VetPACS 2005 TruDR™ DICOM Conformance Statement

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Version 1.2

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Version History

Date	Version	Person	Description
3/21/2005	0.2	Robert Powell	Initial release
3/23/2005	0.9	Wesley Snell	DX Tags. Add specific TruDR and v.3.5 Release
3/23/2005	1.0	Kevin Wilson	
4/1/2005	1.1	Robert Powell	
11/22/2005	1.2	Dan Blanchard	Added Modality Worklisting SCU.

DICOM Conformance Statements and Version Histories are released regularly. For additional assistance with our product's latest DICOM and interconnectivity statements, in addition to or beyond the scope of what is stated herein, please contact Sound Technologies at support@soundvet.com or (800) 268-5354.

VetPACS TruDR™ DICOM Conformance Statement

NOTE: Some settings must be changed by the service person in order to use or change the function marked with a "*".

1. Introduction

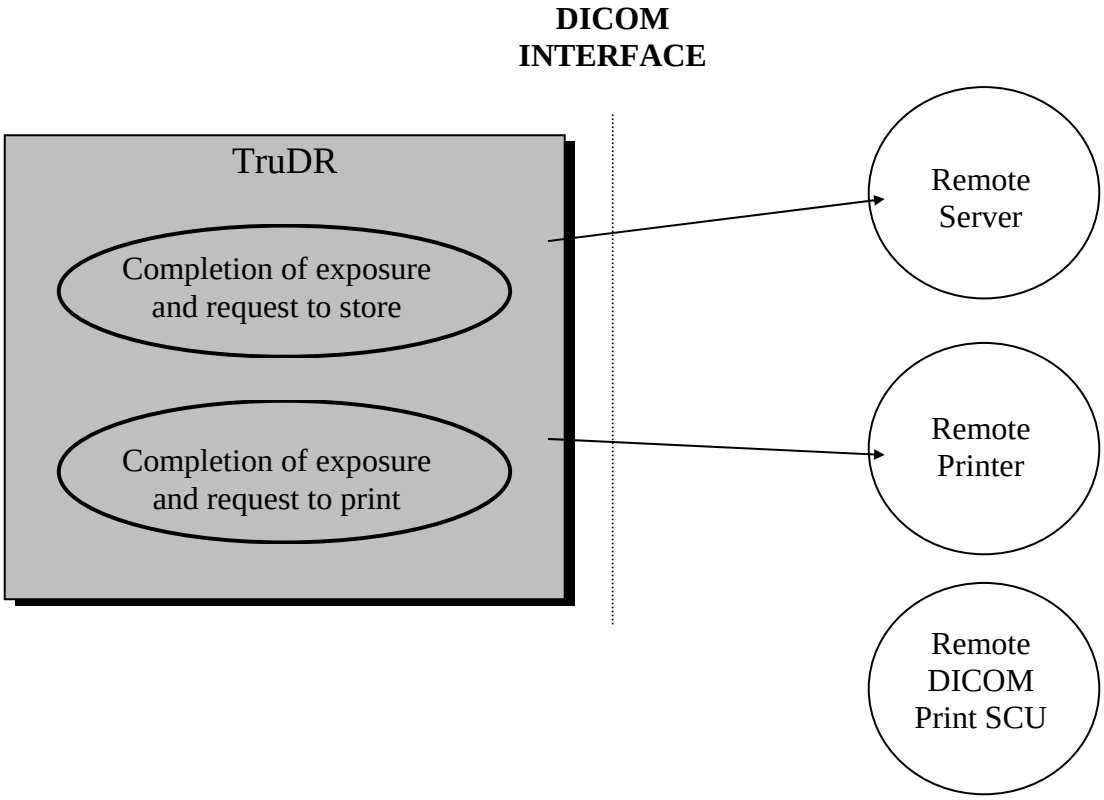
This Conformance Statement specifies the Sound Technologies TruDR compliance to DICOM V3.0.

