Philips Medical Systems
DICOM Conformance Statement

Integris 3DRA R 1

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Philips
Medical
Systems

PHILIPS

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1 Introduction

This section provides general information about the scope, intended audience and contents of this Conformance Statement and how to use it.

1.1 Scope and field of application

The scope of this DICOM Conformance Statement is to facilitate data exchange between equipment of Philips Medical Systems and with equipment of other vendors. This document specifies the compliance to the DICOM standard, formally called the NEMA PS 3.X-1996 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), Service Elements 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. The conformance to the DICOM standard is a key element of the Inturis Program (see [INTURIS]).

1.2 Intended audience

This Conformance Statement is intended for:
- (potential) clients,
- marketing staff interested in data exchange functionality,
- system integrators and Customer Support Engineers of medical equipment,
- software engineers 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 section 2 through 7 and follows the contents and structuring requirements of DICOM PS 3.2-1996.
Additionally, the sections following 7 (if present) specify the details of the applied IODs and Service Elements.

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 3.3-1996.
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 1996 (X refers to the part 1 - 13)
National Electrical Manufacturers Association (NEMA) Publication Sales
1300 N. 17th Street, Suite 1847

Rosslyn, Va. 22209, United States of America

[INTURIS] Philips Inturis Program
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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 a networked 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 analyse 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 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
- BOT Basic Offset Table
- CD-R CD Recordable
- CD-M CD Medical
- DCI Digital Cardio Imaging
- DCR Dynamic Cardio Review
- 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
- ELE Explicit VR Little Endian
- EBE Explicit VR Big Endian
- FSC File Set Creator
- GUI Graphic User Interface
- HIS Hospital Information System
- HL7 Health Level Seven
- ILE Implicit VR Little Endian
- IOD Information Object Definition
- ISIS Information System - Imaging System
- MPPS Modality Performed Procedure Step
- NEMA National Electrical Manufacturers Association
- PACS Picture Archiving and Communication System
- PDU Protocol Data Unit
- RIS Radiology Information System
- RWA Real World Activity
- SC Secondary Capture
- SCM Study Component Management
- SCP Service Class Provider
- SCU Service Class User
- SOP Service Object Pair
- TCP/IP Transmission Control Protocol/Internet protocol
- UID Unique Identifier
- WLM Worklist Management

2 Implementation model

2.1 Implementation model for the Integris 3DRA R 1

The Integris 3DRA R1 system of Philips Medical System is an 3D imaging generating system. The System contains:

- a DICOM Image export function to transfer DICOM Secondary Capture Images.
- DICOM Print.

The above DICOM Image Export function is described in this document.

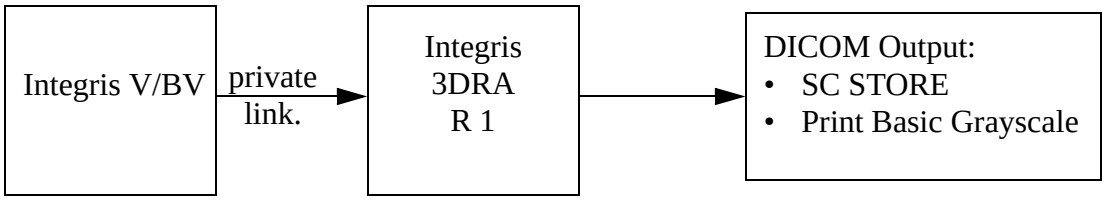

Figure 2-1: Topology Image

2.1.1 Application Data Flow Diagram for Integris 3DRA

The Integris 3DRA behaves as a system with one Application Entity (AE). The related Implementation Model is shown in Figure 2-2 on page 9.

The images to be sent are selected from one or more examinations. At export request the images will be converted into DICOM format and sent out to a remote destination.

