

# DICOM Conformance Statement

Application Annex:

## MR Applications on Philips IntelliSpace Portal V6.0



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## 1. Introduction

This DICOM Conformance Statement annex is applicable to the MR Applications on Philips IntelliSpace Portal V6.0 hosting platform, later referred to as MR Applications. In general the MR Applications are used for viewing and analyzing MR Images.

The following analysis packages are offered by MR Applications (licensing might be applicable):

- MR Subtraction
- MR Echo Accumulation
- MR Diffusion
- MR T1 Perfusion
- MR Neuro Perfusion
- MR Permability
- MR Cartilage Assessment
- MR MobiView
- MR Spectroscopy
- MR Cardiac Analysis
- MR Diffusion with Fiber Track
- MR fMRI

### 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	01-July-2011	First version	Initial document version
01	27-July-2012	Authorized	Updated for version 5.0
02	13-August-2013	Authorized	Updated for version 6.0

### 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 MR Applications.

ACCEPTED	The applicable IOD is accepted for storage in the repository of the hosting platform and supported for import in MR Applications for viewing and analysis.
CREATED	The MR Applications 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
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
Enhanced MR Image Storage SOP Class*	1.2.840.10008.5.1.4.1.1.4.1	Yes	No
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Yes	Yes
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	No	Yes
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes

**Note:**

- 1) Only MR Neuro Perfusion, MR T1 Perfusion, MR Diffusion, MR Permeability, MR fMRI and MR Cardiac Analysis applications are compliant with data from other vendors for import and display (multi-vendor compliant).
- 2) The MR Spectroscopy application will only support the Enhanced Spectroscopy MR IOD (1.2.840.10008.5.1.4.1.1.4.2).
- 3) Siemens Mosaic type fMRI and diffusion data will be supported for viewing and processing. DICOM export of mosaic data is prohibited.
- 4) \* Enhanced MR Images (1.2.840.10008.5.1.4.1.1.4.1) will be converted to Classic MR Image (1.2.840.10008.5.1.4.1.1.4) upon arrival in Portal for internal diagnostic/viewing purposes. While exporting the same studies to DICOM Nodes/CD/DVD/USB, only the original Enhanced MR data as it was arrived into Portal will be exported along with the Portal generated Secondary Captures, Derived Type images, Presentation States and Book Marks.

#### 2.1.1. Acceptance Criteria

This section specifies the acceptance criteria applied by MR Applications 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		Transfer Syntax	
Name	UID	Name	UID
MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4	CT-private-ELE	1.3.46.670589.33.1.4.1
		Explicit VR Little Endian	1.2.840.10008.1.2.1
		Implicit VR Little Endian	1.2.840.10008.1.2
		JPEG Lossless, Non-Hierarchical,	1.2.840.10008.1.2.4.70

		FOP (Process 14)	
Enhanced MR Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.1	Explicit VR Little Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2
MR Spectroscopy Storage SOP Class	1.2.840.10008.5.1.4.1.1.4.2	Explicit VR Little Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2
Secondary Capture Image Storage SOP Class	1.2.840.10008.5.1.4.1.1.7	CT-private-ELE Explicit VR Little Endian Implicit VR Little Endian JPEG Lossless, Non-Hierarchical, FOP (Process 14)	1.3.46.670589.33.1.4.1 1.2.840.10008.1.2.1 1.2.840.10008.1.2 1.2.840.10008.1.2.4.70
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Explicit VR Little Endian Implicit VR Little Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2

**Table 5: Accepted attribute values**

Attribute Name	Attribute Number	Values / Comments
Not applicable	Not applicable	Not applicable.

## 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
COPY	The attribute value source is a Modality Worklist
USER	The attribute value source is explicit user input

### 2.1.2.1. MR Image Storage SOP Class

**Table 6: IOD of Created MR 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
Frame of Reference	Frame of Reference Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Image	General Image Module	ALWAYS

Image	Image Plane Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	MR Image Module	ALWAYS
Image	Overlay Plane Module	CONDITIONAL
Image	VOI LUT Module	CONDITIONAL
Image	SOP Common Module	ALWAYS
	Extended Dicom and Private attributes	CONDITIONAL

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		VNAP	COPY	-
Other Patient IDs	0010,1000	LO		ANAPCV	COPY	-
Ethnic Group	0010,2160	SH		ANAPCV	COPY	-
Patient Comments	0010,4000	LT		ANAPCV	COPY	-

Table 8: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	-
Study Time	0008,0030	TM		VNAP	COPY	-
Accession Number	0008,0050	SH		VNAP	COPY	-
Referring Physician's Name	0008,0090	PN		VNAP	COPY	-
Study Description	0008,1030	LO		ANAPCV	COPY	-
Procedure Code Sequence	0008,1032	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ALWAYS	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Mapping Resource	0008,0105	CS		ANAPCV	COPY	-
>Context Group Version	0008,0106	DT		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
Physician(s) of Record	0008,1048	PN		ANAPCV	COPY	-
Name of Physician(s) Reading Study	0008,1060	PN		ANAPCV	COPY	-
Referenced Study Sequence	0008,1110	SQ		ANAPCV	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Study Instance UID	0020,000D	UI		ALWAYS	COPY	-
Study ID	0020,0010	SH		VNAP	COPY	-

Table 9: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAPCV	COPY	-
Patient's Age	0010,1010	AS		ANAPCV	COPY	-

Patient's Size	0010,1020	DS		ANAPCV	COPY	-
Patient's Weight	0010,1030	DS		ANAPCV	COPY	-
Occupation	0010,2180	SH		ANAPCV	COPY	-
Additional Patient History	0010,21B0	LT		ANAPCV	COPY	-

Table 10: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ANAPCV	AUTO	-
Series Time	0008,0031	TM		ANAPCV	AUTO	-
Modality	0008,0060	CS		ALWAYS	COPY	-
Series Description	0008,103E	LO		ANAPCV	AUTO, USER	-
Performing Physician's Name	0008,1050	PN		ANAPCV	COPY	-
Operators' Name	0008,1070	PN		ANAPCV	COPY	-
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAPCV	COPY	-
Body Part Examined	0018,0015	CS		ANAPCV	COPY	-
Protocol Name	0018,1030	LO		ANAPCV	COPY	-
Patient Position	0018,5100	CS		ANAPCV	COPY	-
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-
Series Number	0020,0011	IS		VNAP	AUTO	-
Laterality	0020,0060	CS		ANAPCV	COPY	-
Request Attributes Sequence	0040,0275	SQ		ANAPCV	COPY	-
>Scheduled Procedure Step Description	0040,0007	LO		ANAPCV	COPY	-
>Scheduled Protocol Code Sequence	0040,0008	SQ		ANAPCV	COPY	-
>Scheduled Procedure Step ID	0040,0009	SH		ANAP	COPY	-
>Requested Procedure ID	0040,1001	SH		ANAP	COPY	-
Performed Procedure Step Start Date	0040,0244	DA		ANAPCV	COPY	-
Performed Procedure Step Start Time	0040,0245	TM		ANAPCV	COPY	-
Performed Procedure Step ID	0040,0253	SH		ANAPCV	COPY	-
Performed Procedure Step Description	0040,0254	LO		ANAPCV	COPY	-
Performed Protocol Code Sequence	0040,0260	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ANAPCV	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Mapping Resource	0008,0105	CS		ANAPCV	COPY	-
>Context Group Version	0008,0106	DT		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
>Context Identifier	0008,010F	CS		ANAPCV	COPY	-
Comments on the Performed Procedure Step	0040,0280	ST		ANAPCV	COPY	-



Table 11: Frame of Reference Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame of Reference UID	0020,0052	UI		ALWAYS	COPY	-
Position Reference Indicator	0020,1040	LO		VNAP	FIXED	-

Table 12: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips Medical Systems	VNAP	COPY	Philips Medical Systems
Institution Name	0008,0080	LO		ANAPCV	COPY	-
Institution Address	0008,0081	ST		ANAPCV	COPY	-
Station Name	0008,1010	SH		ANAPCV	COPY	-
Institutional Department Name	0008,1040	LO		ANAPCV	COPY	-
Manufacturer's Model Name	0008,1090	LO		ANAPCV	COPY	-
Device Serial Number	0018,1000	LO		ANAPCV	FIXED	System serial number.
Software Version(s)	0018,1020	LO		ANAPCV	COPY	

Table 13: General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Date	0008,0022	DA		ANAPCV	COPY	-
Content Date	0008,0023	DA		ANAPCV	COPY	-
Acquisition Datetime	0008,002A	DT		ANAPCV	COPY	-
Acquisition Time	0008,0032	TM		ANAPCV	COPY	-
Content Time	0008,0033	TM		ANAPCV	COPY	-
Referenced Image Sequence	0008,1140	SQ		ANAPCV	AUTO	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	IMPLICIT	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	IMPLICIT	-
Acquisition Number	0020,0012	IS		ANAPCV	COPY	-
Instance Number	0020,0013	IS		VNAP	AUTO	-
Patient Orientation	0020,0020	CS		ANAPCV	COPY	-
Image Comments	0020,4000	LT		ANAPCV	COPY	-
Lossy Image Compression	0028,2110	CS		ANAPCV	FIXED	Applied value: 00
Presentation LUT Shape	2050,0020	CS		ANAPCV	FIXED	Applied value: IDENTITY

Table 14: Image Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Slice Thickness	0018,0050	DS		VNAP	COPY, USER	-
Image Position (Patient)	0020,0032	DS		ALWAYS	AUTO	-
Image Orientation (Patient)	0020,0037	DS		ALWAYS	AUTO	-
Slice Location	0020,1041	DS		ANAPCV	AUTO	Value is shortest distance between TLHC of the images from TLHC of first image of the series.
Pixel Spacing	0028,0030	DS		ALWAYS	AUTO	-

