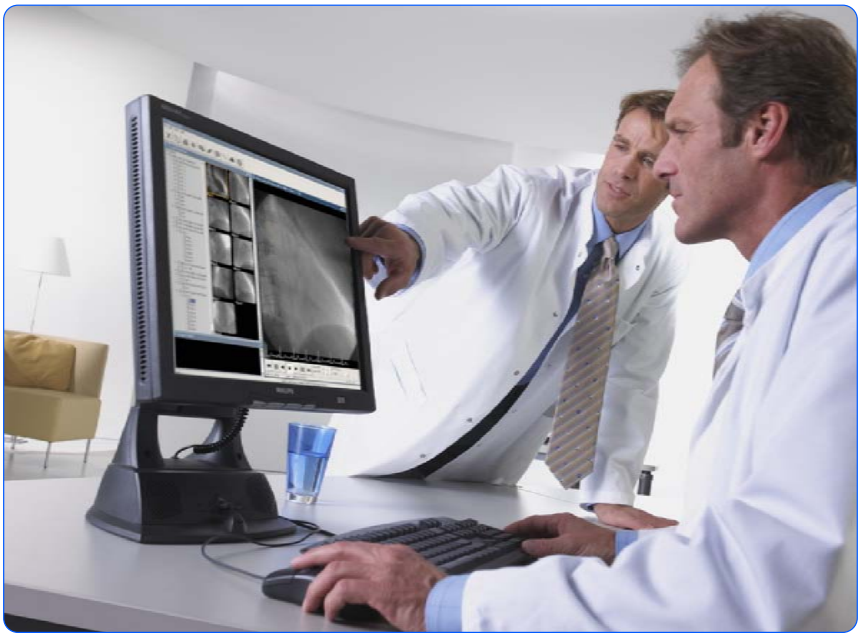
DICOM

Conformance Statement

Xcelera Cathlab Management R2.1 with Allura/Integris/Visub Interface



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1. INTRODUCTION

This chapter provides general information about the purpose, scope and contents of this Conformance Statement.

1.1. Scope and Field of Application

The scope of this DICOM Conformance Statement is to facilitate data exchange with equipment of Philips Medical Systems. This document specifies the compliance to the DICOM standard (formally called the NEMA PS 3.X standards). It contains a short description of the applications involved and provides technical information about the 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.
The field of application is the integration of the Philips Medical Systems equipment into an environment of medical devices. This Conformance Statement should be read in conjunction with the DICOM standard and its addenda [DICOM].

1.2. Intended Audience

This Conformance Statement is intended for:

- (potential) customers
- system integrators of medical equipment
- marketing staff interested in system functionality
- software designers implementing DICOM interfaces

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

1.3. Contents and Structure

The DICOM Conformance Statement is contained in chapter 2 through 7 and follows the contents and structuring requirements of DICOM PS 3.2.

1.4. Used Definitions, Terms and Abbreviations

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

1.5. References

[DICOM] The Digital Imaging and Communications in Medicine (DICOM) standard (NEMA PS 3.X):
National Electrical Manufacturers Association (NEMA)
Publication Sales 1300 N. 17th Street, Suite 1847
Rosslyn, Va. 22209, United States of America

1.6. Important Note to the Reader

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

- **Interoperability**

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

- **Validation**

Philips equipment has been carefully tested to assure that the actual implementation of the DICOM interface corresponds with this Conformance Statement.
Where Philips equipment is linked to non-Philips equipment, the first step is to compare the relevant Conformance Statements. If the Conformance Statements indicate that successful information exchange should be possible, additional validation tests will be necessary to ensure the functionality, performance, accuracy and stability of image and image related data. It is the responsibility of the user (or user's agent) to specify the appropriate test suite and to carry out the additional validation tests.

- **New versions of the DICOM Standard**

The DICOM Standard will evolve in future to meet the user's growing requirements and to incorporate new features and technologies. Philips is actively involved in this evolution and plans to adapt its equipment to future versions of the DICOM Standard. In order to do so, Philips reserves the right to make changes to its products or to discontinue its delivery.
The user should ensure that any non-Philips provider linking to Philips equipment also adapts to future versions of the DICOM Standard. If not, the incorporation of DICOM enhancements into Philips equipment may lead to loss of connectivity (in case of networking) and incompatibility (in case of media).

1.7. General Acronyms and Abbreviations.

The following acronyms and abbreviations are used in the document.