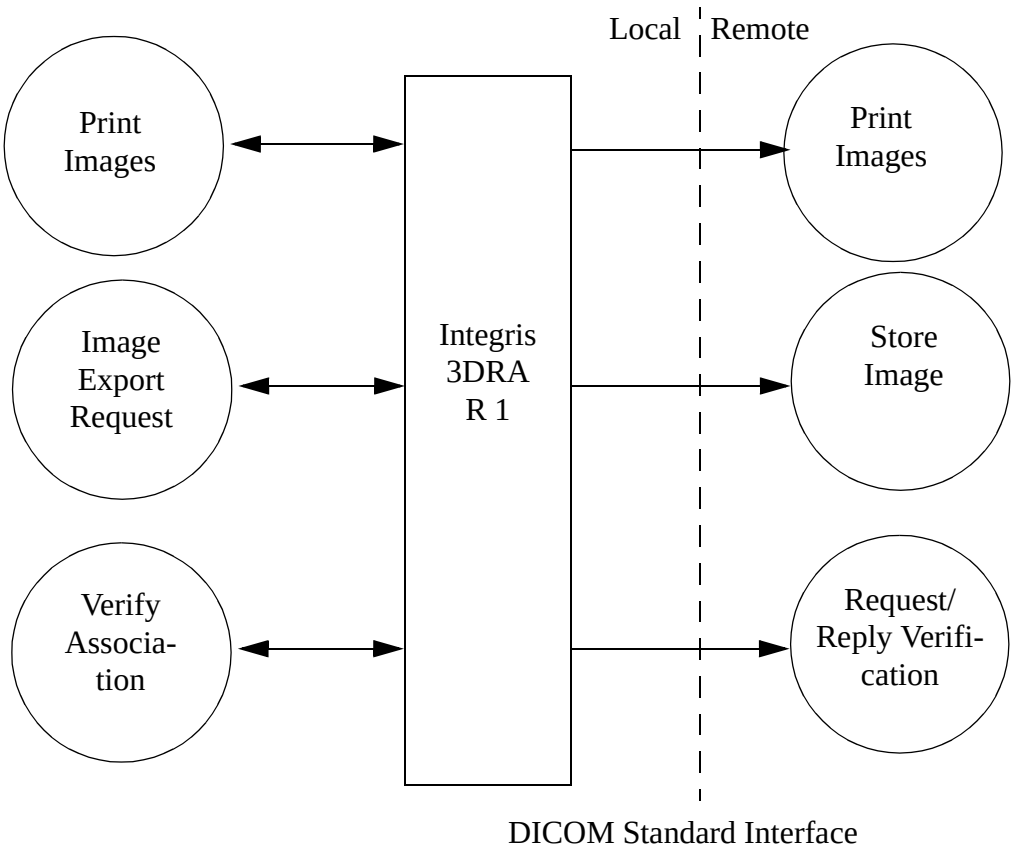

Figure 2-2: The Integris 3DRA DICOM Implementation Model (with references to the related sections. Within the Integris 3DRA the user interface can be used to export the images.)

2.1.2 Functional definition of Application Entities

The Integris 3DRA DICOM Image Export AE acts as a Service Class User (SCU) of the Storage Service Class. When the export is initiated, the AE will open an association to the remote system. The selected images and related image data are converted into a DICOM message to be sent to the remote system.

2.2 Sequencing of Real World Activities

When the examination is completed the created images can be exported via a network to the open domain.

3 AE Specifications

3.1 DICOM Image Storage AE Specification for the Integris 3DRA

The Integris 3DRA DICOM Storage Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU:

Table 3-1: Supported SOP Classes by the Integris 3DRA AE as SCU

SOP Class Name	UID
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7
Verification	1.2.840.10008.1.1
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9
>[a] Basic Film Session SOP Class	1.2.840.10008.5.1.1.1
> Basic Film Box SOP Class	1.2.840.10008.5.1.1.2
> Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4
> Printer SOP Class	1.2.840.10008.5.1.1.16

a. The '>' sign indicates that the SOP Class is part of the above mentioned Meta SOP Class.

3.1.1 Association Establishment Policies

3.1.1.1 General

Integris 3DRA uses a PDU size of 16k.

3.1.1.2 Number of Associations

Integris 3DRA will establish one association at a time.