Table 15: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Planar Configuration	0028,0006	US		ANAP	AUTO	-
Rows	0028,0010	US		ALWAYS	IMPLICIT	Applied values: min: 64 - max: 2048

Columns	0028,0011	US		ALWAYS	IMPLICIT	Applied values: min: 64 - max: 2048
Pixel Aspect Ratio	0028,0034	IS		ANAP	FIXED	Applied value: (1\1)
Bits Stored	0028,0101	US		ALWAYS	IMPLICIT	-
High Bit	0028,0102	US		ALWAYS	IMPLICIT	-
Pixel Representation	0028,0103	US		ALWAYS	IMPLICIT	Applied value: 0
Pixel Data	7FE0,0010	OW/OB		ANAP	IMPLICIT	-

Table 16: MR Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS		ALWAYS	AUTO	Applied values: ({ORIGINAL, DERIVED}), PRIMARY, {T2_STAR, R2, R2_STAR, W, F, IP, OP, KTRANS, KEP, VE, VP}, {KTRANS, KEP, VE, VP}, {UNSPECIFIED})
Scanning Sequence	0018,0020	CS		ALWAYS	COPY	-
Sequence Variant	0018,0021	CS		ALWAYS	COPY	-
Scan Options	0018,0022	CS		VNAP	COPY	-
MR Acquisition Type	0018,0023	CS		VNAP	COPY	-
Sequence Name	0018,0024	SH		ANAPCV	AUTO	-
Angio Flag	0018,0025	CS		ANAPCV	AUTO	-
Repetition Time	0018,0080	DS		ANAPCV	COPY	-
Echo Time	0018,0081	DS		VNAP	COPY	-
Inversion Time	0018,0082	DS		ANAPCV	IMPLICIT	-
Number of Averages	0018,0083	DS		ANAPCV	IMPLICIT	-
Imaging Frequency	0018,0084	DS		ANAPCV	IMPLICIT	-
Imaged Nucleus	0018,0085	SH		ANAPCV	IMPLICIT	-
Echo Number(s)	0018,0086	IS		ANAPCV	IMPLICIT	-
Magnetic Field Strength	0018,0087	DS		ANAPCV	COPY	-
Spacing Between Slices	0018,0088	DS		ANAPCV	IMPLICIT	-
Number of Phase Encoding Steps	0018,0089	IS		ANAPCV	IMPLICIT	-
Echo Train Length	0018,0091	IS		VNAP	COPY	-
Percent Sampling	0018,0093	DS		ANAPCV	IMPLICIT	-
Percent Phase Field of View	0018,0094	DS		ANAPCV	IMPLICIT	-
Pixel Bandwidth	0018,0095	DS		ANAPCV	AUTO	-
Trigger Time	0018,1060	DS		ANAPCV	COPY	Will only have a value if Dynamic Series (2001,1012) Equals 1
Nominal Interval	0018,1062	IS		ANAPCV	AUTO	-
Beat Rejection Flag	0018,1080	CS		ANAPCV	AUTO	-
Low R-R Value	0018,1081	IS		ANAPCV	IMPLICIT	-
High R-R Value	0018,1082	IS		ANAPCV	IMPLICIT	-
Intervals Acquired	0018,1083	IS		ANAPCV	IMPLICIT	-
Intervals Rejected	0018,1084	IS		ANAPCV	IMPLICIT	-
PVC Rejection	0018,1085	LO		ANAPCV	AUTO	-
Skip Beats	0018,1086	IS		ANAPCV	AUTO	-
Heart Rate	0018,1088	IS		ANAPCV	IMPLICIT	-
Cardiac Number of Images	0018,1090	IS		ANAPCV	AUTO	-
Trigger Window	0018,1094	IS		ANAPCV	IMPLICIT	-
Reconstruction Diameter	0018,1100	DS		ANAPCV	COPY	Value is a copy of the largest value of the Field of View.
Receive Coil Name	0018,1250	SH		ANAPCV	IMPLICIT	-
Transmit Coil Name	0018,1251	SH		ANAPCV	IMPLICIT	-

Acquisition Matrix	0018,1310	US		ANAPCV	IMPLICIT	-
In-plane Phase Encoding Direction	0018,1312	CS		ANAPCV	IMPLICIT	-
Flip Angle	0018,1314	DS		ANAPCV	IMPLICIT	-
Variable Flip Angle Flag	0018,1315	CS		ANAPCV	AUTO	-
SAR	0018,1316	DS		ANAPCV	IMPLICIT	-
dB/dt	0018,1318	DS		ANAPCV	AUTO	-
Temporal Position Identifier	0020,0100	IS		ANAPCV	IMPLICIT	-
Number of Temporal Positions	0020,0105	IS		ANAPCV	IMPLICIT	-
Temporal Resolution	0020,0110	DS		ANAPCV	AUTO	-
Samples per Pixel	0028,0002	US		ALWAYS	FIXED	Applied value: 1
Photometric Interpretation	0028,0004	CS	MONOCHROME2	ALWAYS	FIXED	Applied value: MONOCHROME2
Bits Allocated	0028,0100	US		ALWAYS	FIXED	Applied value: 16

Table 17: Overlay Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	6000,0010	US		ALWAYS	AUTO	-
Overlay Columns	6000,0011	US		ALWAYS	AUTO	-
Overlay Description	6000,0022	LO		ANAPCV	AUTO	-
Overlay Type	6000,0040	CS		ALWAYS	AUTO	-
Overlay Subtype	6000,0045	LO		ANAPCV	AUTO	-
Overlay Origin	6000,0050	SS		ALWAYS	AUTO	-
Overlay Bits Allocated	6000,0100	US		ALWAYS	AUTO	-
Overlay Bit Position	6000,0102	US		ALWAYS	AUTO	-
ROI Area	6000,1301	IS		ANAPCV	AUTO	-
ROI Mean	6000,1302	DS		ANAPCV	AUTO	-
ROI Standard Deviation	6000,1303	DS		ANAPCV	AUTO	-
Overlay Label	6000,1500	LO		ANAPCV	FIXED	-
Overlay Data	6000,3000	OW/OB		ALWAYS	AUTO	-

Table 18: VOI LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Window Center	0028,1050	DS		ANAP	AUTO	-
Window Width	0028,1051	DS		ANAP	AUTO	-

Table 19: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	AUTO, COPY	-
Instance Creation Date	0008,0012	DA		ANAPCV	AUTO	-
Instance Creation Time	0008,0013	TM		ANAPCV	AUTO	-
Instance Creator UID	0008,0014	UI		ANAPCV	AUTO	-
SOP Class UID	0008,0016	UI		ALWAYS	FIXED	-
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	-

Table 20: Extended DICOM and private attributes for MR Image Storage SOP Class Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Code Value	0008,0100	SH		ANAPCV	COPY	-

Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
Code Meaning	0008,0104	LO		ANAPCV	COPY	-
Derivation Image Sequence	0008,9124	SQ		ANAP	AUTO	-
>Source Image Sequence	0008,2112	SQ		ANAPCV	AUTO	-
>>Referenced SOP Class UID	0008,1150	UI		ANAPCV	AUTO	-
>>Referenced SOP Instance UID	0008,1155	UI		ANAPCV	AUTO	-
>Derivation Code Sequence	0008,9215	SQ		ANAPCV	AUTO	-
>>Code Value	0008,0100	SH		ANAPCV	AUTO	From CID 7203
>>Coding Scheme Designator	0008,0102	SH		ANAPCV	AUTO	From CID 7203
>>Coding Scheme Version	0008,0103	SH		ANAP	AUTO	From CID 7203
>>Code Meaning	0008,0104	LO		ANAPCV	AUTO	From CID 7203
Medical Alerts	0010,2000	LO		ANAPCV	COPY	-
Allergies	0010,2110	LO		ANAPCV	COPY	-
Pregnancy Status	0010,21C0	US		ANAPCV	COPY	-
Acquisition Duration	0018,9073	FD		ANAP	COPY	-
Diffusion b-value	0018,9087	FD		ANAP	AUTO	-
Diffusion Gradient Orientation	0018,9089	FD		ANAP	AUTO	-
Rescale Intercept	0028,1052	DS		ANAPCV	AUTO	When a value is present and not 0, then this value shall be used in the scaling calculation for the correct Window setting.
Rescale Slope	0028,1053	DS		ANAPCV	AUTO	When a value is present and not 0, then this value shall be used in the scaling calculation for the correct Window setting.
Rescale Type	0028,1054	LO		ANAPCV	AUTO	Applied value(s): cm/sec, milliradians, milliseconds, mm <sup>2</sup> /sec, liter/min, normalized, seconds, US. Values apply in case of quantitative images like QFLOW or Functional maps.
Requesting Physician	0032,1032	PN		ANAPCV	COPY	-
Requesting Service	0032,1033	LO		ANAPCV	COPY	-
Requested Procedure Description	0032,1060	LO		ANAPCV	COPY	-
Requested Contrast Agent	0032,1070	LO		ANAPCV	COPY	-
Study Comments (retired)	0032,4000	LT		ANAPCV	COPY	Maximally 32 characters copied from (0040, 0280) Comments on the Performed Procedure Steps.
Special Needs	0038,0050	LO		ANAPCV	COPY	-
Patient State	0038,0500	LO		ANAPCV	COPY	-
Scheduled Performing Physician's Name	0040,0006	PN		ANAPCV	COPY	-
Performed Station AE Title	0040,0241	AE		ANAPCV	CONFIG	-
Performed Station Name	0040,0242	SH		ANAPCV	CONFIG	-
Performed Location	0040,0243	SH		ANAPCV	CONFIG	-
Performed Procedure Step End Date	0040,0250	DA		ANAPCV	COPY	-
Performed Procedure Step End Time	0040,0251	TM		ANAPCV	COPY	-
Performed Procedure Step Status	0040,0252	CS		ANAPCV	COPY	-
Film Consumption Sequence	0040,0321	SQ		ANAPCV	AUTO	-