ACC	American College of Cardiology
AE	Application Entity
ACR	American College of Radiology
ANSI	American National Standard Institute
DICOM	Digital Imaging and Communication in Medicine
DIMSE	DICOM Message Service Element
ELE	Explicit VR Little Endian
EBE	Explicit VR Big Endian
ILE	Implicit VR Little Endian
IOD	Information Object Definition
NEMA	National Electrical Manufacturers Association
PDU	Protocol Data Unit
RIS	Radiology Information System
RWA	Real World Activity
SCU	Service Class User
SOP	Service Object Pair
TCP/IP	Transmission Control Protocol/Internet protocol
UID	Unique Identifier

2. IMPLEMENTATION MODEL

The Xcelera Cathlab Management Release 1.2 of Philips Medical Systems is a Cardiology Information System (CIS). It's supports DICOM Worklist Management (WLM), DICOM Modality Performed Procedure Step (MPPS) and other protocols (these are not in the scope of this document).

Xcelera Cathlab Management includes the following components:

- The Xcelera Cathlab Management system contains a database server and several Xcelera Cathlab Management Clients. The Xcelera Cathlab Management Clients send patient demographic data to the database server.
- The Xcelera Cathlab Management system contains the CL-Link program. The Xcelera Cathlab Management Clients send the WLM to and receives the MPPS information from the CL-Link program. This program acts as a DICOM service class provider for the:
- Basic Worklist Management. After a DICOM WLM request the Xcelera Cathlab Management CL-Link program will return the requested information, after sending the requested information all queued information in the CL-Link program is deleted.
- A DICOM service class provider for the Modality Performed Procedure Step SOP Class. The CL-Link program passes MPPS information to the Xcelera Cathlab Management Clients.
- Application Data Flow Diagram

Xcelera Cathlab Management behaves as a single Application Entity. The related Implementation Model is shown in Figure 1.

REMARK: This DICOM Conformance Statement is related to the Xcelera Cathlab Management system with a CL-Link program which has a specific DICOM interface for the Philips Integris / VISUB – IBIS product!