2. Implementation Model

Sound Technologies TruDR directly digitizes the X-ray image data (DX image) by using the flat panel sensor, and sends the Digital Radiography image data by using DICOM Storage Service Class or DICOM Print Management Service Class.

2.1 Application Data Flow Diagram

Sound Technologies TruDR sends acquired image data (DX image) to the server by using Storage Service Class, or to the printer by using Print Management Service Class.



2.2 Functional Definition of AE's

Sound Technologies TruDR captures an image and processes the image by the operation from the LCD touch panel monitor of the operation unit. When image data (DX image) is captured, it is sent to the server by using Storage Service Class, or it is sent to the printer by using Print Management Service Class.

Sound Technologies TruDR also retrieve a Modality Worklist from an external Modality Worklist Provider.

2.3 Sequencing of Real-World Activities

Not applicable.

3. AE Specifications

Sound Technologies TruDR generates a single association establishment request and operates as an application entity. Sound Technologies TruDR is defined by the following SOP:

SOP Class as SCU	
UID Name	**UID Value**
Digital X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9
Basic Annotation Box SOP Class	1.2.840.10008.5.1.1.15
Modality Worklist Information Model - FIND	1.2.840.10008.5.1.4.31

Also, the SOP Class of the above Basic Grayscale Print Management Meta is defined as follows:

Basic Grayscale Print Management Meta SOP Class		
SOP Class Name	**SOP Class UID**	**Comment**
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	Used for collecting printer information when DICOM Printer Service is used.

Sound Technologies TruDR supports the following Transfer Syntaxes:

Transfer Syntax		
UID Name	**UID Value**	**Comment**
Implicit VR Little Endian	1.2.840.10008.1.2	No compression
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1]): Default Transfer Syntax for Lossless JPEG Image Compression.	1.2.840.10008.1.2.4.70	This is the default setting. Settings need to be changed by the service person when they are going to be used in DICOM Storage Service.
JPEG 2000 Lossless	1.2.840.10008.1.2.4.90	JPEG 2000 lossless (but not supported by all DICOM readers).

3.1 Association Establishment Policies

3.1.1 General

Sound Technologies TruDR generates association establishment request for the server or the printer when image data (DX image) to be sent is acquired. Maximum size of PDU which is used is 128K*.

3.1.2 Number of Associations

Sound Technologies TruDR generates association establishment request.

3.1.3 Asynchronous Nature

Asynchronous mode is not supported.

3.1.4 Implementation Identifying Information

Implementation Class UID for Sound Technologies TruDR is:
1.2.840.114387.GUID, where GUID is the unique image ID that is generated from the VetPACS system.

3.2 Association Acceptance Policy

Sound Technologies TruDR establishes association by sending establishment request to the server or printer when image data (DX image) to be sent is acquired.

3.2.1 Related Real-World Activity

Storage Service Class:

When the study is completed, AE sends C-STORE request for sending image.

Print Service Class:

When the study is completed, AE sends N-CREATE request for making film session and film box.
Then, it sends N-SET request for sending image data.
Finally, it sends N-ACTION request for printing the image on film, and N-DELETE for deleting the film session.

4. Communication Profiles

4.1 Supported Communication Stack

Sound Technologies TruDR provides DICOM V3.0 TCP/IP network communication support as stated in DICOM Standard Part 8.

4.2 TCP/IP Stack

Sound Technologies TruDR inherits TCP/IP stack.

4.3 Physical Media Support

Sound Technologies TruDR supports 10BASE-T, 100BASE-TX, 10BASE-2 (option) and 10BASE-5 (option) of ETHERNET™ [1].

5. Extension / Specialization / Privatization

Not applicable.

[1] Ethernet is a trademark of Xerox Corporation

6. Configurable Parameters

Following environmental configuration information can be set from the LCD touch panel monitor of the Sound Technologies TruDR: CALLED APP TITLE HOST NAME PORT #.