Requested Procedure ID	0040,1001	SH		ANAPCV	COPY	-
Reason for the Requested Procedure	0040,1002	LO		ANAPCV	COPY	-
Requested Procedure Priority	0040,1003	SH		ANAPCV	COPY	-
Patient Transport Arrangements	0040,1004	LO		ANAPCV	COPY	-
Requested Procedure Location	0040,1005	LO		ANAPCV	COPY	-
Requested Procedure Comments	0040,1400	LT		ANAPCV	COPY	-
Reason for the Imaging Service Request (retired)	0040,2001	LO		ANAPCV	COPY	-
Issue Date of Imaging Service Request	0040,2004	DA		ANAPCV	COPY	-
Issue Time of Imaging Service Request	0040,2005	TM		ANAPCV	COPY	-
Order Enterer's Location	0040,2009	SH		ANAPCV	COPY	-
Order Callback Phone Number	0040,2010	SH		ANAPCV	COPY	-
Imaging Service Request Comments	0040,2400	LT		ANAPCV	COPY	-
Real World Value Mapping Sequence	0040,9096	SQ		ANAPCV	COPY	-
>Real World Value Intercept	0040,9224	FD		ANAPCV	COPY	-
>Real World Value Slope	0040,9225	FD		ANAPCV	COPY	-
Private Creator Group 2001	2001,0010	LO		ANAPCV	FIXED	-
Chemical Shift	2001,1001	FL		ANAPCV	COPY	-
Chemical Shift Number MR	2001,1002	IS		ANAPCV	COPY	-
Diffusion B-Factor	2001,1003	FL		ANAPCV	COPY	-
Diffusion Direction	2001,1004	CS		ANAPCV	COPY	-
Image Enhanced	2001,1006	CS		ANAPCV	COPY	-
Image Type ED ES	2001,1007	CS		ANAPCV	COPY	-
Phase Number	2001,1008	IS		ANAPCV	COPY	-
Image Prepulse Delay	2001,1009	FL		ANAPCV	COPY	-
Slice Number MR	2001,100A	IS		ANAPCV	IMPLICIT	-
Slice Orientation	2001,100B	CS		ANAPCV	IMPLICIT	-
Arrhythmia Rejection	2001,100C	CS		ANAPCV	COPY	-
Cardiac Cycled	2001,100E	CS		ANAPCV	COPY	-
Cardiac Gate Width	2001,100F	SS		ANAPCV	COPY	-
Cardiac Sync	2001,1010	CS		ANAPCV	COPY	-
Diffusion Echo Time	2001,1011	FL		ANAPCV	IMPLICIT	-
Dynamic Series	2001,1012	CS		ANAPCV	COPY	-
EPI Factor	2001,1013	SL		ANAPCV	COPY	-
Number of Echoes	2001,1014	SL		ANAPCV	COPY	-
Number of Locations	2001,1015	SS		ANAPCV	COPY	-
Number of PC Directions	2001,1016	SS		ANAPCV	COPY	-
Number of Phases MR	2001,1017	SL		ANAPCV	COPY	-
Number of Slices MR	2001,1018	SL		ANAPCV	IMPLICIT, USER	-
Partial Matrix Scanned	2001,1019	CS		ANAPCV	COPY	-
PC Velocity	2001,101A	FL		ANAPCV	COPY	-
Prepulse Delay	2001,101B	FL		ANAPCV	COPY	-
Prepulse Type	2001,101C	CS		ANAPCV	COPY	-
Reconstruction Number MR	2001,101D	IS		ANAPCV	IMPLICIT	-
Respiration Sync	2001,101F	CS		ANAPCV	COPY	-

Series Type	2001,106E	LO		ANAPCV	COPY	-
Stack Sequence	2001,105F	SQ		ANAPCV	COPY	-
Scanning Technique	2001,1020	LO		ANAPCV	COPY	-
SPIR	2001,1021	CS		ANAPCV	COPY	-
Water Fat Shift	2001,1022	FL		ANAPCV	COPY	-
Flip Angle Philips	2001,1023	DS		ANAPCV	COPY	-
Series is Interactive	2001,1024	CS		ANAPCV	COPY	-
Echo Time Display	2001,1025	SH		ANAPCV	COPY	-
Contrast Transfer Taste	2001,1058	UL		ANAPCV	COPY	-
Number of Stacks	2001,1060	SL		ANAPCV	IMPLICIT	-
Series Transmitted	2001,1061	CS		ANAPCV	AUTO	-
Acquisition_No	2001,107B	IS		ANAPCV	COPY	-
No_Dynamic_Scans	2001,1081	IS		ANAPCV	COPY	-
IsrawImage	2001,10A1	CS		ANAPCV	COPY	-
Prospective Motion Correction	2001,10F1	FL		ANAPCV	COPY	Only applicable if retrospective correction is done on the data.
Retrospective Motion Correction	2001,10F2	FL		ANAPCV	COPY	Only applicable if retrospective correction is done on the data.
Private Creator Group 2005	2005,0010	LO		ANAPCV	FIXED	Applied value: Philips MR Imaging DD 001
Number of Chemical Shift	2005,1020	SL		ANAPCV	COPY	Only applicable for spectro 2dsi.
Syncra Scan Type	2005,10A1	CS		ANAPCV	COPY	If syncra scan. Applied values: SENSE, SYN_CLASSIC, SYN_COCA
Diffusion Direction RL	2005,10B0	FL		ANAPCV	COPY	Only applicable if Diffusion Direction is Oblique.
Diffusion Direction AP	2005,10B1	FL		ANAPCV	COPY	Only applicable if Diffusion Direction is Oblique.
Diffusion Direction FH	2005,10B2	FL		ANAPCV	COPY	Only applicable if Diffusion Direction is Oblique.

### 2.1.2.2. MR Spectroscopy Storage SOP Class

Table 21: IOD of Created MR Spectroscopy 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
Series	MR Series Module	ALWAYS
Frame of Reference	Frame of Reference Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Equipment	Enhanced General Equipment Module	ALWAYS
MR Spectroscopy	Acquisition Context Module	ALWAYS
MR Spectroscopy	Multi-frame Functional Groups Module (MR Spectroscopy)	ALWAYS
MR Spectroscopy	Multi-frame Dimension Module	ALWAYS
MR Spectroscopy	Cardiac Synchronization Module	CONDITIONAL
MR Spectroscopy	Respiratory Synchronization Module	CONDITIONAL
MR Spectroscopy	Bulk Motion Synchronization Module	CONDITIONAL
MR Spectroscopy	MR Spectroscopy Module	ALWAYS
MR Spectroscopy	MR Spectroscopy Pulse Sequence Module	CONDITIONAL
MR Spectroscopy	MR Spectroscopy Data Module	ALWAYS

MR Spectroscopy	SOP Common Module	ALWAYS
	Extended Dicom and Private attributes	ALWAYS

Table 22: 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		VNAP	COPY	-
Other Patient IDs	0010,1000	LO		ANAPCV	COPY	-
Ethnic Group	0010,2160	SH		ANAPCV	COPY	-
Patient Comments	0010,4000	LT		ANAPCV	COPY	-

Table 23: General Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	-
Study Time	0008,0030	TM		VNAP	COPY	-
Accession Number	0008,0050	SH		VNAP	COPY	-
Referring Physician's Name	0008,0090	PN		VNAP	COPY	-
Study Description	0008,1030	LO		ANAPCV	COPY	-
Procedure Code Sequence	0008,1032	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ALWAYS	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Mapping Resource	0008,0105	CS		ANAPCV	COPY	-
>Context Group Version	0008,0106	DT		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
>Context Identifier	0008,010F	CS		ANAPCV	COPY	-
Physician(s) of Record	0008,1048	PN		ANAPCV	COPY	-
Name of Physician(s) Reading Study	0008,1060	PN		ANAPCV	COPY	-
Referenced Study Sequence	0008,1110	SQ		ANAPCV	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Study Instance UID	0020,000D	UI		ALWAYS	COPY	-
Study ID	0020,0010	SH		VNAP	COPY	-

Table 24: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAPCV	COPY	-
Patient's Age	0010,1010	AS		ANAPCV	COPY	-
Patient's Size	0010,1020	DS		ANAPCV	COPY	-
Patient's Weight	0010,1030	DS		ANAPCV	COPY	-
Occupation	0010,2180	SH		ANAPCV	COPY	-
Additional Patient History	0010,21B0	LT		ANAPCV	COPY	-

Table 25: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ANAPCV	AUTO	-
Series Time	0008,0031	TM		ANAPCV	AUTO	-
Series Description	0008,103E	LO		ANAPCV	AUTO, USER	-
Performing Physician's Name	0008,1050	PN		ANAPCV	COPY	-
Operators' Name	0008,1070	PN		ANAPCV	COPY	-
Body Part Examined	0018,0015	CS		ANAPCV	COPY	-
Protocol Name	0018,1030	LO		ANAPCV	AUTO	-
Patient Position	0018,5100	CS		ANAPCV	COPY	-
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-
Series Number	0020,0011	IS		VNAP	AUTO	-
Laterality	0020,0060	CS		ANAPCV	COPY	-
Request Attributes Sequence	0040,0275	SQ		ANAPCV	COPY	-
>Scheduled Procedure Step Description	0040,0007	LO		ANAPCV	COPY	-
>Scheduled Protocol Code Sequence	0040,0008	SQ		ANAPCV	COPY	-
>Scheduled Procedure Step ID	0040,0009	SH		ANAP	COPY	-
>Requested Procedure ID	0040,1001	SH		ANAP	COPY	-
Performed Procedure Step Start Date	0040,0244	DA		ANAPCV	COPY	-
Performed Procedure Step Start Time	0040,0245	TM		ANAPCV	COPY	-
Performed Procedure Step ID	0040,0253	SH		ANAPCV	COPY	-
Performed Procedure Step Description	0040,0254	LO		ANAPCV	COPY	-
Performed Protocol Code Sequence	0040,0260	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ANAPCV	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Mapping Resource	0008,0105	CS		ANAPCV	COPY	-
>Context Group Version	0008,0106	DT		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
>Context Identifier	0008,010F	CS		ANAPCV	COPY	-
Comments on the Performed Procedure Step	0040,0280	ST		ANAPCV	COPY	-