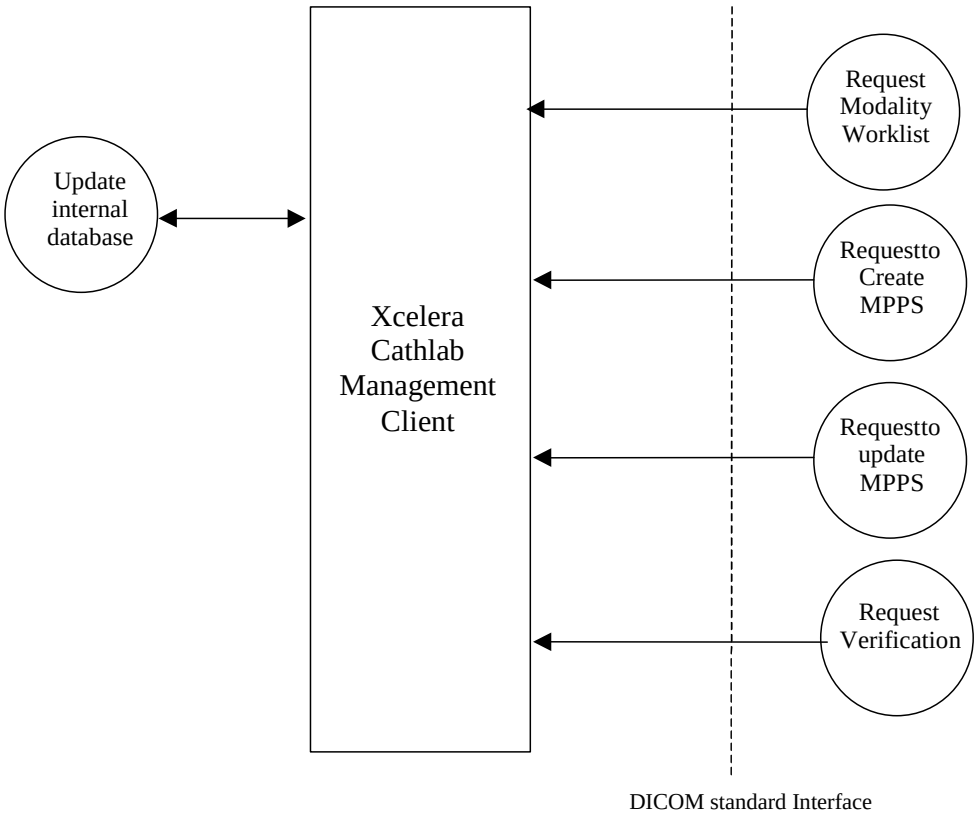

Figure 1. Xcelera Cathlab Management 2.1 DICOM implementation Model

Xcelera Cathlab Management is able to communicate with modalities according to DICOM. It will accept associations in order to receive requests from modalities for an up-to-date Worklist. The Xcelera Cathlab Management Clients forward the scheduled patient data to the CL-Link program. The CL-Link program will then retrieve the requested modality Worklist from its memory and sends it to the modality.

Xcelera Cathlab Management will also accept associations to be informed about completed acquisitions (i.e. created and changed) by the modalities. This will be received by the CL-Link and send forward to the internal general database of the Xcelera Cathlab Management system.

Xcelera Cathlab Management supports also verification requests from remote systems. This may be helpful for service engineers.

2.1. Functional definition of Application Entities

The Xcelera Cathlab Management CL-Link program Application Entity implements a DICOM Service Class Provider for the Basic Worklist Management and for the Modality Performed Procedure Step SOP Class. Both of these SCP's are contained within a single Application Entity. This Application Entity will accept Associations from other Application Entities acting as

DICOM Service Class Users (SCU). It will then process WLM and/or MPPS requests from the SCU.

The Xcelera Cathlab Management system CL-Link program supports multiple Application Entities. Each Xcelera Cathlab Management Client will have its own Application Entity within CL-Link. Each CL-Link Application Entity will support WLM and MPPS for the modality Application Entities that are configured. The number of Application Entities that can be supported by the CL-Link program depends on the resources of the system.

Xcelera Cathlab Management supports also the Verification Service as SCP.

2.1.1. Overview

Figure 2 “Xcelera Cathlab Management 2.1 in a DICOM network” gives an overview of Xcelera Cathlab Management in a network related to other devices.