7. Support of Extended Character Sets

Sound Technologies TruDR supports extended character sets. Defined terms for single-byte character sets without code extensions:

Character Set Description	Defined Term	ISO registration number	Number of characters	Code element	Character Set
Default repertoire	None	ISO-IR 6	94	G0	ISO 646:
Latin alphabet No.1	ISO_IR 100	ISO-IR 100	96	G1	Supplementary set
		ISO-IR 6	94	G0	ISO 646:
Latin alphabet No.2	ISO_IR 101	ISO-IR 101	96	G1	Supplementary set
		ISO-IR 6	94	G0	ISO 646:
Cyrillic	ISO_IR 144	ISO-IR 144	96	G1	Supplementary set
		ISO-IR 6	94	G0	ISO 646:

8. Entity

8.1 IOD Modules

Sound Technologies TruDR uses the following IOD modules for DX modality DICOM files:

Information Entities	Module
SOP	SOP Common
Patient	Patient
Study	General Study
Series	General Series
Equipment	General Equipment
	DX Detector
Image	General Image
	DX Image
	Pixel Image
	VOI LUT
Acquisition	X-Ray Generation
	X-Ray Filtration
	X-Ray Grid
	DX Positioning

Sound Technologies TruDR uses the following VR (Value Representation) definitions as follows:

VR	Format	Data Length (Byte)
AS (Age String)	nnnY, nnnM, nnnW, nnnD	4
AE (Application Entity)		16 (max.)
CS (Code String)		16 (max.)
DA (Date)	YYYYMMDD	8
DS (Decimal String)	+xxx.xxxx, -xxx.xxxxx, etc	16 (max.)
DT (Date Time)	YYYYMMDDHHMMSS.FFFFFF	26 (max.)
FL (Floating Point Single)		4
FD (Floating Point Double)		8
IS (Integer String)		12 (max.)
LO (Long String)		64 (max.)
LT (Long Text)		10,240 (max.)
OB (Other Byte String)		Differs according to the transfer syntax.
OW (Other Word String)		Differs according to the transfer syntax.
PN (Person Name)		64 (max.) / component
SH (Short String)		16 (max.)
ST (Short Text)		1,024 (max.)
TM (Time)	HHMMSS.FFFFFF	16 (max.)
UI (Unique Identifier)		64 (max.)
UL (Unsigned Long)		4
US (Unsigned Short)		2

8.2 TruDR DICOM Library

Each element in this system for TYPE will be handled as follows:

Type	Handling
1	Value is always sent with Tag.
1C	Value is sent with Tag under a certain condition.
2	Value is sent with Tag. However, when Value is unknown, it will be sent as a text string of length 0.
2C	It will be handled in the same way as TYPE2 under a certain condition.
3	Value is sent with Tag. However, when Value is unknown, it will be sent as a text string of length 0, or the element itself will not be sent.

8.2.1 Part 10 Group Header (if file based)

Attribute Name	Tag	VR	Type	Value
File preamble	No tag or length field	-	1	A fixed 128 byte field available for Application Profile or implementation specified use. Currently set to all zeroes.
DICOM Prefix	No tag or length field	-	1	Four bytes containing the character string "DICM". This Prefix is intended to be used to recognize that this File is or not a DICOM File.
Group Length	(0002,0000)	-	1	Number of bytes following this File Meta Element (end of the Value field) up to and including the last File Meta Element of the Group 2 File Meta Information
File Meta Information Version	(0002,0001)	OB	1	Array of the values: “00”, “01”
Media Storage SOP Class UID	(0002,0002)	UI	1	Uniquely identifies the SOP Class associated with the Data Set. SOP Class UIDs allowed for media storage are specified in PS 3.4 of the DICOM Standard - Media Storage Application Profiles.
Meta storage SOP Instance UID	(0002,0003)	UI	1	Uniquely identifies the SOP Instance associated with the Data Set placed in the file and following the File Meta Information. SOP Instance (same as tag 0008,0018)
Transfer Syntax UID	(0002,0010)	UI	1	Uniquely identifies the Transfer Syntax used to encode the following Data Set. This Transfer Syntax does not apply to the File Meta Information. Note: It is recommended to use one of the DICOM Transfer Syntaxes supporting explicit Value Representation encoding to facilitate interpretation of File Meta Element Values (See PS 3.5 of the DICOM Standard).

