported may be defined in DICOM PRI configuration panel.

4.1.3 Asynchronous Nature

DICOM PRI does not support asynchronous operations.

4.1.4 Implementation Identifying Information

DICOM PRI will respond with the following implementation identifying parameters:

Table 4.2 Application Identification Information for DICOM PRI

Name	SOP Class UID
Implementation Class UID	1.2.250.1.59.3.0.3.5.3
Application Context Name	1.2.840.10008.3.1.1.1
Implementation Version Name	ETIAM_DCMTK_353

4.2 Association Initiation by Real-World Activity

DICOM PRI will never initiate any association.

4.3 Association Acceptance Policy

DICOM PRI will accept associations to support Basic Print Management and Verification Services.

4.3.1 Real World Activity

4.3.1.1 Associated Real-World Activity

The application entity waits for incoming associations. No operator action is required to receive DICOM print jobs or verification requests.

On reception of C-STORE storage requests, DICOM PRI will store the incoming dataset in a temporary directory, and group received data per Patient (PatientsName / PatientID). When no data has been received by DICOM PRI regarding a given patient (PatientsName / PatientID), and since a configurable amount of time, DICOM PRI will start the printing process of all images received for this patient.

4.3.1.2 Presentation Context Table

DICOM PRI accepts the following Presentation Contexts:

Table 4.3: Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Verification SOP Class	1.2.840.10008.5.1.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None
Storage SOP Class	See table 4.1b	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP	None

4.3.1.3 SOP Specific Conformance for Printer SOP Class

The Printer SOP Class is used to monitor the status of the printer.

The following DIMSE services are supported:

> N-EVENT-REPORT
>
> N-GET

➔ N-EVENT-REPORT is used to report the changes of the printer status in an asynchronous way.

The attributes of N-EVENT-REPORT are shown in the following table:

Tag	Name	Comment
(2110,0010)	Printer Status	
(2110,0020)	Printer Status Info	

The printer status will be returned as a combination of the Printer Status attribute (2110,0010) and the Printer Status Info attribute (2110,0020) of the Printer SOP Class.

Printer Status	Printer Status Info	Meaning
NORMAL		Printer OK
WARNING		General printer warning, no specific information is available.
WARNING	SUPPLY EMPTY	Printer dispenser is empty.
WARNING	PRINTER OFFLINE	Printer is Offline
WARNING	FILM JAM	No more paper or film in the Printer
FAILURE		General failure of the printer.

➔ N-GET retrieves an instance of the Printer SOP Class.

The attributes of N-GET are shown in the following table:

Tag	Name	Comment
(2110,0010)	Printer Status	Always returns NORMAL
(2110,0020)	Printer Status Info	Always returns NORMAL
(2110,0020)	Printer Name	Returns the value configured in file DcmPri.cfg
(2110,0020)	Manufacturer	Returns the name configured in file DcmPri.cfg
(2110,0020)	Manufacturer Model Name	Returns the name configured in file DcmPri.cfg
(2110,0020)	Device Serial Number	Returns the name configured in file DcmPri.cfg
(2110,0020)	Software versions	Returns the name configured in file DcmPri.cfg
(2110,0020)	Date Last Calibration	Returns the name configured in file DcmPri.cfg
(2110,0020)	Time Last Calibration	Returns the name configured in file DcmPri.cfg

The SCP will return one of the following status codes for N-GET :

Code	Status	Meaning
0x0000	Success	Success
0x0105	Failure	No such attribute

4.3.1.4 SOP Specific Conformance for Basic Film Session SOP Class

The following DIMSE services are supported:

   N-CREATE
   N-SET
   N-DELETE
   N-ACTION

➔ N-CREATE is sent by the SCU AE to create a Basic Film Session SOP instance, when an association has been established. If N-CREATE operation fails, an error message will be returned by the SCP AE. The N-CREATE causes the Basic Film Session to be created and its attributes initialized.

The Basic Film Session SOP instances shall be created before the Film Box SOP Instances are created.

DICOM PRI provides the following support for the attributes contained in the N-CREATE DIMSE Service of the Basic Film Session SOP Class:

Tag	Name	Comment
(2000,0010)	Number of copies	Any integer between 1 and 99. Default is 1
(2000,0020)	Print Priority	Enumerated value: LOW, MED or HIGH. Default is MED. Attribute ignored.
(2000,0030)	Medium Type	Enumerated value: PAPER, BLUE FILM or CLEAR FILM. Default is PAPER.
(2000,0040)	Film Destination	Enumerated value: MAGAZINE or PROCESSOR. Attribute ignored.
(2000,0050)	Film Session Label	Up-to 64 characters.