Table 26: MR Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	COPY	-
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAPCV	COPY	-



Table 27: Frame of Reference Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Frame of Reference UID	0020,0052	UI		ALWAYS	COPY	-
Position Reference Indicator	0020,1040	LO		VNAP	FIXED	-

Table 28: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Institution Name	0008,0080	LO		ANAPCV	COPY	-
Institution Address	0008,0081	ST		ANAPCV	COPY	-
Station Name	0008,1010	SH		ANAPCV	COPY	-
Institutional Department Name	0008,1040	LO		ANAPCV	COPY	-

Table 29: Enhanced General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips Medical Systems	VNAP	COPY	Philips Medical Systems
Manufacturer's Model Name	0008,1090	LO		ANAPCV	COPY	-
Device Serial Number	0018,1000	LO		ANAPCV	FIXED	System serial number.
Software Version(s)	0018,1020	LO		ANAPCV	COPY	

Table 30: Acquisition Context Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Acquisition Context Sequence	0040,0555	SQ		ANAPCV	COPY	-

Table 31: Multi-frame Functional Groups Module (MR Spectroscopy)

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Content Date	0008,0023	DA		ALWAYS	COPY	-
Content Time	0008,0033	TM		ALWAYS	COPY	-
Instance Number	0020,0013	IS		ALWAYS	COPY	-
Number of Frames	0028,0008	IS		ALWAYS	COPY	-
Shared Functional Groups Sequence	5200,9229	SQ		VNAP	COPY	Always present in combination with the Per-frame Functional Groups Sequence (5200,9230)
>Pixel Measures Sequence	0028,9110	SQ		ALWAYS	COPY	-
>>Slice Thickness	0018,0050	DS		ANAP	COPY	-
>>Pixel Spacing	0028,0030	DS		ANAP	COPY	-
>Plane Position Sequence	0020,9113	SQ		ALWAYS	COPY	-
>>Image Position (Patient)	0020,0032	DS		ANAP	COPY	-
>Plane Orientation Sequence	0020,9116	SQ		ALWAYS	COPY	-
>>Image Orientation (Patient)	0020,0037	DS		ANAP	COPY	-
>Referenced Image Sequence	0008,1140	SQ		ANAP	COPY	-
>>Purpose of Reference Code Sequence	0040,A170	SQ		ALWAYS	COPY	-
>>>Code Value	0008,0100	SH		ALWAYS	COPY	-
>>>Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	-
>>>Code Meaning	0008,0104	LO		ALWAYS	COPY	-
>>Referenced Frame Number	0008,1160	IS		ANAP	COPY	-
>Cardiac Synchronization Sequence	0018,9118	SQ		ANAP	COPY	-

>>Nominal Cardiac Trigger Delay Time	0020,9153	FD		ALWAYS	COPY	-
>>R - R Interval Time Nominal	0020,9251	FD		ANAP	COPY	-
>Respiratory Synchronization Sequence	0020,9253	SQ		ANAP	COPY	-
>>Respiratory Interval Time	0020,9254	FD		ALWAYS	COPY	-
>>Nominal Respiratory Trigger Delay Time	0020,9255	FD		ALWAYS	COPY	-
>MR Spectroscopy Frame Type Sequence	0018,9227	SQ		ALWAYS	COPY	-
>>Frame Type	0008,9007	CS		ALWAYS	COPY	-
>>Volumetric Properties	0008,9206	CS		ALWAYS	COPY	-
>>Volume Based Calculation Technique	0008,9207	CS		ALWAYS	COPY	-
>>Complex Image Component	0008,9208	CS		ALWAYS	COPY	-
>>Acquisition Contrast	0008,9209	CS		ALWAYS	COPY	-
>MR Timing and Related Parameters Sequence	0018,9112	SQ		ALWAYS	COPY	-
>>Repetition Time	0018,0080	DS		ANAP	COPY	-
>>Echo Train Length	0018,0091	IS		ANAP	COPY	-
>>Flip Angle	0018,1314	DS		ANAP	COPY	-
>>Operating Mode Sequence	0018,9176	SQ		ANAP	COPY	-
>>>Operating Mode Type	0018,9177	CS		ALWAYS	COPY	-
>>>Operating Mode	0018,9178	CS		ALWAYS	COPY	-
>>Gradient Output Type	0018,9180	CS		ANAP	COPY	-
>>Gradient Output	0018,9182	FD		ANAP	COPY	-
>>Specific Absorption Rate Sequence	0018,9239	SQ		ANAP	COPY	-
>>>Specific Absorption Rate Definition	0018,9179	CS		ALWAYS	COPY	-
>>>Specific Absorption Rate Value	0018,9181	FD		ALWAYS	COPY	-
>>RF Echo Train Length	0018,9240	US		ANAP	COPY	-
>>Gradient Echo Train Length	0018,9241	US		ANAP	COPY	-
>MR Spectroscopy FOV/Geometry Sequence	0018,9103	SQ		ALWAYS	COPY	-
>>Percent Sampling	0018,0093	DS		ANAP	COPY	-
>>Percent Phase Field of View	0018,0094	DS		ANAP	COPY	-
>>Spectroscopy Acquisition Phase Rows	0018,9095	UL		ANAP	COPY	-
>>Spectroscopy Acquisition Data Columns	0018,9127	UL		ANAP	COPY	-
>>Spectroscopy Acquisition Out-of-plane Phase Steps	0018,9159	UL		ANAP	COPY	-
>>Spectroscopy Acquisition Phase Columns	0018,9234	UL		ANAP	COPY	-
>MR Echo Sequence	0018,9114	SQ		ALWAYS	COPY	-
>>Effective Echo Time	0018,9082	FD		ANAP	COPY	-
>MR Modifier Sequence	0018,9115	SQ		ALWAYS	COPY	-
>>Inversion Recovery	0018,9009	CS		ANAP	COPY	-
>>Flow Compensation	0018,9010	CS		ANAP	COPY	-
>>Spoiling	0018,9016	CS		ANAP	COPY	-
>>T2 Preparation	0018,9021	CS		ANAP	COPY	-
>>Spectrally Selected Excitation	0018,9026	CS		ANAP	COPY	-

>>Spatial Pre-saturation	0018,9027	CS		ANAP	COPY	-
>>Partial Fourier Direction	0018,9036	CS		ANAP	COPY	-
>>Parallel Reduction Factor In-plane	0018,9069	FD		ANAP	COPY	-
>>Parallel Acquisition	0018,9077	CS		ANAP	COPY	-
>>Parallel Acquisition Technique	0018,9078	CS		ANAP	COPY	-
>>Inversion Times	0018,9079	FD		ANAP	COPY	-
>>Partial Fourier	0018,9081	CS		ANAP	COPY	-
>>Parallel Reduction Factor out-of-plane	0018,9155	FD		ANAP	COPY	-
>>Parallel Reduction Factor Second In-plane	0018,9168	FD		ANAP	COPY	-
>>Flow Compensation Direction	0018,9183	CS		ANAP	COPY	-
>MR Receive Coil Sequence	0018,9042	SQ		ALWAYS	COPY	-
>>Receive Coil Name	0018,1250	SH		ANAP	COPY	-
>>Receive Coil Manufacturer Name	0018,9041	LO		EMPTY	COPY	-
>>Receive Coil Type	0018,9043	CS		ANAP	COPY	-
>>Quadrature Receive Coil	0018,9044	CS		ANAP	COPY	-
>>Multi-Coil Definition Sequence	0018,9045	SQ		ANAP	COPY	-
>>>Multi-Coil Element Name	0018,9047	SH		ALWAYS	COPY	-
>>>Multi-Coil Element Used	0018,9048	CS		ALWAYS	COPY	-
>MR Transmit Coil Sequence	0018,9049	SQ		ANAP	COPY	-
>>Transmit Coil Name	0018,1251	SH		ALWAYS	COPY	-
>>Transmit Coil Manufacturer Name	0018,9050	LO		EMPTY	COPY	-
>>Transmit Coil Type	0018,9051	CS		ANAP	COPY	-
>MR Diffusion Sequence	0018,9117	SQ		ANAP	COPY	-
>>Diffusion Directionality	0018,9075	CS		ANAP	COPY	-
>>Diffusion Gradient Direction Sequence	0018,9076	SQ		ANAP	COPY	-
>>>Diffusion Gradient Orientation	0018,9089	FD		ANAP	COPY	-
>>Diffusion b-value	0018,9087	FD		ANAP	COPY	-
>>Diffusion Anisotropy Type	0018,9147	CS		ANAP	COPY	-
>>Diffusion b-matrix Sequence	0018,9601	SQ		ANAP	COPY	-
>MR Averages Sequence	0018,9119	SQ		ALWAYS	COPY	-
>>Number of Averages	0018,0083	DS		ANAP	COPY	-
>MR Spatial Saturation Sequence	0018,9107	SQ		ANAPCV	COPY	-
>>Slab Thickness	0018,9104	FD		ALWAYS	COPY	-
>>Slab Orientation	0018,9105	FD		ALWAYS	COPY	-
>>Mid Slab Position	0018,9106	FD		ALWAYS	COPY	-
>MR Velocity Encoding Sequence	0018,9197	SQ		ANAP	COPY	-
>>Velocity Encoding Direction	0018,9090	FD		ANAP	COPY	-
>>Velocity Encoding Minimum Value	0018,9091	FD		ANAP	COPY	-
>>Velocity Encoding Maximum Value	0018,9217	FD		ANAP	COPY	-
>Frame Anatomy Sequence	0020,9071	SQ		ANAP	COPY	-