Attribute Name	Tag	VR	Type	Value
Implementation class UID	(0002,0012)	UI	1	Uniquely identifies the implementation which wrote this file and its content. It provides an unambiguous identification of the type of implementation which last wrote the file in the event of interchange problems. It follows the same policies as defined by PS 3.7 of the DICOM Standard (association negotiation). The value is set to: "1.2.840.114387.3"
Implementation Version Name	(0002,0013)	SH	3	Identifies a version for an Implementation Class UID (0002,0012) using up to 16 characters of the repertoire identified in Section 8.5. It follows the same policies as defined by PS 3.7 of the DICOM Standard (association negotiation). The value is set to: "Sound Tech"
Source application entity title	(0002,0016)	AE	3	The DICOM Application Entity (AE) Title of the AE which wrote this file's content (or last updated it). If used, it allows the tracing of the source of errors in the event of media interchange problems. The policies associated with AE Titles are the same as those defined in PS 3.8 of the DICOM Standard. The value is set to: "VetPACS"

8.2.2 VetPACS Private Block Summary Module

Attribute Name	Tag	VR	Type	Value
Private block 1 reservation	(F001,00F1)	LO	1	"Sound Technologies", reserved block f001:f100-f1ff (used for various private tags)
Private block 2 reservation	(F001,00F2)	LO	1	"Sound Technologies", reserved block f002:f200-f2ff (used for embedded annotations

8.2.3 VetPACS Private Block 1 Module

Attribute Name	Tag	VR	Type	Value
Patient Species	(F001,F100)	CS	2	Patient species (e.g. CANINE, FELINE, EQUINE)
Patient Breed	(F001,F101)	CS	2	Patient breed (e.g. BOXER, DALMATION, TABY)
Patient Category Size	(F001,F102)	CS	2	Patient category size (SMALL, LARGE, EQUINE)
Patient Sex Extended (including spay/neuter)	(F001:F103)	CS	2	Patient sex extended: <null>=unknown, M=male, F=female, N=neutered, S=spayed
Image View	(F001:F104)	CS	2	Image view: UNKNOWN, LAT LEFT, LAT RIGHT, VD, DV, PA, AP, DP, MEDIAL LAT, MEDIAL OBL, SKYLINE LAT, SKYLINE OBL, FRONT, HIND
Anatomy Imaged	(F001,F105)	CS	2	Anatomy imaged: UNKNOWN, THORAX, ABDOMEN, HIP, SPINE, EXTREMITY, SKULL, HOOF, STIFLE, FETLOCK, PASTERN, TARSUS
Image enhancements	(F001,F106)	CS	2	Image enhancements applied in sequence (e.g. “SLUT='PseudoFilm', SLUT='S-Curve100.lut’, GOPXR=’s10-c10-l20.par’”)
Detector Settings	(F001,F107)	CS	2	Detector settings (e.g. “"Serialnumber:1234-56, Offset correction: True, Gain correction: True, Defect correction: True, Line noise correction: True”)
Application Version	(F001,F108)	CS	2	Application version: (e.g. "App=3.0.50 (Vp3_Acquisition.exe), Dll=3.0.50”)

8.2.4 VetPACS Private Block 2 Module

Attribute Name	Tag	VR	Type	Value
Private tags	(F001,00F2)	LO	3	"Sound Technologies", used for embedded annotations

8.2.5 SOP Common Module

Attribute Name	Tag	VR	Type	Value
SOP Class UID	(0008,0016)	UI	1	"1.2.840.10008.5.1.4.1.1.1.1"
SOP Instance UID	(0008,0018)	UI	1	"1.2.840.114387.12345678.1234.1234.1234.123456.123456" This value is composed of our base SOP base UID and appended GUID for the referenced item instance.
SOP Instance number	(0020,0013)	IS	2	Sequence number (?)
Instance Creation Date	(0008,0012)	DA	3	Date captured
Instance Creation Time	(0008,0013)	TM	3	Time captured