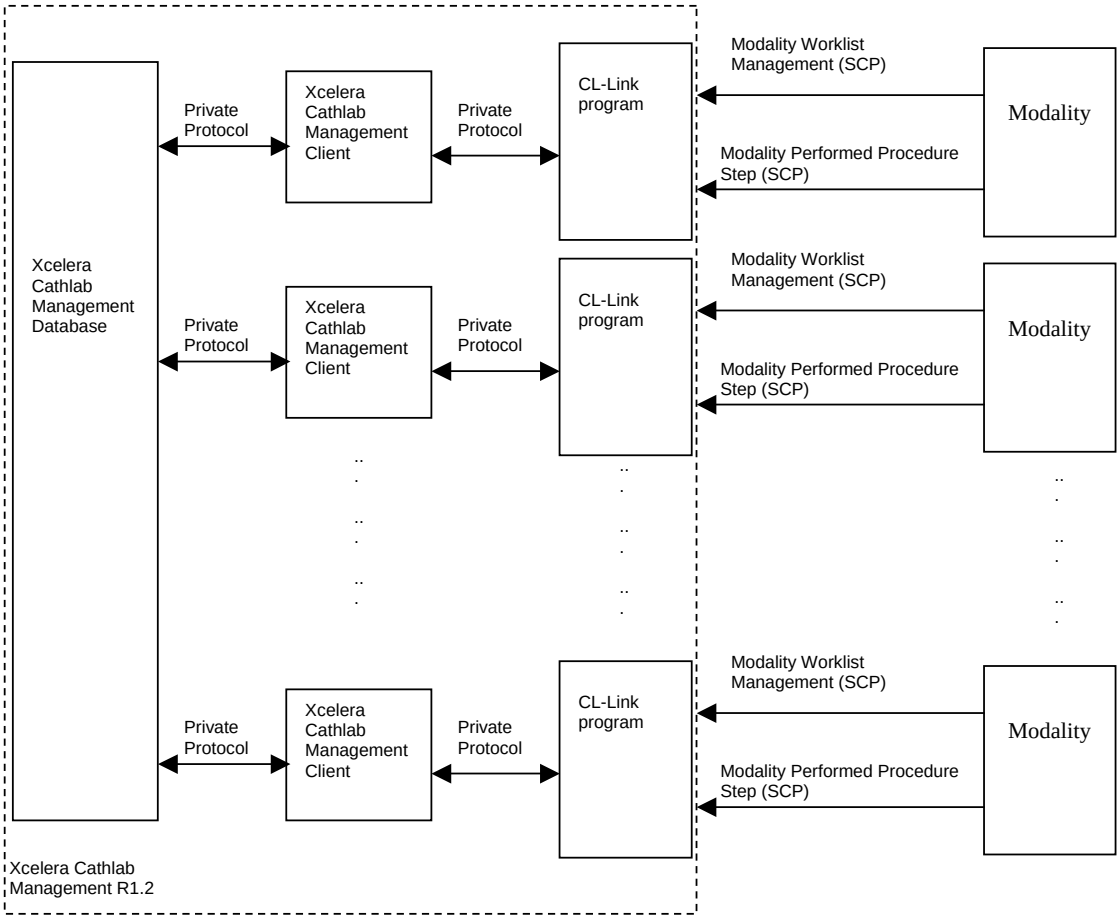

Figure 2. Xcelera Cathlab Management 2.1 in a DICOM network

2.2. Sequences of Real World Activities

Xcelera Cathlab Management requires no specific sequence of activities. However, the user of the Xcelera Cathlab Management Client has to press the “send patient demographics to cathlab” button to send the patient demographic data to the CL-Link program where the information is stored in it's memory and can be retrieved by the modalities.

3. AE SPECIFICATIONS

The Xcelera Cathlab Management system contains of several CL-Link Application Entities. A CL-Link Application Entity acts as a single Application Entity, there may be multiple instances of the CL-Link Application Entity active, but they are identical in specification except for the AE title.

3.1. Xcelera Cathlab Management AE Specification

The Xcelera Cathlab Management Application Entity provides Standard Conformance to the DICOM V3.0 SOP classes as a SCP specified in Table 1.

Table 1. Supported SOP Classes as SCP by the Xcelera Cathlab Management

SOP Class Name	UID
Verification SOP Class	1.2.840.10008.1.1
Modality Worklist Information Model - FIND SOP Class	1.2.840.10008.5.1.4.31
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3

3.1.1. Association Establishment Policies

3.1.1.1. General

The Xcelera Cathlab Management system always proposes the following DICOM Application Context Name (ACN): 1.2.840.10008.3.1.1.1

The maximum PDU length negotiation is included in all association establishment requests. The Xcelera Cathlab Management system offers a maximum PDU size on accepted associations of 28,672 bytes.

3.1.1.2. Number of Associations

There is no limit (beyond system resources) on the number of Xcelera Cathlab Management AE's that can be active simultaneously. However, each Xcelera Cathlab Management Client will have only one active association at a time.

3.1.1.3. Asynchronous Nature

Xcelera Cathlab Management allows a single outstanding operation on any association. Therefore, Xcelera Cathlab Management does not support asynchronous operations window negotiation.

3.1.1.4. Implementation Identifying Information

The Implementation Class UID:	**1.3.46.670589.16.5.211**
The implementation version name:	**XceleraCLM211**

3.1.2. Association Acceptance Policy

The Xcelera Cathlab Management Application Entity will accept no association from unknown Application Entities. Modality Application Entities that are “known” to the CL-Link program are specified during configuration of the Xcelera Cathlab Management system. These AE specifications may be easily changed at any time.

The Xcelera Cathlab Management Application Entity rejects association requests from systems that do not address the Xcelera Cathlab Management AE, i.e. that offer a wrong “ Called AE Title”. The Xcelera Cathlab Management AE Title is specified during configuration of the Xcelera Cathlab Management system. This AE Title may be easily changed at any time.

3.1.2.1. Real World Activity - Verification

3.1.2.1.1. Associated Real-World Activity

Xcelera Cathlab Management accepts associations from systems to verify application level communication using the C-ECHO Service Element.

3.1.2.1.2. Presentation Context Table

The Xcelera Cathlab Management system will accept the presentation contexts as given in the next table.

Table 2. Supported Presentation Context for the Verification service

Abstract Syntax Name	UID	Transfer Syntax	UID List	Role	Ext. Neg.
Verification SOP Class	1.2.840.10008.1.1	ILE	1.2.840.10008.1.2	SCP	None
Verification SOP Class	1.2.840.10008.1.1	ELE	1.2.840.10008.1.2.1	SCP	None
Verification SOP Class	1.2.840.10008.1.1	EBE	1.2.840.10008.1.2.2	SCP	None

3.1.2.1.3. SOP Specific Conformance

Xcelera Cathlab Management provides standard conformance to the DICOM Verification Service Class.