>>Frame Laterality	0020,9072	CS		ALWAYS	COPY	-
>>Anatomic Region Sequence	0008,2218	SQ		ALWAYS	COPY	-
>>>Code Value	0008,0100	SH		ALWAYS	COPY	-
>>>Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	-
>>>Code Meaning	0008,0104	LO		ALWAYS	COPY	-
Per-frame Functional Groups Sequence	5200,9230	SQ		ALWAYS	COPY	Always present in combination with the Shared Functional Groups Sequence (5200,9229)
>Pixel Measures Sequence	0028,9110	SQ		ALWAYS	COPY	-
>>Slice Thickness	0018,0050	DS		ANAP	COPY	-
>>Pixel Spacing	0028,0030	DS		ANAP	COPY	-
>Frame Content Sequence	0020,9111	SQ		ALWAYS	COPY	-
>>Frame Acquisition Datetime	0018,9074	DT		ANAP	COPY	-
>>Frame Reference Datetime	0018,9151	DT		ANAP	COPY	-
>>Frame Acquisition Duration	0018,9220	FD		ANAP	COPY	-
>>Stack ID	0020,9056	SH		ANAP	COPY	-
>>In-Stack Position Number	0020,9057	UL		ANAP	COPY	-
>Plane Position Sequence	0020,9113	SQ		ALWAYS	COPY	-
>>Image Position (Patient)	0020,0032	DS		ANAP	COPY	-
>Plane Orientation Sequence	0020,9116	SQ		ALWAYS	COPY	-
>>Image Orientation (Patient)	0020,0037	DS		ANAP	COPY	-
>Referenced Image Sequence	0008,1140	SQ		ANAP	COPY	-
>>Purpose of Reference Code Sequence	0040,A170	SQ		ALWAYS	COPY	-
>>>Code Value	0008,0100	SH		ALWAYS	COPY	-
>>>Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	-
>>>Code Meaning	0008,0104	LO		ALWAYS	COPY	-
>>Referenced Frame Number	0008,1160	IS		ANAP	COPY	-
>Cardiac Synchronization Sequence	0018,9118	SQ		ALWAYS	COPY	-
>>Nominal Cardiac Trigger Delay Time	0020,9153	FD		ALWAYS	COPY	-
>>R - R Interval Time Nominal	0020,9251	FD		ANAP	COPY	-
>MR Timing and Related Parameters Sequence	0018,9112	SQ		ALWAYS	COPY	-
>>Repetition Time	0018,0080	DS		ANAP	COPY	-
>>Echo Train Length	0018,0091	IS		ANAP	COPY	-
>>Flip Angle	0018,1314	DS		ANAP	COPY	-
>>Operating Mode Sequence	0018,9176	SQ		ANAP	COPY	-
>>>Operating Mode Type	0018,9177	CS		ALWAYS	COPY	-
>>>Operating Mode	0018,9178	CS		ALWAYS	COPY	-
>>Gradient Output Type	0018,9180	CS		ANAP	COPY	-
>>Gradient Output	0018,9182	FD		ANAP	COPY	-
>>Specific Absorption Rate Sequence	0018,9239	SQ		ANAP	COPY	-
>>>Specific Absorption Rate Definition	0018,9179	CS		ALWAYS	COPY	-
>>>Specific Absorption Rate Value	0018,9181	FD		ALWAYS	COPY	-
>>RF Echo Train Length	0018,9240	US		ANAP	COPY	-
>>Gradient Echo Train Length	0018,9241	US		ANAP	COPY	-
>MR Echo Sequence	0018,9114	SQ		ALWAYS	COPY	-
>>Effective Echo Time	0018,9082	FD		ANAP	COPY	-

>Respiratory Synchronization Sequence	0020,9253	SQ		ANAP	COPY	-
>>Respiratory Interval Time	0020,9254	FD		ALWAYS	COPY	-
>>Nominal Respiratory Trigger Delay Time	0020,9255	FD		ALWAYS	COPY	-
>MR Modifier Sequence	0018,9115	SQ		ALWAYS	COPY	-
>>Inversion Recovery	0018,9009	CS		ANAP	COPY	-
>>Flow Compensation	0018,9010	CS		ANAP	COPY	-
>>Spoiling	0018,9016	CS		ANAP	COPY	-
>>T2 Preparation	0018,9021	CS		ANAP	COPY	-
>>Spectrally Selected Excitation	0018,9026	CS		ANAP	COPY	-
>>Spatial Pre-saturation	0018,9027	CS		ANAP	COPY	-
>>Partial Fourier Direction	0018,9036	CS		ANAP	COPY	-
>>Parallel Reduction Factor In-plane	0018,9069	FD		ANAP	COPY	-
>>Parallel Acquisition	0018,9077	CS		ANAP	COPY	-
>>Parallel Acquisition Technique	0018,9078	CS		ANAP	COPY	-
>>Inversion Times	0018,9079	FD		ANAP	COPY	-
>>Partial Fourier	0018,9081	CS		ANAP	COPY	-
>>Parallel Reduction Factor out-of-plane	0018,9155	FD		ANAP	COPY	-
>>Parallel Reduction Factor Second In-plane	0018,9168	FD		ANAP	COPY	-
>>Flow Compensation Direction	0018,9183	CS		ANAP	COPY	-
>MR Receive Coil Sequence	0018,9042	SQ		ANAP	COPY	-
>>Receive Coil Name	0018,1250	SH		ALWAYS	COPY	-
>>Receive Coil Manufacturer Name	0018,9041	LO		EMPTY	COPY	-
>>Receive Coil Type	0018,9043	CS		ANAP	COPY	-
>>Quadrature Receive Coil	0018,9044	CS		ANAP	COPY	-
>>Multi-Coil Definition Sequence	0018,9045	SQ		ANAP	COPY	-
>>>Multi-Coil Element Name	0018,9047	SH		ALWAYS	COPY	-
>>>Multi-Coil Element Used	0018,9048	CS		ALWAYS	COPY	-
>MR Transmit Coil Sequence	0018,9049	SQ		ALWAYS	COPY	-
>>Transmit Coil Name	0018,1251	SH		ALWAYS	COPY	-
>>Transmit Coil Manufacturer Name	0018,9050	LO		EMPTY	COPY	-
>>Transmit Coil Type	0018,9051	CS		ANAP	COPY	-
>MR Diffusion Sequence	0018,9117	SQ		ANAP	COPY	-
>>Diffusion Directionality	0018,9075	CS		ANAP	COPY	-
>>Diffusion Gradient Direction Sequence	0018,9076	SQ		ANAP	COPY	-
>>>Diffusion Gradient Orientation	0018,9089	FD		ANAP	COPY	-
>>Diffusion b-value	0018,9087	FD		ANAP	COPY	-
>>Diffusion Anisotropy Type	0018,9147	CS		ANAP	COPY	-
>Frame Anatomy Sequence	0020,9071	SQ		ALWAYS	COPY	-
>>Frame Laterality	0020,9072	CS		ALWAYS	COPY	-
>>Anatomic Region Sequence	0008,2218	SQ		ALWAYS	COPY	-
>>>Code Value	0008,0100	SH		ALWAYS	COPY	-
>>>Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	-

>>>Code Meaning	0008,0104	LO		ALWAYS	COPY	-
>MR Spectroscopy Frame Type Sequence	0018,9227	SQ		ALWAYS	COPY	-
>>Frame Type	0008,9007	CS		ALWAYS	COPY	-
>>Volumetric Properties	0008,9206	CS		ALWAYS	COPY	-
>>Volume Based Calculation Technique	0008,9207	CS		ALWAYS	COPY	-
>>Complex Image Component	0008,9208	CS		ALWAYS	COPY	-
>>Acquisition Contrast	0008,9209	CS		ALWAYS	COPY	-
>MR Spectroscopy FOV/Geometry Sequence	0018,9103	SQ		ALWAYS	COPY	-
>>Percent Sampling	0018,0093	DS		ANAP	COPY	-
>>Percent Phase Field of View	0018,0094	DS		ANAP	COPY	-
>>Spectroscopy Acquisition Phase Rows	0018,9095	UL		ANAP	COPY	-
>>Spectroscopy Acquisition Data Columns	0018,9127	UL		ANAP	COPY	-
>>Spectroscopy Acquisition Out-of-plane Phase Steps	0018,9159	UL		ANAP	COPY	-
>>Spectroscopy Acquisition Phase Columns	0018,9234	UL		ANAP	COPY	-
>MR Averages Sequence	0018,9119	SQ		ALWAYS	COPY	-
>>Number of Averages	0018,0083	DS		ANAP	COPY	-
>MR Spatial Saturation Sequence	0018,9107	SQ		ANAP	COPY	-
>>Slab Thickness	0018,9104	FD		ALWAYS	COPY	-
>>Slab Orientation	0018,9105	FD		ALWAYS	COPY	-
>>Mid Slab Position	0018,9106	FD		ALWAYS	COPY	-
>MR Velocity Encoding Sequence	0018,9197	SQ		ANAP	COPY	-
>>Velocity Encoding Direction	0018,9090	FD		ANAP	COPY	-
>>Velocity Encoding Minimum Value	0018,9091	FD		ANAP	COPY	-
>>Velocity Encoding Maximum Value	0018,9217	FD		ANAP	COPY	-

Table 32: Multi-frame Dimension Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Dimension Organization Sequence	0020,9221	SQ		ALWAYS	COPY	-
>Dimension Organization UID	0020,9164	UI		ALWAYS	COPY	-
Dimension Index Sequence	0020,9222	SQ		ALWAYS	COPY	-
>Dimension Organization UID	0020,9164	UI		ANAP	COPY	-
>Dimension Index Pointer	0020,9165	AT		ALWAYS	COPY	-
>Functional Group Pointer	0020,9167	AT		ANAP	COPY	-
>Dimension Index Private Creator	0020,9213	LO		ANAP	COPY	-
>Functional Group Private Creator	0020,9238	LO		ANAP	COPY	-