8.2.6 Patient Module

Attribute Name	Tag	VR	Type	Value
Patient ID	(0010,0020)	LO	2	Patient's ID
Patient Name	(0010,0010)	PN	2	Patient's name (e.g. “JOHN^SMITH”)
Patient Birth Date	(0010,0030)	DA	2	Patient's birth date (e.g. “YYYYMMDD”)
Patient Sex	(0010,0040)	CS	2	Patient's sex: (M=Male, F=Female or <null>=Unknown)
Patient Age	(0010,1010)	AS	3	Patient age in years
Patient Size	(0010,1020)	DS	3	Patient size/height (length in meters)
Patient Weight	(0010,1030)	DS	3	Patient weight (in kilograms)
Patient Comments	(0010,4000)	LT	3	Patient comments

8.2.7 General Study Module

Attribute Name	Tag	VR	Type	Value
Study ID	(0020,0010)	SH	2	Internal study number.
Study Instance UID*	(0020,000D)	UI	1	1.2.392.200046.100.2.1.(S/N).(Internal study No.).(Year, month, date and time of study exposure)
Study Date	(0008,0020)	DA	2	Date (YYYYMMDD) when study was performed.
Study Time	(0008,0030)	TM	2	Time (HHMMSS.000000) when study was performed.
Study Description	(0008,1030)	LO	2	Institution-generated description or classification of the study performed.
Accession Number	(0008,0050)	SH	2	A RIS or a HIS generated number which identifies the order for the study.
Referring Physician's Name	(0008,0090)	PN	2	Physician's name to refer to. (Physician in charge of the patient)

8.2.8 General Series Module

Attribute Name	Tag	VR	Type	Value
Modality	(0008,0060)	CS	1	Modality of digital x-ray “DX “
Series Number	(0020,0011)	IS	2	A number that identifies this Series.
Series Instance UID	(0020,000E)	UI	1	1.2.392.200046.100.2.1.(S/N).(Internal study No.).(Year, month, date and time of study exposure).(Series No.)
Series Date	(0008,0021)	DA	3	Date the series started.
Series Time	(0008,0031)	TM	3	Time the series started.
Series Description	(0008,103E)	LO	3	User provided description of the series.

8.2.9 General Equipment Module

Attribute Name	Tag	VR	Type	Value
Institution Name	(0008,0080)	LO	3	Institution where the equipment is located, (e.g. “Emergency Animal Hospital”)
Manufacturer	(0008,0070)	LO	2	Sound Technologies Inc.
Manufacturer's Model Name	(0008,1090)	LO	3	“TruDR”
Station Name	(0008,1010)	SH	3	Machine name of computer that produced the image. (e.g. “ACQUISITION1”)
Device Serial Number	(0018,1000)	LO	3	Serial number (e.g. “1234-05”)
Software Version	(0018,1020)	LO	3	Vx.x.xx (x indicates version number)
Pixel Padding	(0028,0120)	US		Value=0 for black (if MONOCHROME2)
Date of Last Calibration	(0018,1200)	DA	3	Date (YYYYMMDD) when the last calibration was performed.
Time of Last Calibration	(0018,1201)	TM	3	Time (HHMMSS.000000) when the last calibration was performed.

8.2.10 DX Detector Module

Attribute Name	Tag	VR	Type	Value
Detector Type	(0018,7004)	CS	2	Detector Type (SCINTILLATOR)
Detector Configuration	(0018,7005)	CS	3	“AREA”
Detector Description	(0018,7006)	LT	3	“TruDR”
Detector Mode	(0018,7008)	LT	3	“0”
Detector Serial Number	(0018,700A)	SH	3	“1234-05”
Detector Last Calibration Date	(0018,7010)	DA	3	Date of last calibration “20051101”
Detector Last Calibration Time	(0018,7011)	TM	3	Time of last calibration “111213”
Detector Time Since Last Exposure	(0018,7012)	DS	3	Time in Seconds since an exposure was last made on this detector prior to the acquisition of this image (e.g. “60”).
Detector Samples Per Pixels	(0028,0002)	US	1	“1”
Detector Pixel Aspect Ratio	(0028,0034)	IS	1C	Array (X/Y)
Detector Binning	(0018,701A)	DS	3	Array (X/Y)
Detector Imaging Pixel Spacing	(0018,1164)	DS	1	Array (0.127/0.127) for TruDR panel