3.1.2.2. Real World Activity - Request for a Modality Worklist

3.1.2.2.1. Associated Real-World Activity

Xcelera Cathlab Management accepts associations from systems that wish to have an up-to-date Modality Worklist using the C-FIND command.

3.1.2.2.2. Presentation Context Table

The Xcelera Cathlab Management system will accept the presentation contexts as given in the next table.

Table 3. Supported Presentation Context for the WLM service

Abstract Syntax Name	UID	Transfer Syntax	UID List	Role	Ext. Neg.
Modality Worklist Information Model - FIND SOP Class	1.2.840.10008.5.1.4.31	ILE	1.2.840.10008.1.2	SCP	None
Modality Worklist Information Model - FIND SOP Class	1.2.840.10008.5.1.4.31	ELE	1.2.840.10008.1.2.1	SCP	None
Modality Worklist Information Model - FIND SOP Class	1.2.840.10008.5.1.4.31	EBE	1.2.840.10008.1.2.2	SCP	None

3.1.2.2.3. WLM Conformance

Relational queries are not supported.

Xcelera Cathlab Management is able to handle simultaneously multiple C-FIND requests.

Xcelera Cathlab Management doesn't support the following required matching key attribute:

- Scheduled Performing Physician's Name

When there more than one scheduled exams are sent to the queue of the Xcelera Cathlab Management CL-Link program, the Xcelera Cathlab Management cannot handle a C-FIND-RQ for date/time ranges. He always responds with ‘no matches’.

The Xcelera Cathlab Management can only handle one wildcard on a matching key in C-FIND-RQ. When more than one wildcard is used the Xcelera Cathlab Management responds with ‘no matches’.

Xcelera Cathlab Management cannot handle a C-FIND-RQ that contains the ‘Scheduled Procedure Code Sequence’. The DICOM-process on Xcelera Cathlab Management CL-Link must be restarted in case that the ‘Scheduled Procedure Code Sequence’ attribute is requested.

The applied values for the ‘Scheduled Procedure Step Start Date’ and ‘Scheduled Procedure Step Start Time' that are returned in the Worklist response are the date and time that the user of the Xcelera Cathlab Management Client has pressed the “send patient demographics to cathlab” button. The scheduled date/time used in the ‘Worklist’ on the Xcelera Cathlab Management Client are not used as applied values.

Xcelera Cathlab Management returns the C-FIND status Responses that are mentioned in Table 3-3 on page 14.

Table 4. WLM STATUS

Service Status	Status Code	Further Meaning
Refused	A700	Out of resources
Failed	A900	Identifier does not match SOP Class
	Cxxx	Unable to process
Cancel	FE00	Cancel Received
Pending	FF00	Pending, identifier supplied.
Success	0000	Matching is complete - No final identifier is supplied

All supported Return and Matching Keys are given in the following tables:

Table 5. Patient Identification Module

Attribute Name	Tag	Note
Patient's Name	0010,0010	Matching Key (Max. 16 Characters)
Patient ID	0010,0020	Matching Key (12 Characters: 00 added)
Issuer of Patient ID	0010,0021	Always empty
Other Patient Patient IDs	0010,1000	Always empty
Other Patient Patient Names	0010,1001	Always empty
Patient's Birth Name	0010,1005	Always empty
Patient's Mother's Birth Name	0010,1060	Always empty
Medical Record Locator	0010,1090	Always empty

Table 6. Patient Demographic Module

Attribute Name	Tag	Note
Patient's Birth Date	0010,0030	
Patient's Birth Time	0010,0032	Always Empty
Patient's Sex	0010,0040	Possible values: M, F
Patient's Age	0010,1010	Always Empty
Patient's Size	0010,1020	
Patient's Weight	0010,1030	
Patient's Address	0010,1040	Always Empty
Military Rank	0010,1080	Always Empty
Branch of Service	0010,1081	Always Empty
Country of Residence	0010,2150	Always Empty
Region of Residence	0010,2152	Always Empty
Patient's Telephone Numbers	0010,2154	Always Empty
Ethnic Group	0010,2160	Always Empty
Occupation	0010,2180	Always Empty
Patient's Religious Preference	0010,21F0	Always Empty
Patient Comments	0010,4000	Always Empty
Confidentiality constraint on patient data	0040,3001	Always Empty