3.1.1.3 Asynchronous Nature

Integris 3DRA does not support asynchronous operations and will not perform asynchronous window negotiation.

3.1.1.4 Implementation Identifying Information

The Implementation Class UID is: 1.3.46.670589.7.8.1.1
The implementation version name is: MergeCOM3_230

3.1.2 Association Initiation Policy

Integris 3DRA initiates associations as a result of the following local Real-World activities:

- The Image Export Request to send the Secondary Capture from the Integris 3DRA to a remote system (Section 3.1.2.4 on page 12)

3.1.2.1 Request for Verification

Real World Activity - Verification

3.1.2.2 Associated Real World Activity

Integris 3DRA will issue Verification requests in response to UI mediated requests from the user to test validity of DICOM connection.

3.1.2.3 Presentation Context Table

The Integris 3DRA will propose the following presentation contexts:

Table 3-2: Proposed Presentation Contexts for the request to send images

Presentation Context table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotia-tion
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	ILE ELE EBE	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None

3.1.2.3.1 SOP Specific Conformance

The Integris 3DRA provides Standard Conformance to the DICOM Verification Service Class.

3.1.2.4 Request to send images from Integris 3DRA to a remote system

3.1.2.4.1 Associated Real-World Activity

After selection of an image file, the file will be sent when initiating the Send command. The Integris 3DRA initiates one association to the pre-configured peer system and uses it to send the selected images and runs via C-STORE requests (and receives the associated C-STORE responses). The association is released by Integris 3DRA after successful transfer of the images or when an error occurs.
The Integris 3DRA handles each send request one after another.

3.1.2.4.2 Proposed Presentation Contexts

The Integris 3DRA will propose the following presentation contexts:

Table 3-3: Proposed Presentation Contexts for the request to send images

Presentation Context table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Secondary Capture Image Storage - STORE	1.2.840.10008.5.1.4.1.1.7	ILE ELE EBE	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None

3.1.2.4.3 C-STORE SCU Conformance

A not succeeded transfer is indicated on the console with:
'Storage error:' or 'Storage failed:' or 'Storage warning'. In case of “Storage warning” the transfer is successful, except if the transfer is concluded with a failure.

Extended negotiation is not supported.

The Status Codes of DIMSE Responses (Success, Warning, Failure) as can be returned**:**

Table 3-4: The error codes

Error	Note
RS_ERR_OUT_OF_RSRC	Storage error: remote device out of memory
EXP_E_ASSOC_TMP_FAILED	Storage device busy, try later
EXP_E_ASSOC_PERM_FAILED	Communication cannot be established, call service

3.1.2.4.4 SC SCU Conformance

Table 3-5 lists the applied Conditional (DICOM Type 1C and 2C) and Optional (DICOM Type 3) attributes in the SC Image IOD.

Table 3-5: Applied Conditional and Optional Attributes of the SC Image IOD

IE	Module	Conditional Attributes	Optional Attributes
Patient	Patient	-	-
Study	General Study	-	-
Series	General Series	Code Value, Code Scheme Designator, Scheduled Procedure Step ID, Requested Procedure ID	Series Date, Series Time, Performing Physician's Name, Referenced Study Component Sequence, Code Meaning, Performed Procedure Step Start Date, Performed Procedure Step Start Time, Performed Procedure Step ID, Performed procedure Step Description, Request Attributes Sequence, Scheduled Procedure Step Description, Scheduled Action Item Code Sequence,
Equipment	General Equipment	-	Institution Name, Station Name, Manufacturer's Model Name, Software Version(s)
	SC Equipment	-	
Image	General Image	-	Image Type
	Image Pixel	-	
	SC Image Module	-	Date of Secondary Capture, Time of Secondary Capture
	VOI LUT	Window Width	Window Center
	SOP Common	Specific Character Set	

3.1.2.4.5 SC Image IOD for the Integris 3DRA attribute overview

The shaded boxes contain values which contents are obtained from the RIS/HIS via Modality Worklist Query/Retrieve. The RIS/HIS information is obtained via the private link from the Integris which can be connected to a RIS/HIS, see Figure 2-1 on page 8

