

# DICOM Conformance Statement

Application Annex:  
Nuclear Medicine Viewer on  
Xcelera R3.2L1 SP2



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## Table of Contents

<b>1.</b>	<b>INTRODUCTION .....</b>	<b>4</b>
<b>1.1.</b>	<b>REVISION HISTORY .....</b>	<b>4</b>
<b>1.2.</b>	<b>TERMINOLOGY .....</b>	<b>4</b>
<b>2.</b>	<b>DATA SPECIFICATIONS .....</b>	<b>5</b>
<b>2.1.</b>	<b>SUPPORTED IOD'S .....</b>	<b>5</b>
2.1.1.	Acceptance Criteria .....	5
2.1.2.	Contents of Created IOD's .....	5
2.1.2.1.	Secondary Capture Image Storage SOP Class .....	6
<b>2.2.</b>	<b>STANDARD EXTENDED/SPECIALIZED/PRIVATE SOPS.....</b>	<b>8</b>
2.2.1.	Standard Extended/Specialized/Private SOP Instance .....	8
2.2.1.1.	Secondary Capture Image Storage SOP Class .....	8

## 1. Introduction

This DICOM Conformance Statement annex is applicable to the Nuclear Medicine Viewer on Xcelera R3.2L1 SP2 hosting platform. In general the Nuclear Medicine Viewer is the user environment for viewing and analyzing Nuclear medicine images. This clinical application includes the AutoQuant application as well.

### 1.1. Revision History

The revision history below provides dates and differences among individual document versions.

**Table 1: Revision History**

Document Version	Date of Issue	Status	Description
00	02-January-2012	Final version	Initial version

### 1.2. Terminology

DICOM	Digital Imaging and Communications in Medicine
IOD	Information Object Definition
UID	Unique Identifier
VR	Value Representation

## 2. Data Specifications

### 2.1. Supported IOD's

This section specifies each IOD accepted and / or created by Nuclear Medicine Viewer.

ACCEPTED	The applicable IOD is accepted for storage in the repository of the hosting platform and supported for import in Nuclear Medicine Viewer for viewing and analysis.
CREATED	The Nuclear Medicine Viewer supports generation of derived data by using the applicable IOD and is able to store this data in the repository of the hosting platform.

**Table 2: Supported IOD's**

IOD		Support	
Name	UID	ACCEPTED	CREATED
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20	Yes	No

#### 2.1.1. Acceptance Criteria

This section specifies the acceptance criteria applied by Nuclear Medicine Viewer to which a dataset should adhere before it can be imported into the application. This can be criteria on the highest level (e.g. data from a certain manufacturer or system model) or certain DICOM attributes mandatory to be present into the dataset holding a specific value. In case one or more Philips private attributes are required, then a list of supported Philips system models will be mentioned.

**Table 3: Accepted system models**

Manufacturer	Modality	System Model Name(s)
Not applicable	Not applicable	Not applicable

**Table 4: Accepted transfer syntaxes per IOD**

IOD	
Name	UID
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7
Nuclear Medicine Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.20

**Table 5: Accepted attribute values**

Attribute Name	Attribute Number	Values / Comments
Modality	0008,0060	Must equal to "NM"

#### 2.1.2. Contents of Created IOD's

This section specifies in detail the attribute contents of created data objects. Attributes are grouped together by its corresponding module as specified by DICOM standard. Philips private attributes are excluded for specification.

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

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

- ANAPCV The attribute is present under specified condition – if present then its Value is Not Always Present (attribute sent zero length if condition applies and no value is present)
- ANAPEV The attribute is present under specified condition – if present then it will not have any value

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

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

### 2.1.2.1. Secondary Capture Image Storage SOP Class

**Table 6: IOD of Created Secondary Capture Image Storage SOP Class Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Study	Patient Study Module	CONDITIONAL
Series	General Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Equipment	SC Equipment Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	SC Image Module	ALWAYS
Image	SOP Common Module	ALWAYS
	Extended Dicom and Private attributes	

**Table 7: Patient Module**

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

**Table 8: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		ALWAYS	COPY	-
Study Time	0008,0030	TM		ALWAYS	COPY	-
Accession Number	0008,0050	SH		VNAP	AUTO	-
Referring Physician's Name	0008,0090	PN		VNAP	COPY	-
Study Description	0008,1030	LO		VNAP	COPY	-
Study Instance UID	0020,000D	UI		ALWAYS	COPY	-
Study ID	0020,0010	SH		EMPTY	AUTO	-