Table 7. Patient Medical Module

Attribute Name	Tag	Note
Patient's State	0038,0500	Always Empty
Smoking Status	0010,21A0	Always Empty
Additional Patient History	0010,21B0	Always Empty
Pregnancy Status	0010,21C0	Always Empty
Last Menstrual Date	0010,21D0	Always Empty
Medical Alerts	0010,2000	Always Empty
Contrast Allergies	0010,2110	Always Empty
Special Needs	0038,0050	Always Empty

Table 8. Visit Relationship Module

Attribute Name	Tag	Note

Attribute Name	Tag	Note
Referenced Patient Sequence	0008,1120	Always Empty

Table 9. Visit Identification Module

Attribute Name	Tag	Note
Institution Name	0008,0080	
Institution Address	0008,0081	
Institution Code Sequence	0008,0082	Always Empty
Admission ID	0038,0010	Always Empty
Issuer of Admission ID	0038,0011	Always Empty

Table 10. Visit Status Module

Attribute Name	Tag	Note
Visit Status ID	0038,0008	Always Empty
Current Patient Location	0038,0300	Always Empty
Patient's Institution Residence	0038,0400	Always Empty
Current Patient Location	0038,4000	Always Empty

Table 11. Scheduled Procedure Step Module

Attribute Name	Tag	Note
Scheduled Procedure Step Sequence	0040,0100	
> Modality	0008,0060	Matching Key
> Requested Contrast Agent	0032,1070	Always Empty
> Scheduled Station AE Title	0040,0001	Matching Key
> Scheduled Procedure Step Start Date	0040,0002	Matching Key
> Scheduled Procedure Step Start Time	0040,0003	Matching Key
> Scheduled Procedure Step End Date	0040,0004	Matching Key
> Scheduled Procedure Step End Time	0040,0005	Matching Key
> Scheduled Performing Physician's Name	0040,0006	Always empty
> Scheduled Procedure Step Description	0040,0007	In case no procedure type is selected: Applied value: Dummy
> Scheduled Action Item Code Sequence	0040,0008	Always empty
> Scheduled Procedure Step ID	0040,0009	Applied value: 1
> Scheduled Station Name	0040,0010	Always empty
> Scheduled Procedure Step Location	0040,0011	Always empty
>Pre-Medication	0040,0012	Always empty
>Scheduled Procedure Step Status	0040,0020	Applied value: SCHEDULED
> Comments on the Scheduled Procedure Step	0040,0400	Always empty

Table 12. Requested Procedure Module

Attribute Name	Tag	Note
Referenced Study Sequence	0008,1110	
>Referenced SOP Class UID	0008,1150	
>Referenced SOP Instance UID	0008,1155	
Study Instance UID	0020,000D	
Requested Procedure Description	0032,1060	In case no procedure type is selected: Applied value: Dummy
Requested Procedure ID	0040,1001	Applied value: 1
Reason for the Requested Procedure	0040,1002	
Requested Procedure Priority	0040,1003	Always Empty
Patient Transport Arrangements	0040,1004	Always Empty
Requested Procedure Location	0040,1005	Always Empty
Confidentiality Code	0040,1008	Always Empty
Reporting Priority	0040,1009	Always Empty

Attribute Name	Tag	Note
Names of Intended Recipients of Results	0040,1010	Always Empty
Requested Procedure Comments	0040,1400	Always Empty

Table 13. Imaging Service Request Module

Attribute Name	Tag	Note
Accession Number	0008,0050	Matching Key
Referring Physician's Name	0008,0090	Always Empty
Requesting Physician	0032,1032	Always Empty
Requesting Service	0032,1033	Always Empty
Reason for the Imaging Service Request	0040,2001	Always Empty
Issue Date of Imaging Service Request	0040,2004	Always Empty
Issue Time of Imaging Service Request	0040,2005	Always Empty
Order Entered By	0040,2008	Always Empty
Order Enterer's Location	0040,2009	Always Empty
Order Callback Phone Number	0040,2010	Always Empty
Placer Order Number/Imaging Service Request	0040,2016	
Filler Order Number/Imaging Service Request	0040,2017	
Imaging Service Request Comments	0040,2400	Always Empty

Table 14. SOP Common Module

Attribute Name	Tag	Note
Specific Character Set	0008,0005	- See Chapter 7 for more information **Applied value: ISO-IR 100**

3.1.2.3. Real World Activity - Receive Modality Performed Procedure Step Request

3.1.2.3.1. Associated Real-World Activity

Xcelera Cathlab Management accepts associations from systems that send an N-CREATE or N-SET Modality Performed Procedure Step (MPPS).