**Table 33: Cardiac Synchronization Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Low R-R Value	0018,1081	IS		ANAPCV	COPY	-
High R-R Value	0018,1082	IS		ANAPCV	COPY	-
Intervals Acquired	0018,1083	IS		ANAPCV	COPY	-
Intervals Rejected	0018,1084	IS		ANAPCV	COPY	-
Cardiac Synchronization Technique	0018,9037	CS		ANAP	COPY	-
Cardiac R-R Interval Specified	0018,9070	FD		ANAP	COPY	-
Cardiac Signal Source	0018,9085	CS		ANAP	COPY	-
Cardiac Beat Rejection Technique	0018,9169	CS		ANAP	COPY	-

**Table 34: Respiratory Synchronization Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Respiratory Motion Compensation Technique	0018,9170	CS		ANAP	COPY	-
Respiratory Signal Source	0018,9171	CS		ANAP	COPY	-
Respiratory Trigger Delay Threshold	0020,9256	FD		ANAP	COPY	-

**Table 35: Bulk Motion Synchronization Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Bulk Motion Compensation Technique	0018,9172	CS		ANAP	COPY	-

**Table 36: MR Spectroscopy Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS	DERIVED, SECONDARY, SPECTROSCOPY, NONE	ALWAYS	AUTO	Applied value: DERIVED, SECONDARY, SPECTROSCOPY, NONE
Spectral Width	0018,9052	FD		ANAP	COPY	-
Chemical Shift Reference	0018,9053	FD		ANAP	COPY	-
Volume Localization Technique	0018,9054	CS		ANAP	COPY	-
De-coupling	0018,9059	CS		ANAP	COPY	-
De-coupled Nucleus	0018,9060	CS		ANAP	COPY	-
De-coupling Frequency	0018,9061	FD		ANAP	COPY	-
De-coupling Method	0018,9062	CS		ANAP	COPY	-
De-coupling Chemical Shift Reference	0018,9063	FD		ANAP	COPY	-
Time Domain Filtering	0018,9065	CS		ANAP	COPY	-
Number of Zero fills	0018,9066	US		ANAP	COPY	-
Baseline Correction	0018,9067	CS		ANAP	COPY	-
Transmitter Frequency	0018,9098	FD		ANAP	COPY	-
Frequency Correction	0018,9101	CS		ANAP	COPY	-
Volume Localization Sequence	0018,9126	SQ		ANAP	COPY	-
>Slab Thickness	0018,9104	FD		ALWAYS	COPY	-
>Slab Orientation	0018,9105	FD		ALWAYS	COPY	-

>Mid Slab Position	0018,9106	FD		ANAP	COPY	-
First Order Phase Correction	0018,9198	CS		ANAP	COPY	-
Water Referenced Phase Correction	0018,9199	CS		ANAP	COPY	-
Acquisition Datetime	0008,002A	DT		ANAP	COPY	-
Source Image Evidence Sequence	0008,9154	SQ		ANAPCV	COPY	-
>Referenced Series Sequence	0008,1115	SQ		ANAP	COPY	-
>>Referenced SOP Sequence	0008,1199	SQ		ALWAYS	COPY	-
>>>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>>>>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
>>Series Instance UID	0020,000E	UI		ALWAYS	COPY	-
>Study Instance UID	0020,000D	UI		ALWAYS	COPY	-
Magnetic Field Strength	0018,0087	DS		ANAP	COPY	-
Content Qualification	0018,9004	CS		ALWAYS	COPY	-
k-space Filtering	0018,9064	CS		ANAP	COPY	-
Acquisition Duration	0018,9073	FD		ANAP	COPY	-
Resonant Nucleus	0018,9100	CS		ANAP	COPY	-
Applicable Safety Standard Agency	0018,9174	CS		ALWAYS	COPY	-
Acquisition Number	0020,0012	IS		ANAPCV	COPY	-
Image Comments	0020,4000	LT		ANAPCV	COPY	-
Volumetric Properties	0008,9206	CS		ALWAYS	COPY	-
Volume Based Calculation Technique	0008,9207	CS		ALWAYS	COPY	-
Complex Image Component	0008,9208	CS		ALWAYS	COPY	-
Acquisition Contrast	0008,9209	CS		ALWAYS	COPY	-

Table 37: MR Spectroscopy Pulse Sequence Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Pulse Sequence Name	0018,9005	SH		ANAP	COPY	-
Echo Pulse Sequence	0018,9008	CS		ANAP	COPY	-
Multiple Spin Echo	0018,9011	CS		ANAP	COPY	-
Multi-planar Excitation	0018,9012	CS		ANAP	COPY	-
Steady State Pulse Sequence	0018,9017	CS		ANAP	COPY	-
Echo Planar Pulse Sequence	0018,9018	CS		ANAP	COPY	-
Spectrally Selected Suppression	0018,9025	CS		ANAP	COPY	-
Geometry of k-Space Traversal	0018,9032	CS		ANAP	COPY	-
Segmented k-Space Traversal	0018,9033	CS		ANAP	COPY	-
Rectilinear Phase Encode Reordering	0018,9034	CS		ANAP	COPY	-
Number of k-Space Trajectories	0018,9093	US		ANAP	COPY	-
Coverage of k-Space	0018,9094	CS		ANAP	COPY	-
MR Spectroscopy Acquisition Type	0018,9200	CS		ANAP	COPY	-

Table 38: MR Spectroscopy Data Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rows	0028,0010	US		ALWAYS	AUTO	-
Columns	0028,0011	US		ALWAYS	AUTO	-



Data Point Rows	0028,9001	UL		ALWAYS	AUTO	-
Data Point Columns	0028,9002	UL		ALWAYS	AUTO	-
Signal Domain Columns	0028,9003	CS		ALWAYS	AUTO	FREQUENCY
Data Representation	0028,9108	CS		ALWAYS	AUTO	-
First Order Phase Correction Angle	5600,0010	OF		ANAP	AUTO	-
Spectroscopy Data	5600,0020	OF		ALWAYS	AUTO	-

Table 39: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	AUTO, COPY	-
Instance Creation Date	0008,0012	DA		ANAPCV	AUTO	-
Instance Creation Time	0008,0013	TM		ANAPCV	AUTO	-
Instance Creator UID	0008,0014	UI		ANAPCV	AUTO	-
SOP Class UID	0008,0016	UI		ALWAYS	FIXED	-
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	-

Table 40: Extended DICOM and private attributes for MR Spectroscopy Storage SOP Class Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Derivation Image Sequence	0008,9124	SQ		ANAP	AUTO	-
>Source Image Sequence	0008,2112	SQ		ANAPCV	AUTO	-
>>Referenced SOP Class UID	0008,1150	UI		ANAPCV	AUTO	-
>>Referenced SOP Instance UID	0008,1155	UI		ANAPCV	AUTO	-
>Derivation Code Sequence	0008,9215	SQ		ANAPCV	AUTO	-
>>Code Value	0008,0100	SH		ANAPCV	AUTO	From CID 7203
>>Coding Scheme Designator	0008,0102	SH		ANAPCV	AUTO	From CID 7203
>>Coding Scheme Version	0008,0103	SH		ANAP	AUTO	From CID 7203
>>Code Meaning	0008,0104	LO		ANAPCV	AUTO	From CID 7203
Medical Alerts	0010,2000	LO		ANAPCV	COPY	-
Allergies	0010,2110	LO		ANAPCV	COPY	-
Pregnancy Status	0010,21C0	US		ANAPCV	COPY	-
Scanning Sequence	0018,0020	CS		ALWAYS	AUTO	{"RM"}
Sequence Variant	0018,0021	CS		ALWAYS	AUTO	{"NONE"}
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	Applied value: 1, 3
Photometric Interpretation	0028,0004	CS	MONOCHROME2	ALWAYS	AUTO	Applied values: MONOCHROME2
Planar Configuration	0028,0006	US		ANAP	AUTO	-
Window Center	0028,1050	DS		ANAP	AUTO	-
Window Width	0028,1051	DS		ANAP	AUTO	-
Bits Allocated	0028,0100	US		ALWAYS	AUTO	-
Bits Stored	0028,0101	US		ALWAYS	AUTO	-
High Bit	0028,0102	US		ALWAYS	AUTO	-
Pixel Representation	0028,0103	US		ALWAYS	AUTO	-
Rescale Intercept	0028,1052	DS		ANAP	AUTO	-
Rescale Slope	0028,1053	DS		ANAP	AUTO	-
Rescale Type	0028,1054	LO	normalized	ANAP	AUTO	Applied value(s): normalized
Special Needs	0038,0050	LO		ANAPCV	COPY	-
Patient State	0038,0500	LO		ANAPCV	COPY	-
Scheduled Performing Physician's Name	0040,0006	PN		ANAPCV	COPY	-

Pixel Data	7FE0,0010	O W/ OB		ANAP	AUTO	-
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### 2.1.2.3. Secondary Capture Image Storage SOP Class

**Table 41: 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	CONDITIONAL
Equipment	SC Equipment Module	ALWAYS
Image	General Image Module	ALWAYS
Image	Image Pixel Module	ALWAYS
Image	SC Image Module	ALWAYS
Image	Overlay Plane Module	CONDITIONAL
Image	Modality LUT Module	CONDITIONAL
Image	VOI LUT Module	CONDITIONAL
Image	SOP Common Module	ALWAYS
	Extended Dicom and Private attributes	

**Table 42: 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		VNAP	COPY	-
Other Patient IDs	0010,1000	LO		ANAPCV	COPY	-
Ethnic Group	0010,2160	SH		ANAPCV	COPY	-
Patient Comments	0010,4000	LT		ANAPCV	COPY	-