Table 3-6: Applied Modules in the SC Image IOD For the Integris 3DRA

Module	Usage	Reference
Patient	M	Table 3-7
General Study	M	Table 3-8
General Series	M	Table 3-9

Table 3-6: Applied Modules in the SC Image IOD (Continued)For the Integris 3DRA

Module	Usage	Reference
General Equipment	U	Table 3-10
SC Equipment	M	Table 3-11
General Image	M	Table 3-12
Image Pixel	M	Table 3-13
SC Image	M	Table 3-14
VOI LUT	U	Table 3-15
SOP Common	M	Table 3-16

Table 3-7: Secondary Capture Image Storage SOP Class - Patient Module

Attribute Name	*Tag*	*Note*
Patient’s Name	0010,0010	Patient’s full legal name.
Patient ID	0010,0020	Primary hospital identification number or code for the patient.
Patient's Birth Date	0010,0030	Birth date of the patient.
Patient's Sex	0010,0040	Sex of the named patient.

Table 3-8: Secondary Capture Image Storage SOP Class - General Study Module

Attribute Name	*Tag*	*Note*
Study Date	0008,0020	Date the Study started.
Study Time	0008,0030	Time the Study started.
Accession Number	0008,0050	A RIS generated number which identifies the order for the Study.
Referring Physician's Name	0008,0090	Patient's referring physician.
Study Instance UID	0020,000D	Unique identifier for the Study.
Study ID	0020,0010	User or equipment generated Study identification.

Table 3-9: Secondary Capture Image Storage SOP Class - General Series Module

Attribute Name	*Tag*	*Note*
Series Date	0008,0021	Date the Series started.
Series Time	0008,0031	Time the Series started.
Modality	0008,0060	Type of equipment that originally acquired the data used to create the Image. Applied value(s): XA
Performing Physician's Name	0008,1050	Name of the physicians administering the Series.
Referenced Study Component Sequence	0008,1111	Uniquely identifies the Study Component SOP Instance or Modality Performed Procedure Step Instance to which the Series is related.
> Referenced SOP Class UID	0008,1150	Uniquely identifies the referenced Modality Performed Procedure SOP Class. Applied value(s): 1.2.840.10008.3.1.2.3.3
> Referenced SOP Instance UID	0008,1155	Uniquely identifies the referenced SOP Instance.
Series Instance UID	0020,000E	Unique identifier of the Series.
Series Number	0020,0011	A number that identifies this series. Applied value(s): 1
Performed Procedure Step Start Date	0040,0244	Date on which the Performed procedure Step Started.
Performed Procedure Step Start Time	0040,0245	Time on which the Performed Procedure Step Started.
Performed Procedure Step ID	0040,0253	identification of that part of a Procedure that has been carried out within this step.
Performed Procedure Step Description	0040,0254	Institution-generated description or classification of the Procedure Step that was performed.
Request Attributes Sequence	0040,0275	Sequence that contains attributes from the Imaging Service Request.
> Scheduled Procedure Step Description	0040,0007	Institution-generated description or classification of the Scheduled Procedure Step to be performed.
> Scheduled Action Item Code Sequence	0040,0008	Sequence describing the Scheduled Action Item(s) following a specific coding scheme.
>> Code Value	0008,0100	
>> Coding Scheme Designator	0008,0102	

Table 3-9: Secondary Capture Image Storage SOP Class - General Series Module (Continued)

Attribute Name	*Tag*	*Note*
>> Code Meaning	0008,0104	
> Scheduled Procedure Step ID	0040,0009	Identifier which identifies the requested Procedure in the Imaging Service request.
> Requested Procedure ID	0040,1001	Identifier which identifies the Scheduled Procedure Step.

Table 3-10: Secondary Capture Image Storage SOP Class - General Equipment Module

Attribute Name	*Tag*	*Note*
Manufacturer	0008,0070	Manufacturer of the Equipment that produced the images. Applied value(s): Philips Medical Systems (Netherlands)
Institution Name	0008,0080	Institution where the equipment is located that produced the digital images.
Station Name	0008,1010	User defined name identifying the machine that produced the digital images.
Manufacturer's Model Name	0008,1090	manufacturer's model number of the equipment that produced the digital images. Applied value(s): SGI octane
Software Version(s)	0018,1020	Manufacturer's designation of software version of the equipment that produced the digital images.