The SCP will return one of the following status codes for N-CREATE:

Code	Status	Meaning
0x0000	Success	Film session is successfully created
0x0106	Failure	Invalid attribute value
0x0213	Failure	Resource limitation
0xB600	Warning	Memory allocation error

Note: DICOM PRI has a limitation for the number of created Film Sessions, and thus avoids too many films to be printed simultaneously.

➔ N-SET is used to update an instance of the Basic Film Session SOP Class.

The SCP will return one of the following status codes for N-SET:

Code	Status	Meaning
0x0000	Success	Film session is successfully updated
0x0106	Failure	Invalid attribute value
0xB600	Warning	Memory allocation error

➔ N-DELETE is used to delete the complete Basic Film Session SOP Instance hierarchy.

The SCP will return one of the following status codes for N-DELETE:

Code	Status	Meaning
0x0000	Success	Film session has been successfully deleted

➔ N-ACTION is used to print the film session an instance of the Basic Film Session SOP Class.

The SCP will return one of the following status codes for N- ACTION:

Code	Status	Meaning
0x0000	Success	Films in the film session are accepted for printing
0xC600	Failure	Film Session SOP Instance hierarchy does not contain Film Box SOP Instances.
0xB602	Warning	Film Session SOP Instance hierarchy does not contain Image Box SOP Instances (empty page).
0xC604	Failure	Image position collision: multiple images are assigned to a single image position.
0x0213	Failure	Resources limitation

4.3.1.5 SOP Specific Conformance for Basic Film Box SOP Class

The following DIMSE services are supported:

  N-CREATE
  N-SET
  N-DELETE
  N-ACTION

➔ N-CREATE is sent by the SCU AE to create a Basic Film Box, once a Film Session has been successfully created.

The attributes of N-CREATE are shown in the following table:

Tag	Name	Comment
(2010,0010)	Image Display Format	STANDARD\m,n
(2010,0040)	Film Orientation	Enumerated value: PORTRAIT or LANDSCAPE. Default is PORTRAIT.
(2010,0050)	Film Size ID	Enumerated value: 　8INX10IN 　10INX12IN 　10INX14IN 　11INX14IN 　14INX14IN 　14INX17IN 　24CMX24CM 　24CMX30CM 　A3 or A4 *See note*
(2010,0060)	Magnification Type	Enumerated value: NONE, BILINEAR. Default is BILINEAR. Any other value will be considered and treated as BILINEAR.
(2010,0080)	Smoothing Type	Attribute ignored
(2010,0100)	Border Density	Enumerated value: WHITE or BLACK. Attribute ignored. Always WHITE.
(2010,0110)	Empty Image Density	Enumerated value: WHITE or BLACK, or a valid Optical Density. Default is WHITE.
(2010,0120)	Minimum Density	Default is 20 or may be found in GSDF calibration file
(2010,0130)	Maximum Density	Default is 300 or may be found in GSDF calibration file
(2010,0140)	Trim	Default is NO. Attribute ignored.
(2020,0500)	Referenced Presentation LUT Sequence	Accepted if the Presentation LUT SOP class has been negotiated, and a Presentation LUT SOP Instance has been successfully created.
(0008,1150)	> Referenced SOP Instance UID	Required if sequence is present.
(0008,1155)	> Referenced SOP Class UID	Required if sequence is present.
(2010,015E)	Illumination	Accepted if the Presentation LUT SOP class has been negotiated, and a Presentation LUT SOP Instance has been successfully created. Default is 150, but may be set in the GSDF configuration file associated to the printer.
(2010,0160)	Reflected Ambient light	Accepted if the Presentation LUT SOP class has been negotiated, and a Presentation LUT SOP Instance has been successfully created. Default is 0.

Note: DICOM PRI performs a mapping between DICOM defined terms and common paper sizes. This mapping overrides the input enumerated values and is user defined in DICOM PRI configuration menu.

The SCP will return one of the following status codes for N-CREATE:

Code	Status	Meaning
0x0000	Success	Film Box is successfully created
0x0120	Failure	Missing one or more mandatory attributes
0x0106	Failure	Invalid attribute value
0x0117	Failure	Invalid object instance
0x0110	Failure	Processing failure
0x0213	Failure	Resources limitation

➔ N-SET DIMSE service will allow updating the following Film Box attributes:

Tag	Name
(2010,0060)	Magnification Type
(2010,0080)	Smoothing Type
(2010,0100)	Border Density
(2010,0110)	Empty Image Density
(2010,0120)	Minimum Density
(2010,0130)	Maximum Density
(2010,0140)	Trim
(2010,0150)	Configuration Information

The SCP will return one of the following status codes for N-SET:

Code	Status	Meaning
0x0000	Success	Film Box is successfully created
0x0106	Failure	Invalid attribute value
0x0110	Failure	Processing failure
0x0105	Failure	No such attribute

➔ N-DELETE is used to delete the Basic Film Box.