3.1.2.3.2. Presentation Context Table

The Xcelera Cathlab Management system will accept the presentation contexts as given in the next table.

Table 15. Supported Presentation Context for MPPS service

Abstract Syntax Name	UID	Transfer Syntax	UID List	Role	Ext. Neg.
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	ILE	1.2.840.10008.1.2	SCP	None

Abstract Syntax Name	UID	Transfer Syntax	UID List	Role	Ext. Neg.
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	ELE	1.2.840.10008.1.2.1	SCP	None
Modality Performed Procedure Step SOP Class	1.2.840.10008.3.1.2.3.3	EBE	1.2.840.10008.1.2.2	SCP	None

3.1.2.3.3. MPPS Conformance

The following attributes should be present in the MPPS request:

Table 16. Required attributes in a MPPS-Create request

Attribute Name	Tag	Note
Performed Procedure Step Start Date	0040,0244	
Performed Procedure Step Start Time	0040,0245	
Patient's Name	0010,0010	
Study Instance UID	0020,000D	

If any of these attributes are not present in the MPPS request Xcelera Cathlab Management will consider that an error has occurred and will return Invalid Attribute Value (Status Code 0106) or the Missing Attribute Value (Status Code 0121) response and discard the request message. It will continue to listen for additional MPPS messages.

3.1.2.3.3.1. MPPS N-CREATE

Xcelera Cathlab Management returns the N-CREATE status Responses that are mentioned in next Table.

Table 17. MPPS N-CREATE STATUS

Service Status	Status Codes	Further Meaning
Failed	A900	Identifier does not match SOP Class
	Cxxx	Unable to process
Warning	0106	Invalid Attribute Value
	0110	Processing Failed
	0121	Missing attribute Value
Success	0000	Matching is complete - No final identifier is supplied

Xcelera Cathlab Management accepts valid DICOM MPPS N-CREATE requests. Not all the accepted attributes are processed. Only the following attributes are processed:

Table 18. SOP Common Module

Attribute Name	Tag	Note
Specific Character Set	0008,0005	See Chapter 7 for more information

Table 19. Performed Procedure Step Information Module

Attribute Name	Tag	Note
Procedure Code Sequence	0008,1032	
>Code Value	0008,0100	
>Code Scheme Designator	0008,0102	
>Code Meaning	0008,0104	

Attribute Name	Tag	Note
Performed Station AE Title	0040,0241	
Performed Station Name	0040,0242	
Performed Location	0040,0243	
Performed Procedure Step Start Date	0040,0244	
Performed Procedure Step Start Time	0040,0245	
Performed Procedure Step End Date	0040,0250	
Performed Procedure Step End Time	0040,0251	
Performed Procedure Step Status	0040,0252	
Performed Procedure Step ID	0040,0253	
Performed Procedure Step Description	0040,0254	
Performed Procedure Type Description	0040,0255	

Table 20. Image Acquisition Result Module

Attribute Name	Tag	Note
Modality	0008,0060	
Study ID	0020,0010	
Performed Action Item Code Sequence	0040,0260	
Performed Series Sequence	0040,0340	
> Referenced Image Sequence	0008,1140	
>> Referenced SOP Class UID	0008,1150	
>> Referenced SOP Instance UID	0008,1155	
> Series Instance UID	0020,000E	

Table 21. Radiation Dose Module

Attribute Name	Tag	Note
Image Area Dose Product	0018,115E	
Total Time of Fluoroscopy	0040,0300	
Total Number of Exposures	0040,0301	
Entrance Dose	0040,0302	
Entrance Dose (in mGy)	0040,8302	

Table 22. Performed Procedure Step Relationship Module

Attribute Name	Tag	Note
> Referenced Patient Sequence	0008,1120	
>> Referenced SOP Class UID	0008,1150	
>> Referenced SOP Instance UID	0008,1155	
Patient's Name	0010,0010	
Patient ID	0010,0020	
Patient's Birth Date	0010,0030	
Patient's Sex	0010,0040	
Scheduled Step Attribute Sequence	0040,0270	