Table 3-11: Secondary Capture Image Storage SOP Class - SC Equipment Module

Attribute Name	*Tag*	*Note*
Conversion Type	0008,0064	Describes the kind of image conversion. Applied value(s): WSD

Table 3-12: Secondary Capture Image Storage SOP Class - General Image Module

Attribute Name	*Tag*	*Note*
Image Type	0008,0008	Applied value(s): DERIVED \ SECONDARY
Image Number	0020,0013	A number that identifies the images.
Patient Orientation	0020,0020	Always empty.

Table 3-13: Secondary Capture Image Storage SOP Class - Image Pixel Module

Attribute Name	*Tag*	*Note*
Samples per Pixel	0028,0002	Number of samples (planes) in This image. Applied value(s): 1
Photometric Interpretation	0028,0004	Specifies the intended interpretation of the pixel data. Applied value(s): MONOCHROME2
Rows	0028,0010	Number of rows in the image. Applied value(s): 512
Columns	0028,0011	Number of columns in the image. Applied value(s): 512
Bits Allocated	0028,0100	Number of bits allocated for each pixel sample. Each sample shall have the same number of bits allocated. Applied value(s): 8
Bits Stored	0028,0101	Number of bits stored for each pixel sample. Applied value(s): 8
High Bit	0028,0102	Most significant bit for pixel sample data. Each sample shall have the same high bit. Applied value(s): 7
Pixel Representation	0028,0103	Data representation of the pixel samples. Each sample shall have the same pixel representation. Applied value(s): 0000
Pixel Data	7FE0,0010	A data stream of the pixel samples which comprise the Image.

Table 3-14: Secondary Capture Image Storage SOP Class - SC Image Module

Attribute Name	*Tag*	*Note*
Date of Secondary Capture	0018,1012	
Time of Secondary Capture	0018,1014	

Table 3-15: Secondary Capture Image Storage SOP Class - VOI LUT Module

Attribute Name	*Tag*	*Note*
Window Center	0028,1050	Applied value(s): 127.5
Window Width	0028,1051	Applied value(s): 255

Table 3-16: Secondary Capture Image Storage SOP Class - SOP Common Module

Attribute Name	*Tag*	*Note*
Specific Character Set	0008,0005	Character Set that expands or replaces the Basic Graphic Set Applied value(s): ISO_IR 100
SOP Class UID	0008,0016	Uniquely identifies the SOP Class. Applied value(s): 1.2.840.10008.5.1.4.1.1.7
SOP Instance UID	0008,0018	Uniquely identifies the SOP Instance.

3.1.2.5 Print Images

3.1.2.5.1 Associated Real-World Activity

There are two ways to request for image printing:

- Print Compose
  The operator is able to select one or more images from the internal database (via the Data Handling facility) and perform the Print operation on them.

The operator will select the print destination (out of choice list of configured printers) and some print parameters.
As a result, the Integris 3DRA will initiate an association to the selected printer and uses it to send the Print Service Elements of the Print SOP Classes.

3.1.2.5.2 Proposed Presentation Context

The Integris 3DRA will propose the following presentation contexts for Print:

Table 3-17: Proposed Presentation Contexts for print images

Presentation Context table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Basic Greyscale Print Management Meta SOP Class	1.2.840.100008.5.1.1.9	ILE ELE EBE	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None

3.1.2.5.3 Conformance to the Print SOP Classes

The Integris 3DRA provides standard conformance to the Basic Grayscale Print Management Meta SOP Class.

The applied order of Print Service Elements (DIMSE's) is specified in Table 3-18. A description and the applied optional (i.e. non-mandatory attributes as Print SCU) attributes in these Service Elements are specified too. Note that the Service Elements order is not specified by the DICOM standard.