**Table 9: Patient Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Patient's Size	0010,1020	DS		ALWAYS	COPY	-

Patient's Weight	0010,1030	DS		ALWAYS	COPY	-
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Table 10: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ALWAYS	AUTO	-
Series Time	0008,0031	TM		ALWAYS	AUTO	-
Series Description	0008,103E	LO	AQ Raw_SS	ALWAYS	AUTO	-
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-
Series Number	0020,0011	IS		ALWAYS	AUTO	-

Table 11: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	PHILIPS Nuclear Medicine	ALWAYS	COPY	-
Institution Name	0008,0080	LO		ALWAYS	COPY	-
Station Name	0008,1010	SH		ALWAYS	COPY	-
Manufacturer's Model Name	0008,1090	LO		ALWAYS	COPY	-
Software Version(s)	0018,1020	LO	Value 1: AIM_DICOM_200	ALWAYS	AUTO	-

Table 12: SC Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS	NM	ALWAYS	AUTO	-
Conversion Type	0008,0064	CS	WSD	ALWAYS	AUTO	-
Secondary Capture Device Manufacturer	0018,1016	LO		ALWAYS	AUTO	-
Secondary Capture Device Manufacturer's Model Name	0018,1018	LO	Automatic Quantitative Perfusion and Function SPECT	ALWAYS	AUTO	-
Secondary Capture Device Software Version(s)	0018,1019	LO		ALWAYS	AUTO	-
Digital Image Format Acquired	0018,1023	LO	Screen capture	ALWAYS	AUTO	-

Table 13: General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS	Value 1: DERIVED, ORIGINAL	ALWAYS	AUTO	-
Acquisition Date	0008,0022	DA		ALWAYS	AUTO	-
Content Date	0008,0023	DA		ALWAYS	AUTO	-
Acquisition Time	0008,0032	TM		ALWAYS	AUTO	-
Content Time	0008,0033	TM		ALWAYS	AUTO	-
Derivation Description	0008,2111	ST		ALWAYS	AUTO	-
Acquisition Number	0020,0012	IS		ALWAYS	COPY	-
Instance Number	0020,0013	IS		ALWAYS	AUTO	-
Patient Orientation	0020,0020	CS		VNAP	AUTO	-

Table 14: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Samples per Pixel	0028,0002	US	3	ALWAYS	AUTO	-

Photometric Interpretation	0028,0004	CS	RGB	ALWAYS	AUTO	-
Planar Configuration	0028,0006	US	0x0000	ALWAYS	AUTO	-
Rows	0028,0010	US		ALWAYS	AUTO	-
Columns	0028,0011	US		ALWAYS	AUTO	-
Bits Allocated	0028,0100	US	8	ALWAYS	AUTO	-
Bits Stored	0028,0101	US	8	ALWAYS	AUTO	-
High Bit	0028,0102	US	7	ALWAYS	AUTO	-
Pixel Representation	0028,0103	US	0x0000	ALWAYS	AUTO	-
Pixel Data	7FE0,0010	OW/OB		ALWAYS	AUTO	-

Table 15: SC Image Module

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

Table 16: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	COPY	Required if expanded/replacement character set used
Instance Creation Date	0008,0012	DA		ALWAYS	AUTO	-
Instance Creation Time	0008,0013	TM		ALWAYS	AUTO	-
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.7	ALWAYS	AUTO	-
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	-

## 2.2. Standard Extended/Specialized/Private SOPs

Table 17: List of created SOP Classes

SOP Class Name	SOP Class UID
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7

### 2.2.1. Standard Extended/Specialized/Private SOP Instance

#### 2.2.1.1. Secondary Capture Image Storage SOP Class

Table 18: Extended DICOM and private attributes for Secondary Capture Image Storage SOP Class Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Referenced Series Sequence	0008,1115	SQ		ALWAYS	AUTO	-
>Referenced Instance Sequence	0008,114A	SQ		ALWAYS	AUTO	-
>>Referenced SOP Class UID	0008,1150	UI		VNAP	AUTO	-
>>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	-
>Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-