Attribute Name	Tag	Note
>Accession Number	0008,0050	
> Referenced Study Sequence	0008,1110	
>> Referenced SOP Class UID	0008,1150	
>> Referenced SOP Instance UID	0008,1155	
>Study Instance UID	0020,000D	
>Requested Procedure Description	0032,1060	
>Scheduled Procedure Step Description	0040,0007	
>Scheduled Action Item Code Sequence	0040,0008	
>>Code Value	0008,0100	
>>Code Scheme Designator	0008,0102	
>>Code Meaning	0008,0104	
>Scheduled Procedure Step ID	0040,0009	
>Requested Procedure ID	0040,1001	

Table 23. Billing and Material Management Code Module

Attribute Name	Tag	Note
Film Consumption Sequence	0040,0321	

Table 24. Additional MPPS Xcelera Cathlab Management attributes

Attribute Name	Tag	Note
Exposure Channel	0009,1008	
Exposure Start Time	0009,1032	
Scan Options	0018,0022	
Exposure Time	0018,1150	
Positioner Primary Angle	0018,1510	
Positioner Secondary Angle	0018,1511	
Frame Rate	0019,2040	
Exposure Number	0021,1012	
Number of Exposure Results	0029,3008	
Accumulated Fluoroscopy Dose	0041,1020	
Accumulated Exposure Dose	0041,1030	
Total Dose	0041,1040	
Total Number of Frames	0041,1041	

3.1.2.3.3.2. MPPS N-SET

Xcelera Cathlab Management returns the N-CREATE status Responses that are mentioned in next Table.

Table 25. MPPS N-SET STATUS

Service Status	Status Codes	Further Meaning
Failed	A900	Identifier does not match SOP Class
	Cxxx	Unable to process
Warning	0110	Processing Failed

Service Status	Status Codes	Further Meaning
Success	0000	Matching is complete - No final identifier is supplied

Xcelera Cathlab Management accepts valid DICOM MPPS N-SET requests. Not all the accepted attributes are processed.

IMPORTANT NOTE: All of the attributes processed by the N-CREATE request are also processed by the N-SET request.

Table 26. Performed Procedure Step Information Module

Attribute Name	Tag	Note
Performed Procedure Step Status	0040,0252	

3.1.3. Association Initiation Policy

Xcelera Cathlab Management initiates no association.

4. COMMUNICATION PROFILES

Xcelera Cathlab Management provides DICOM V3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

4.1. Supported Communication Stacks

Xcelera Cathlab Management uses DICOM V3.0 TCP/IP Network Communication software installed on the Platform where the Xcelera Cathlab Management DICOM AE is running on.

4.2. Physical Media Support

Supported physical medium include:

- IEEE 802.3-1995 (Fast Ethernet) 100BASE-TX.
- IEEE 802.3-1995 10BASE-TX

5. EXTENSIONS/SPECIALISATION'S/PRIVATISATION'S

Table 27. Mapping between UI elements and DICOM attributes

DICOM Attribute name	Tag	UI element	Note
Patient Name	0010,0010	First Name	
		Middle Name	
		Last Name	
Patient ID	0010,0020	ID Number	
Patient's Birth Date	0010,0030	Date of Birth	
Patient's Sex	0010,0040	Sex	
Patient's Weight	0010,1030	Weight	
Scheduled Performing Physician's Name	0040,0006	Diagnostic Physician	
Accession Number	0008,0050	Cath Number	
Scheduled Procedure Step Description	0040,0007	Procedure(s) Scheduled	
Referring Physician's Name	0008,0090	Referring Physician	

6. CONFIGURATION

The Xcelera Cathlab Management can be configured on the DICOM characteristics specified.

6.1. AE Title/Presentation Address mapping

6.1.1. Local AE Titles and Presentation Addresses

The AE Title, the host names or IP address and the port number of Xcelera Cathlab Management are configurable. The AE Titles for modalities are configurable.

6.2. Configurable parameters

The real behavior of the Xcelera Cathlab Management can be adjusted by configuration parameters.

7. SUPPORT OF EXTENDED CHARACTER SETS

7.1. Character Sets

Besides the DICOM default character repertoire ISO 646 Latin Alphabet (ISO-IR 6) Xcelera Cathlab Management supports the following character sets:

- ISO 8859 Western Europe Supplementary Set 1 (ISO-IR 100)