**Table 43: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	-
Study Time	0008,0030	TM		VNAP	COPY	-
Accession Number	0008,0050	SH		VNAP	COPY	-
Referring Physician's Name	0008,0090	PN		VNAP	COPY	-
Study Description	0008,1030	LO		ANAPCV	COPY	-
Procedure Code Sequence	0008,1032	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ALWAYS	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Mapping Resource	0008,0105	CS		ANAPCV	COPY	-
>Context Group Version	0008,0106	DT		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-

>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
Physician(s) of Record	0008,1048	PN		ANAPCV	COPY	-
Name of Physician(s) Reading Study	0008,1060	PN		ANAPCV	COPY	-
Referenced Study Sequence	0008,1110	SQ		ANAPCV	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Study Instance UID	0020,000D	UI		ALWAYS	COPY	-
Study ID	0020,0010	SH		VNAP	COPY	-

Table 44: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAPCV	COPY	-
Patient's Age	0010,1010	AS		ANAPCV	COPY	-
Patient's Size	0010,1020	DS		ANAPCV	COPY	-
Patient's Weight	0010,1030	DS		ANAPCV	COPY	-
Occupation	0010,2180	SH		ANAPCV	COPY	-
Additional Patient History	0010,21B0	LT		ANAPCV	COPY	-

Table 45: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ANAPCV	AUTO	-
Series Time	0008,0031	TM		ANAPCV	AUTO	-
Series Description	0008,103E	LO		ANAPCV	AUTO, USER	-
Performing Physician's Name	0008,1050	PN		ANAPCV	COPY	-
Operators' Name	0008,1070	PN		ANAPCV	AUTO	-
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAPCV	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	-
Body Part Examined	0018,0015	CS		ANAPCV	COPY	-
Protocol Name	0018,1030	LO		ANAPCV	COPY	-
Patient Position	0018,5100	CS		ANAPCV	COPY	-
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-
Series Number	0020,0011	IS		VNAP	AUTO	-
Laterality	0020,0060	CS		ANAPCV	COPY	-
Smallest Pixel Value in Series	0028,0108	US /SS		ANAP	AUTO	-
Largest Pixel Value in Series	0028,0109	US /SS		ANAP	AUTO	-
Request Attributes Sequence	0040,0275	SQ		ANAPCV	COPY	-
>Scheduled Procedure Step Description	0040,0007	LO		ANAPCV	COPY	-
>Scheduled Protocol Code Sequence	0040,0008	SQ		ANAPCV	COPY	-
>>Code Value	0008,0100	SH		ALWAYS	COPY	-
>>Coding Scheme Designator	0008,0102	SH		ALWAYS	COPY	-
>>Coding Scheme Version	0008,0103	SH		ANAP	COPY	-

>>Code Meaning	0008,0104	LO		ALWAYS	COPY	-
>>Mapping Resource	0008,0105	CS		ANAP	COPY	-
>>Context Group Version	0008,0106	DT		ANAP	COPY	-
>>Context Group Local Version	0008,0107	DT		ANAP	COPY	-
>>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>>Context Group Extension Creator UID	0008,010D	UI		ANAP	COPY	-
>>Context Identifier	0008,010F	CS		ANAPCV	COPY	-
>Scheduled Procedure Step ID	0040,0009	SH		ANAP	COPY	-
>Requested Procedure ID	0040,1001	SH		ANAP	COPY	-
Performed Procedure Step Start Date	0040,0244	DA		ANAPCV	COPY	-
Performed Procedure Step Start Time	0040,0245	TM		ANAPCV	COPY	-
Performed Procedure Step ID	0040,0253	SH		ANAPCV	COPY	-
Performed Procedure Step Description	0040,0254	LO		ANAPCV	COPY	-
Performed Protocol Code Sequence	0040,0260	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ANAPCV	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
Comments on the Performed Procedure Step	0040,0280	ST		ANAPCV	COPY	-

Table 46: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips Medical Systems	VNAP	COPY	Philips Medical Systems
Institution Name	0008,0080	LO		ANAPCV	COPY	-
Institution Address	0008,0081	ST		ANAPCV	COPY	-
Station Name	0008,1010	SH		ANAPCV	COPY	-
Institutional Department Name	0008,1040	LO		ANAPCV	COPY	-
Manufacturer's Model Name	0008,1090	LO		ANAPCV	COPY	-
Device Serial Number	0018,1000	LO		ANAPCV	FIXED	-
Software Version(s)	0018,1020	LO		ANAPCV	COPY	-

Table 47: SC Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ANAPCV	AUTO	-
Conversion Type	0008,0064	CS		ALWAYS	AUTO	-
Secondary Capture Device Manufacturer	0018,1016	LO	Philips Medical Systems	ANAPCV	AUTO	Philips Medical Systems
Secondary Capture Device Manufacturer's Model Name	0018,1018	LO	IntelliSpace Portal	ANAPCV	AUTO	IntelliSpace Portal
Secondary Capture Device Software Version(s)	0018,1019	LO		ANAPCV	AUTO	-

Table 48: General Image Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Type	0008,0008	CS	DERIVED\SECONDARY	ANAPCV	AUTO, COPY	Applied value: DERIVED, SECONDARY
Acquisition Date	0008,0022	DA		ANAPCV	COPY	-
Content Date	0008,0023	DA		ANAPCV	AUTO	-
Acquisition Time	0008,0032	TM		ANAPCV	COPY	-
Content Time	0008,0033	TM		ANAPCV	AUTO	-
Acquisition Number	0020,0012	IS		ANAPCV	COPY	-
Instance Number	0020,0013	IS		VNAP	AUTO	-
Patient Orientation	0020,0020	CS		ANAPCV	COPY	-
Image Comments	0020,4000	LT		ANAPCV	AUTO	-
Burned In Annotation	0028,0301	CS		ANAPCV	AUTO, COPY	-
Lossy Image Compression	0028,2110	CS		ANAPCV	COPY	Applied value: 00

Table 49: Image Pixel Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Samples per Pixel	0028,0002	US		ALWAYS	AUTO	Applied value: 1, 3
Photometric Interpretation	0028,0004	CS		ALWAYS	IMPLICIT	Applied values: MONOCHROME2, RGB
Planar Configuration	0028,0006	US		ANAP	AUTO	-
Rows	0028,0010	US		ALWAYS	AUTO	-
Columns	0028,0011	US		ALWAYS	AUTO	-
Pixel Aspect Ratio	0028,0034	IS		ANAP	AUTO	Applied value: (1,1)
Bits Allocated	0028,0100	US		ALWAYS	AUTO	-
Bits Stored	0028,0101	US		ALWAYS	AUTO	-
High Bit	0028,0102	US		ALWAYS	AUTO	-
Pixel Representation	0028,0103	US		ALWAYS	AUTO	-
Pixel Data	7FE0,0010	O W/ OB		ANAP	AUTO	-

Table 50: SC Image Module

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

Table 51: Overlay Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	6000,0010	US		ALWAYS	AUTO	-
Overlay Columns	6000,0011	US		ALWAYS	AUTO	-
Overlay Description	6000,0022	LO		ANAPCV	AUTO	-
Overlay Type	6000,0040	CS		ALWAYS	AUTO	-
Overlay Subtype	6000,0045	LO		ANAPCV	AUTO	-
Overlay Origin	6000,0050	SS		ALWAYS	AUTO	-
Overlay Bits Allocated	6000,0100	US		ALWAYS	AUTO	-
Overlay Bit Position	6000,0102	US		ALWAYS	AUTO	-
ROI Area	6000,1301	IS		ANAPCV	AUTO	-

ROI Mean	6000,1302	DS		ANAPCV	AUTO	-
ROI Standard Deviation	6000,1303	DS		ANAPCV	AUTO	-
Overlay Label	6000,1500	LO		ANAPCV	AUTO	-
Overlay Data	6000,3000	O W/ OB		ALWAYS	AUTO	-

Table 52: Modality LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rescale Intercept	0028,1052	DS		ANAP	AUTO	-
Rescale Slope	0028,1053	DS		ANAP	AUTO	-
Rescale Type	0028,1054	LO		ANAP	AUTO	-
Modality LUT Sequence	0028,3000	SQ		ANAP	AUTO	-
>LUT Descriptor	0028,3002	US /SS		ANAP	AUTO	-
>LUT Explanation	0028,3003	LO		ANAPCV	AUTO	-
>Modality LUT Type	0028,3004	LO		ANAP	AUTO	-
>LUT Data	0028,3006	US /O W		ANAP	AUTO	-

Table 53: VOI LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Window Center	0028,1050	DS		ANAP	AUTO	-
Window Width	0028,1051	DS		ANAP	AUTO	-
Window Center & Width Explanation	0028,1055	LO		ANAPCV	AUTO	-
VOI LUT Sequence	0028,3010	SQ		ANAP	AUTO	-

Table 54: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	AUTO, COPY	-
Instance Creation Date	0008,0012	DA		ANAPCV	AUTO	-
Instance Creation Time	0008,0013	TM		ANAPCV	AUTO	-
Instance Creator UID	0008,0014	UI		ANAPCV	AUTO	-
SOP Class UID	0008,0016	UI		ALWAYS	AUTO	-
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	-

Table 55: Extended DICOM and private attributes for Secondary Capture Image Storage SOP Class Instances

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Medical Alerts	0010,2000	LO		ANAPCV	COPY	-
Allergies	0010,2110	LO		ANAPCV	COPY	-
Pregnancy Status	0010,21C0	US		ANAPCV	COPY	-
Special Needs	0038,0050	LO		ANAPCV	COPY	-
Patient State	0038,0500	LO		ANAPCV	COPY	-
Scheduled Performing Physician's Name	0040,0006	PN		ANAP	COPY	-
Performed Station AE Title	0040,0241	AE		ANAPCV	COPY	-