8.2.11 DX Positioning Module

Attribute Name	Tag	VR	Type	Value
Laterality	(0020,0062)	CS	2C	Laterality of (paired) body part examined. Required if the body part examined is a paired structure. Enumerated Values: R=right, L=left

8.2.12 General Image Module

Attribute Name	Tag	VR	Type	Value
Image Number	(0020,0013)	IS	2	A number that identifies the internal image.
Image Comments	(0020,4000)	LT	3	Comments on Images.
Pixel Data[2]	(7FE0,0010)	OW	1	A data stream of the pixel samples that comprise the Image. See C.7.6.3.1.4 for further explanation. Pixel data is an array (could be raw pixels, or an embedded JPEG or J2K image). The order of pixels sent for each image plane is left to right, top to bottom, i.e., the upper left pixel. The VR is generally OW or OB for > 8 bit data or OB for 8 bit or less).
Rows	(0028,0010)	US	1	Number of pixels in rows in the image data.
Columns	(0028,0011)	US	1	Number of pixels in columns in the image data.
Bits Allocated	(0028,0100)	US	1	16
Bits Stored	(0028,0101)	US	1	12 (but may vary with future hardware)
High Bits	(0028,0102)	US	1	11 (one less than bits stored)
Pixel Representation	(0028,0103)	US	1	0

[2] Planar Configuration (0028,0006) shall not be present for grayscale images

8.2.13 DX Image Module

Attribute Name	Tag	VR	Type	Value
Image Type	(0008,0008)	CS	1C	Array: Value1: ORIGINAL or DERIVED, Value2: PRIMARY or SECONDARY
Photometric Interpretation	(0028,0004)	CS	1	Grayscale color map: MONOCHROME2 (black to white), MONOCHROME1 (white to black). Note we currently only create MONOCHROME2 images.
Samples Per Pixel	(0028,0002)	US	1	Sample per pixel: “1”
Pixel Intensity Relationship	(0028,1041)	SS	1	-1
Rescale Intercept	(0028,1052)	DS	1	0
Rescale Slope	(0028,1053)	DS	1	1
Rescale Type	(0028,1054)	LO	1	“US” (unspecified)
Presentation LUT Shape	(2050,0020)	CS	1C	“IDENTITY”
Tag Burned In Image	(0028,0301)	CS	1	"NO" Since we currently do not burn in tags to our raw images.

8.2.14 VOI LUT Module

Attribute Name	Tag	VR	Type	Value
Window Center	(0028,1050)	DS	3	Window center for display, (e.g. 2048)
Window Width	(0028,1051)	DS	1C	Window width for display, (e.g. 4096)
Window Description	(0028,1052)	CS		Window description: "Image Windows Level"
Imager Pixel Spacing*	(0018,1164)	DS	3	Pixel pitch of sensor.

8.2.15 X-Ray Generation Module

Attribute Name	Tag	VR	Type	Value
KVP	(0018,0060)	DS	3	Peak KVP X-ray generator voltage
X-ray Tube Current	(0018,1151)	IS	3	X-ray tube current, in mA.
Exposure Time	(0018,1150)	IS	3	Time of X-ray exposure, in mSec.
Exposure	(0018,1152)	IS	3	The product of exposure time and X-ray tube current expressed in mAs.
Distance Source to Detector	(0018,1110)	DS	3	Distance in mm from source to detector center, also known as SID.
Acquisition Device Processing	(0018,1400)	LO	3	Method of processing the image.