An explicit N-DELETE Request on the created instances is not done by the Integris 3DRA; these are deleted implicitly when releasing the association.

The full list of (Mandatory and Optional) attributes applied in these Service Elements are:.

Table 3-18: The applied order of Print Service Elements and its optional attributes

Service Element of SOP Class	Description and applied optional attributes
N-GET of the Printer SOP Class	Purpose is to retrieve printer information.
N-CREATE of the Basic Film Session SOP Class	Integris 3DRA specifies the DICOM Printer about some general presentation parameters, applicable for all films in the Film Session. Applied optional attributes are: Number of Copies, Medium Type
N-CREATE of the Basic Film Box SOP Class	Integris 3DRA specifies the DICOM Printer about some general presentation parameters, applicable for all images in the Film Box. Applied optional attributes are: Film Orientation, Film Size ID, Magnification Type, Max. Density, Configuration Information, Trim.
N-SET of the Basic Grayscale Image Box SOP Class	Integris 3DRA will send the images to be printed.

Table 3-18: The applied order of Print Service Elements and its optional attributes

Service Element of SOP Class	Description and applied optional attributes
N-ACTION of the Basic Film Box SOP Class	Integris 3DRA triggers the DICOM Printer to print, this actual print action is done at film box level. No (optional) attributes are present.

The table below specifies the supported Service Elements which may be generated by the Printer at any time during the association.

Table 3-19: The applied sequence of Print Service Elements and its optional attributes

Service Element of SOP Class	Note
N-EVENT-REPORT of the Printer SOP Class	May be sent at any moment by the Printer SCP (i.e. the DICOM Printer). Integris 3DRA will respond.

The Status Codes of DIMSE Responses (Success, Warning, Failure) as returned by the printer will also be logged (for service purposes) and are mapped onto**:**

Table 3-20: The error codes

Error	Note
RP_ERR_MED_NOT_AVAIL	Printer error: out of film / paper
RP_ERR_COVER_OPEN	Printer error: cover open
RP_ERR_JOB_NCREATED	Printer busy, try again later
RP_ERR_OUT_OF_MEM	Printer out of memory, select less images
RP_ERR_UNKNOWN	Printer failure, check printer
EXP_E_ASSOC_PERM_FAILED	Communication cannot be established, call service

The following implementation remarks are important to achieve successful printing:

- The Integris 3DRA will release the association after the last print command has been given and a N-ACTION-RSP from the printer SOP has been received.

3.1.2.5.4 Basic Film Session SOP Class

Table 3-21: Basic Film Session SOP Class - N-CREATE

Attribute Name	*Tag*	*Note*
Number of Copies	2000,0010	
Medium Type	2000,0030	Applied value(s): BLUE FILM, CLEAR FILM, PAPER

3.1.2.5.5 Basic Film Box SOP Class

Table 3-22: Basic Film Box SOP Class - N-CREATE

Attribute Name	*Tag*	*Note*
Image Display Format *	2010,0010	The applied value below is an Integris 3DRA specific value indicating that one (large) image is contained in a Film Box. Applied value(s): STANDARD\r,c
Film Orientation	2010,0040	Applied value(s): PORTRAIT
Film Size ID *	2010,0050	DICOM specifies a number of Defined Terms. Applied value(s): 8INx10IN, 10INx12IN, 11INx14IN, 14INx14IN, 14INx17IN, 24CMx24CM, 24CMx30CM
Magnification Type*	2010,0060	Normally sent out, however some DICOM printers are not able to handle (value NONE for) this attribute. Applied value(s): BILINEAR, CUBIC, NONE, REPLICATE
Max Density*	2010,0130	User selectable 0-350.
Trim	2010,0140	Applied value(s): NO
Configuration Information*	2010,0150	Used to refer to a vendor specific Lookup-table (LUT); should be applied by the DICOM printer if LUT data is present.
Referenced Film Session Sequence	2010,0500	Parent Film Session.
> Referenced SOP Class UID	0008,1150	Applied value(s): 1.2.840.10008.5.1.1.1
> Referenced SOP Instance UID	0008,1155	

* Note: that Image Display Format, and Film Size ID are selectable.