The SCP will return one of the following status codes for N- DELETE:

Code	Status	Meaning
0x0000	Success	Film Box has been successfully deleted

➔ N-ACTION is used to print one or more copies of a single film of the Film Session.

The SCP will return one of the following status codes for N- ACTION:

Code	Status	Meaning
0x0000	Success	Film accepted for printing
0xB603	Warning	Film Box SOP Instance hierarchy does not contain Image Box SOP Instances (empty page).
0xC604	Failure	Image position collision: multiple images are assigned to a single image position.
0x0213	Failure	Resources limitation

4.3.1.6 SOP Specific Conformance for Basic Grayscale Image Box SOP Class

The following DIMSE services are supported:

   N-SET

➔ N-SET may be used to update an instance of the Basic Grayscale Image Box.

The attributes of N-SET are shown in the following table:

Tag	Name	Comment
(2020,0010)	Image Position	
(2020,0020)	Polarity	Enumerated value: NORMAL or REVERSE. Attribute ignored. Always NORMAL.
(2010,0060)	Magnification Type	Enumerated value: NONE, BILINEAR. Default is BILINEAR. Any other value will be considered and treated as BILINEAR.
(2010,0080)	Smoothing Type	Attribute ignored.
(2020,0030)	Requested Image Size	
(2020,0110)	Basic Grayscale Image Sequence	
(0028,0002)	>Samples Per Pixel	1
(0028,0004)	>Photometric Interpretation	Enumerated value: MONOCHROME1 or MONOCHROME2. Mandatory. No default.
(0028,0010)	>Rows	Mandatory. No default.
(0028,0011)	>Columns	Mandatory. No default.
(0028,0100)	>Bits Allocated	Valid range is 8 to 16. Mandatory. No default.
(0028,0101)	>Bits Stored	Valid range is 8 to 16. Mandatory. No default.
(0028,0102)	>High Bit	Valid range is 8 to 16. Mandatory. No default. Should be (Bits Stored - 1)
(0028,0103)	>Pixel Representation	Mandatory. No default
(0028,0034)	>Pixel Aspect Ratio	
(7FE0,0010)	>Pixel Data	Mandatory. No default

The SCP will return one of the following status codes for N-SET :

Code	Status	Meaning
0x0000	Success	Image successfully stored in Image Box
0x0106	Failure	Invalid attribute value
0x0110	Failure	Processing failure
0x0120	Failure	Missing one or more mandatory attributes

4.3.1.7 SOP Specific Conformance for Basic Color Image Box SOP Class

The following DIMSE services are supported:

N-SET

➔ N-SET may be used to update an instance of the Basic Grayscale Image Box.

The attributes of N-SET are shown in the following table:

Tag	Name	Comment
(2020,0010)	Image Position	
(2020,0020)	Polarity	Enumerated value: NORMAL or REVERSE. Attribute ignored. Always NORMAL.
(2010,0060)	Magnification Type	Attribute ignored. Always BILINEAR assumed.
(2010,0080)	Smoothing Type	Attribute ignored.
(2020,0030)	Requested Image Size	
(2020,0110)	Basic Grayscale Image Sequence	
(0028,0002)	>Samples Per Pixel	3
(0028,0004)	>Photometric Interpretation	RGB. Mandatory.
(0028,0006)	>Planar Configuration	0 or 1
(0028,0010)	>Rows	Mandatory. No default.
(0028,0011)	>Columns	Mandatory. No default.
(0028,0100)	>Bits Allocated	8
(0028,0101)	>Bits Stored	8
(0028,0102)	>High Bit	7
(0028,0103)	>Pixel Representation	
(0028,0034)	>Pixel Aspect Ratio	
(7FE0,0010)	>Pixel Data	Mandatory. No default

The SCP will return one of the following status codes for N-SET :

Code	Status	Meaning
0x0000	Success	Image successfully stored in Image Box
0x0106	Failure	Invalid attribute value
0x0110	Failure	Processing failure
0x0120	Failure	Missing one or more mandatory attributes

4.3.1.8 SOP Specific Conformance for Presentation LUT SOP Class

The following DIMSE services are supported:

   N-CREATE

➔ N-CREATE may be used to create an instance of the Presentation LUT SOP Class.