8.2.16 X-Ray Filtration Module

Attribute Name	Tag	VR	Type	Value
Filter Type	(0018,1160)	SH	3	Filter type (NONE, STRIP, WEDGE, BUTTERFLY, MULTIPLE)
Filter Material	(0018,7050)	CS	3	Filter material (MOLYBDENUM, ALUMINUM, COPPER, RHODIUM, NIOBIUM, EUROPIUM, LEAD)
Filter Thickness Min	(0018,7052)	DS	3	Filter thickness min in mm
Filter Thickness Max	(0018,7054)	DS	3	Filter thickness max in mm

8.2.17 X-Ray Grid Module

Attribute Name	Tag	VR	Type	Value
Grid Type	(0018,1166)	CS	3	Grid type (NONE, FIXED, PARALLEL, CROSSED, RECIPROCATING, FOCUSED)
Grid Ratio	(0018,7046)	IS	3	Grid ratio X/Y
Grid Pitch	(0018,7044)	DS	3	Grid pitch: Array (X/Y)
Grid focal distance	(0018,704c)	DS	3	Grid focal distance
Grid period	(0018,7048)	DS	3	Grid period

8.3 VetPACS DICOM Print Library

8.3.1 Printer Module

Attribute Name	Tag	VR	Type	Value
Printer Status	(2110,0010)	LO	3	Printer device status: NORMAL WARNING FAILURE
Printer Status Info	(2110,0020)	CS	3	Information on printer status.
Printer Name	(2110,0030)	LO	3	User defined identifying the printer.
Manufacturer	(0008,0070)	LO	3	Manufacturer of the printer.
Manufacturer Model Name	(0008,1090)	LO	3	Model name of the printer.
Device Serial Number	(0018,1000)	LO	3	Serial number of the printer.
Software Version	(0018,1020)	LO	3	Software version of the printer.
Date of Last Calibration	(0018,1200)	DA	3	Date(YYYYMMDD) when the last calibration was performed.
Time of Last Calibration	(0018,1201)	TI	3	Time(HHMMSS.000000) when the last calibration was performed.

8.3.2 Basic Film Presentation Module

Attribute Name	Tag	VR	Type	Value
Number of Copies	(2000,0010)	IS	3	Number of copies to be printed for each film of the film session.
Print Priority	(2000,0020)	CS	3	Specifies the priority of the print job. (HIGH or LOW)
Medium Type	(2000,0030)	CS	3	Medium Type. (PAPER,CLEAR FILM,BLUE FILM)
Film Destination	(2000,0040)	CS	3	Film Destination. (MAGAZINE or PROCESSOR)
Film Session Label	(2000,0050)	LO	3	Human readable label that identifies the film session.

8.3.3 Basic Film Box

Attribute Name	Tag	VR	Type	Value
Image Display Format	(2010,0010)	ST	1	Format specified by the user.
Film Orientation	(2010,0040)	CS	3	Direction of the film specified by the user. (PORTRAIT or LANDSCAPE)
Film Size ID	(2010,0050)	CS	1	Film size identification. 8IN X 10IN, 10IN X 12IN, 10IN X 14IN, 11IN X 14IN, 14IN X 14IN, 14IN X 17IN, 24CM X 24CM, 24CM X 30CM
Magnification Type	(2010,0060)	CS	3	One of the following interpolation types: REPLICATE BILINEAR CUBIC NONE

Attribute Name	Tag	VR	Type	Value
Smoothing Type	(2010,0080)	CS	3	Further specifies the type of the interpolation function; values are defined in Conformance Statement; only valid for Magnification Type (2010,0060)=CUBIC
Border Density	(2010,0100)	CS	3	Density of border.
Min Density	(2010,0120)	US	3	Minimum density of the image.
Max Density	(2010,0130)	US	3	Maximum density of the image.
Trim	(2010,0140)	CS	3	Specifies whether a Trim box shall be printed surrounding each image on the film (ON/OFF).
Configuration Information	(2010,0150)	ST	3	Character string that contains either the ID of the printer configuration table that contains a set of values for implementation specific print parameters or one or more configuration data values, encoded as characters.