Table 3-23: Basic Film Box SOP Class - N-ACTION

Attribute Name	*Tag*	*Note*
No data attributes present.		

3.1.2.5.6 Basic Grayscale Image Box SOP Class

Table 3-24: Basic Grayscale Image Box SOP Class - N-SET

Attribute Name	*Tag*	*Note*
Image Position	2020,0010	1 up to number of images on film.
Preformatted Grayscale Image Sequence	2020,0110	
> Samples per Pixel	0028,0002	Applied value(s): 1
> Photometric Interpretation	0028,0004	Applied value(s): MONOCHROME2
> Rows	0028,0010	Applied value(s): 512
> Columns	0028,0011	Applied value(s): 512
> Bits Allocated	0028,0100	Applied value(s): 8
> Bits Stored	0028,0101	Applied value(s): 8
> High Bit	0028,0102	Applied value(s): 7
> Pixel Representation	0028,0103	Applied value(s): 0x0000 (i.e. unsigned integer)
> Pixel Data	7FE0,0010	

3.1.2.5.7 Printer SOP Class

Table 3-25: Printer SOP Class - N-GET

Attribute Name	*Tag*	*Note*
Printer Status	2110,0010	
Printer Status Info	2110,0020	

Table 3-26: Printer SOP Class - N-EVENT-REPORT[a]

Attribute Name	*Tag*	*Note*
Printer Status Info	2110,0020	Conditionally sent by the Printer. The Integris 3DRA will react on notification, and will show corresponding messages on the UI for the events WARNING and FAILURE.

a. This Service Element is sent by the printer and interpreted by Integris 3DRA.

The Integris 3DRA does not send an attribute list to the printer, therefore the only attributes which are needed to be supported by the printer, are the mandatory attributes listed in Table 3-

25, “Printer SOP Class - N-GET,” on page 22.

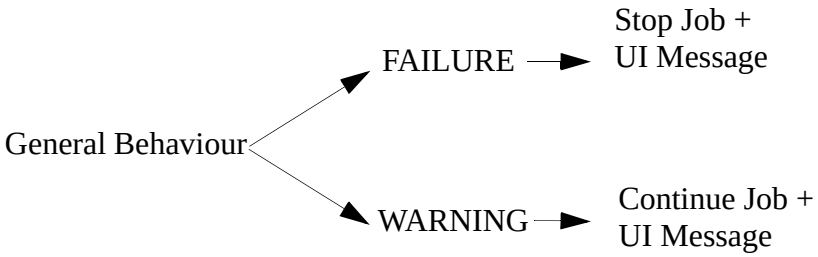

Figure 3-1: general behaviour for N_GET and N_EVENT_REPORT

3.1.3 Association Acceptance Policy

The Integris 3DRA Application Entity does not accept associations.

4 Communication Profiles

4.1 Supported Communication Stacks

The Integris 3DRA provides DICOM V3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

4.2 TCP/IP Stack

The Integris 3DRA uses the TCP/IP program stack of Silicon Graphics Irix (SGI) for the image transport.

4.2.1 Physical Media Support

The Integris 3DRA supports Ethernet (ISO 8802-3), 10 and 100-BaseT for the Image and Printer Interface.

5 Extensions/Specialization/Privatization

6 Configurations.

6.1 AE Title/Presentation Address mapping

6.1.1 Local AE Titles and Presentation Addresses

The Integris 3DRA AE titles are non-configurable (fixed).

- Import Provider 3DRAimport
- Remote Print 3DRAprint
- Remote Store 3DRAexport
- Echo 3DRAecho

6.1.2 Remote AE Titles and Presentation Addresses

For remote applications that act as Service Class Provider the following additional information must be provided:

- The host name on which the application resides, is configurable, Section 6.2 on page 24

6.2 Configurable parameters.

- IP adress.
- The port number

7 Support of Extended Character Set

The Integris 3DRA supports Extended Character Set “ISO_IR 100” which is the Latin alphabet No 1, supplementary set.