The attributes of N-CREATE are shown in the following table:

Tag	Name	Comment
(2050,0010)	Presentation LUT Sequence	
(0028,3002)	> LUT Descriptor	
(0028,3003)	> LUT Explanation	
(0028,3006)	> LUT Data	
(2050,0020)	Presentation LUT Shape	Enumerated values IDENTITY, INVERSE, LIN OD

The SCP will return one of the following status codes for N-CREATE:

Code	Status	Meaning
0x0000	Success	Image successfully stored in Image Box
0x0105	Failure	Unknown or unsupported attribute
0x0110	Failure	Processing failure
0x0111	Failure	Duplicate SOP Instance

4.3.1.9 SOP Specific Conformance for Storage SOP Classes

The following DIMSE services are supported:

  C-STORE

➜ C-STORE requests are used by the SCU to store datasets to DICOM PRI.

4.3.1.10 Presentation Context Acceptance Criterion

N/A

4.3.1.11 Transfer Syntax Selection Policies

DICOM PRI will always prefer Little Endian Explicit VR transfer syntax when provided by SCU clients. However, it may be configured to NOT support Little Endian Explicit VR.

5 Communication Profiles

5.1 Supported Communications Stacks

DICOM PRI provides DICOM V3.0 TCP/IP Network Communication Support as defined in PS 3-8 of the DICOM Standard.

5.2 TCP/IP Stack

DICOM PRI inherits its TCP/IP stack from the Windows system upon which it executes.

5.3 Physical Media Support

DICOM PRI is indifferent to the physical medium over which TCP/IP executes; it inherits this from the system upon which it executes.

6   Extensions/Specialization/Privatization

No extensions defined.

7   Configuration

DICOM PRI configuration is included in the application user interface through the Configuration Dialog.

7.1 AE Title/Presentation Address Mapping

Not Applicable.

7.2 Configurable Parameters

7.2.1   Standard Configuration

DICOM PRI configurable parameters may be defined in the Configuration Dialog Box of the user interface. They are the following:

- TCP/IP port : default is 3100
- AE Title : default is PRINT
- Support of Basic Grayscale Print Management (on/off)
- Support of Basic Color Print Management (on/off)
- Support of Presentation LUT (on/off)
- Support of Storage to Print facility (on/off)
- Log events: Log all events or not (verbose) in the log window of the application.
- Debug: creates a detailed log file in a *logfiles* subdirectory besides the application.
- Film Size Matching: This option lets you specify the matching rules between DICOM defined Film IDs and common paper sizes.
- GSDF calibration: As DICOM PRI may manage several printers, you may define for each printer a GSDF calibration file that specifies: the default Illumination, the max DDL value, for a range of DDL input values, ranging from 0 to the maximum value, the corresponding measured ODs.
- DICOM PRI has a limitation for the number of created Film Sessions, and thus avoids too many films to be printed simultaneously. Maximum number of simultaneous created Film Sessions is 6.
- DICOM PRI may be configured to handle printing requests from client that have a strange (even illegal) interpretation of the standard. Two common cases are the following:

  - Print SCU negotiates successfully Grayscale and Color printing. Films boxes are then created using the grayscale presentation context for example, and thus grayscale image box instances are created and returned to the SCU. However, some SCU ignore the SOP Class of the returned image boxes, and do not hesitate to fill them with color pixel data using an N-SET command message on images.

For this, in the N-SET message, the SCU even change the SOP Class UID of image to Color ImageBox SOP Class.
To handle this frequent illegal SCU behavior, DICOM PRI introduces internal "Proxy image boxes", that accept to dynamically change image box SOP Classes. DICOM PRI configuration panel allows making use of these "proxy" images boxes. This is however not the default.

- Some Print SCU implementation of some well-known vendors will fail if an N-CREATE-RSP message for a FilmBox creation contains the optional Referenced Film Session information. DICOM PRI configuration panel let user change default SCP behavior, which is to NOT to return the Referenced Film Session Information.

7.2.2 Optional Configuration

7.2.2.1 Called AETitle routing

According to DICOM PRI versions, it may possible to use the Called AETitle and the medium type to select a destination printer if several printers are available (local or network).

This particular configuration does not alter the general behavior of the software, and is described in a dedicated separate document (User's Guide).

7.2.2.2 Calling AETitle limitations

DICOM PRI may be configured to accept print requests from only a restricted set of Calling AETitles.

This particular configuration does not alter the general behavior of the software, and is described in a dedicated separate document (User's Guide).

8   Support of Extended Character Sets

DICOM PRI supports Extended Character Set "ISO_IR 100" Latin alphabet N° 1, supplementary set.

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