8.3.4 Basic Image Box

Attribute Name	Tag	VR	Type	Value
Image Position	(2020,0010)	US	1	Position of the image on the film.
Polarity	(2020,0020)	CS	3	Specifies whether minimum pixel values are to be printed black or white.
Requested Image Size	(2020,0030)	DS	3	Width of the image to be printed, in mm.
Preformatted Grayscale Image Sequence	(2020,0110)	SQ	1	Sequence of image.
>Photometric Interpretation	(0028,0004)	US	1	Refer to Image Pixel.
>Samples Per Pixel	(0028,0002)	US	1	Refer to Image Pixel.
>Rows	(0028,0010)	US	1	Refer to Image Pixel.
>Columns	(0028,0011)	US	1	Refer to Image Pixel.
>Bits Allocated	(0028,0100)	US	1	Refer to Image Pixel.
>Bits Stored	(0028,0101)	US	1	Refer to Image Pixel.
>High Bit	(0028,0102)	US	1	Refer to Image Pixel.
>Pixel Representation	(0028,0103)	US	1	Refer to Image Pixel.
>Pixel Data	(7FE0,0010)	OW	1	Image data.

8.3.5 Annotation List Module

Attribute Name	Tag	VR	Type	Value
Annotation Position	(2030,0010)	US	1	Position of the annotation box.
Text String	(2030,0020)	LO	3	Text string.

8.3.6 Modality LUT Basic Film Session

Attribute Name	Tag	VR	Type	Value
Rescale Intercept	(0028,1052)	DS	1C	Rescale Intercept. 200
Rescale Slope	(0028,1053)	DS	1C	Rescale Slope. 7.326007E-1
Rescale Type	(0028,1054)	LO	1C	Rescale Type. OD

8.4 Retrieve a Modality Worklist From a Remote System

8.4.1 Scheduled Procedure Step Module

Attribute Name	Tag	VR	Type	Value
Scheduled Procedure Step Sequence	(0040,0100)	DS	2C	
Scheduled Procedure Step ID	(0040,0009)	SH	2C	
Scheduled Station AE Title	(0040,0001)	AE	2C	
Scheduled Procedure Step Start Date	(0040,0002)	DA	2C	
Scheduled Procedure Step Start Time	(0040,0003)	TM	2C	
Modality	(0008,0060)	CS	2C	
Scheduled Performing Physician's Name	(0008,0060)	PN	2C	
Scheduled Procedure Step Description	(0040,0006)	LO	2C	
Scheduled Station Name	(0040,0007)	SH	2C	
Scheduled Procedure Step Location	(0040,0010)	SH	2C	
Scheduled Procedure Step Status	(0040,0011)	CS	2C	
Comments on the Scheduled Procedure Step	(0040,0020)	LT	2C	

8.4.2 Requested Procedure

Attribute Name	Tag	VR	Type	Value
Requested Procedure ID	(0040,1001)	SH	2C	
Requested Procedure Description	(0032,1060)	LO	2C	
Study Instance UID	(0020,000D)	UI	2C	
Reason for the Requested Procedure	(0040,1002)	LO	2C	
Requested Procedure Comments	(0040,1400)	LT	2C	
Requested Procedure Priority	(0040,1003)	SH	2C	

8.4.3 Patient Identification

Attribute Name	Tag	VR	Type	Value
Patient's Name	(0010,0010)	PN	2C	
Patient ID	(0010,0020)	LO	2C	

8.4.4 Patient Demographic

Attribute Name	Tag	VR	Type	Value
Patient's Birth Date	(0010,0030)	DA	2C	
Patient's Sex	(0010,0040)	CS	2C	
Patient's Weight	(0010,0030)	DS	2C	

8.4.5 Imaging Service Request

Attribute Name	Tag	VR	Type	Value
Imaging Service Request Comments	(0040,2400)	LT	2C	
Requesting Physician	(0032,1032)	PN	2C	
Referring Physician's Name	(0008,0090)	PN	2C	
Accession Number	(0008,0050)	SH	2C	