Performed Procedure Step End Time	0040,0251	TM		ANAPCV	COPY	-
Comments on the Performed Procedure Step	0040,0280	ST		ANAPCV	COPY	-
Film Consumption Sequence	0040,0321	SQ		ANAPCV	COPY	-

#### 2.1.2.4. Encapsulated PDF Storage

**Table 56: IOD of Created Encapsulated PDF Storage Instances**

Information Entity	Module	Presence Of Module
Patient	Patient Module	ALWAYS
Study	General Study Module	ALWAYS
Study	Patient Study Module	CONDITIONAL
Series	Encapsulated Document Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Equipment	SC Equipment Module	ALWAYS
Encapsulated Document	Encapsulated Document Module	ALWAYS
Encapsulated Document	SOP Common Module	ALWAYS

**Table 57: 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		VNAP	COPY	-
Other Patient IDs	0010,1000	LO		ANAPCV	COPY	-
Ethnic Group	0010,2160	SH		ANAPCV	COPY	-
Patient Comments	0010,4000	LT		ANAPCV	COPY	-

**Table 58: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	-
Study Time	0008,0030	TM		VNAP	COPY	-
Accession Number	0008,0050	SH		VNAP	COPY	-
Referring Physician's Name	0008,0090	PN		VNAP	COPY	-
Study Description	0008,1030	LO		ANAPCV	COPY	-
Procedure Code Sequence	0008,1032	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ALWAYS	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Mapping Resource	0008,0105	CS		ANAPCV	COPY	-
>Context Group Version	0008,0106	DT		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
Physician(s) of Record	0008,1048	PN		ANAPCV	COPY	-
Name of Physician(s) Reading Study	0008,1060	PN		ANAPCV	COPY	-
Referenced Study Sequence	0008,1110	SQ		ANAPCV	COPY	-

>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Study Instance UID	0020,000D	UI		ALWAYS	COPY	-
Study ID	0020,0010	SH		VNAP	COPY	-

Table 59: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAPCV	COPY	-
Admitting Diagnoses Code Sequence	0008,1084	SQ		ANAPCV	COPY	-
Patient's Age	0010,1010	AS		ANAPCV	COPY	-
Patient's Size	0010,1020	DS		ANAPCV	COPY	-
Patient's Weight	0010,1030	DS		ANAPCV	COPY	-
Occupation	0010,2180	SH		ANAPCV	COPY	-
Additional Patient History	0010,21B0	LT		ANAPCV	COPY	-

Table 60: Encapsulated Document Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	-
Series Description	0008,103E	LO	Reports	ANAPCV	AUTO	Reports
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-
Series Number	0020,0011	IS		ALWAYS	AUTO	-
Performed Procedure Step Start Date	0040,0244	DA		ANAPCV	COPY	-
Performed Procedure Step Start Time	0040,0245	TM		ANAPCV	COPY	-
Performed Procedure Step ID	0040,0253	SH		ANAPCV	COPY	-
Performed Procedure Step Description	0040,0254	LO		ANAPCV	AUTO	-
Performed Protocol Code Sequence	0040,0260	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ANAPCV	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	AUTO	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-

Table 61: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips Medical Systems	VNAP	COPY	Philips Medical Systems
Institution Name	0008,0080	LO		ANAPCV	COPY	-
Institution Address	0008,0081	ST		ANAPCV	COPY	-
Station Name	0008,1010	SH		ANAPCV	COPY	-
Institutional Department Name	0008,1040	LO		ANAPCV	COPY	-
Manufacturer's Model Name	0008,1090	LO		ANAPCV	COPY	-
Device Serial Number	0018,1000	LO		ANAPCV	COPY	-
Software Version(s)	0018,1020	LO		ANAPCV	COPY	-
Spatial Resolution	0018,1050	DS		ANAPCV	COPY	-
Date of Last Calibration	0018,1200	DA		ANAPCV	COPY	-



Time of Last Calibration	0018,1201	TM		ANAPCV	COPY	-
Pixel Padding Value	0028,0120	US /SS		ANAP	COPY	-

Table 62: SC Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ANAPCV	AUTO	-
Conversion Type	0008,0064	CS	WSD	ALWAYS	AUTO	-
Secondary Capture Device Manufacturer	0018,1016	LO	Philips Medical Systems	ANAPCV	AUTO	Philips Medical Systems
Secondary Capture Device Manufacturer's Model Name	0018,1018	LO	Philips Portal	ANAPCV	AUTO	Philips Portal
Secondary Capture Device Software Version(s)	0018,1019	LO		ANAPCV	AUTO	-

Table 63: Encapsulated Document Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Content Date	0008,0023	DA		VNAP	AUTO	-
Acquisition Datetime	0008,002A	DT		VNAP	AUTO	-
Content Time	0008,0033	TM		VNAP	AUTO	-
Instance Number	0020,0013	IS	1	ALWAYS	AUTO	-
Burned In Annotation	0028,0301	CS	YES	ALWAYS	AUTO	-
Concept Name Code Sequence	0040,A043	SQ		VNAP	AUTO	-
Document Title	0042,0010	ST		VNAP	AUTO	-
Encapsulated Document	0042,0011	OB		ALWAYS	AUTO	-
MIME Type of Encapsulated Document	0042,0012	LO	application/pdf	ALWAYS	AUTO	-
Source Instance Sequence	0042,0013	SQ		ANAP	AUTO	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	-

Table 64: SOP Common Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	AUTO	-
Instance Creation Date	0008,0012	DA		ANAPCV	AUTO	-
Instance Creation Time	0008,0013	TM		ANAPCV	AUTO	-
Instance Creator UID	0008,0014	UI		ANAPCV	AUTO	-
SOP Class UID	0008,0016	UI		ALWAYS	COPY	-
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	-
Timezone Offset From UTC	0008,0201	SH		ANAPCV	COPY	-
Contributing Equipment Sequence	0018,A001	SQ		ANAPCV	AUTO	-
>Manufacturer	0008,0070	LO	Philips Medical Systems	ALWAYS	FIXED	Philips Medical Systems
>Institution Address	0008,0081	ST	Philips Portal	ANAPCV	FIXED	Philips Portal
>Station Name	0008,1010	SH	Philips Portal	ANAPCV	CONFIG	Philips Portal
>Institutional Department Name	0008,1040	LO	Philips Portal	ANAPCV	FIXED	Philips Portal
>Software Version(s)	0018,1020	LO		ANAPCV	COPY	-
>Device Serial Number	0018,1000	LO	IntelliSpace Portal	ANAPCV	FIXED	IntelliSpace Portal
>Institution Name	0008,0080	LO	Philips Portal	ANAPCV	FIXED	Philips Portal
>Manufacturer's Model Name	0008,1090	LO	IntelliSpace Portal	ANAPCV	FIXED	IntelliSpace Portal

>Purpose of Reference Code Sequence	0040,A170	SQ		ALWAYS	FIXED	-
>>Code Value	0008,0100	SH	109102	ALWAYS	FIXED	109102
>>Coding Scheme Designator	0008,0102	SH	DCM	ALWAYS	FIXED	DCM
>>Code Meaning	0008,0104	LO	Processing Equipment	ALWAYS	FIXED	Processing Equipment

### 2.1.2.5. Grayscale Softcopy Presentation State Storage SOP Class

**Table 65: IOD of Created Grayscale Softcopy Presentation State 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
Series	Presentation Series Module	ALWAYS
Equipment	General Equipment Module	ALWAYS
Presentation State	Presentation State Identification Module	ALWAYS
Presentation State	Presentation State Relationship Module	ALWAYS
Presentation State	Display Shutter Module	CONDITIONAL
Presentation State	Overlay Plane Module	CONDITIONAL
Presentation State	Overlay Activation Module	CONDITIONAL
Presentation State	Displayed Area Module	CONDITIONAL
Presentation State	Graphic Annotation Module	CONDITIONAL
Presentation State	Spatial Transformation Module	CONDITIONAL
Presentation State	Graphic Layer Module	CONDITIONAL
Presentation State	Modality LUT Module	CONDITIONAL
Presentation State	Softcopy VOI LUT Module	CONDITIONAL
Presentation State	Softcopy Presentation LUT Module	ALWAYS
Presentation State	SOP Common Module	ALWAYS
	Extended Dicom and Private attributes	

**Table 66: 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		VNAP	COPY	-
Other Patient IDs	0010,1000	LO		ANAPCV	COPY	-
Ethnic Group	0010,2160	SH		ANAPCV	COPY	-
Patient Comments	0010,4000	LT		ANAPCV	COPY	-

**Table 67: General Study Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Study Date	0008,0020	DA		VNAP	COPY	-
Study Time	0008,0030	TM		VNAP	COPY	-
Accession Number	0008,0050	SH		VNAP	COPY	-
Referring Physician's Name	0008,0090	PN		VNAP	COPY	-
Study Description	0008,1030	LO		ANAPCV	COPY	-
Procedure Code Sequence	0008,1032	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ALWAYS	COPY	-

>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	COPY	-
>Mapping Resource	0008,0105	CS		ANAPCV	COPY	-
>Context Group Version	0008,0106	DT		ANAPCV	COPY	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
Physician(s) of Record	0008,1048	PN		ANAPCV	COPY	-
Name of Physician(s) Reading Study	0008,1060	PN		ANAPCV	COPY	-
Referenced Study Sequence	0008,1110	SQ		ANAPCV	COPY	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	COPY	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	COPY	-
Study Instance UID	0020,000D	UI		ALWAYS	COPY	-
Study ID	0020,0010	SH		VNAP	COPY	-

Table 68: Patient Study Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Admitting Diagnoses Description	0008,1080	LO		ANAPCV	COPY	-
Patient's Age	0010,1010	AS		ANAPCV	COPY	-
Patient's Size	0010,1020	DS		ANAPCV	COPY	-
Patient's Weight	0010,1030	DS		ANAPCV	COPY	-
Occupation	0010,2180	SH		ANAPCV	COPY	-
Additional Patient History	0010,21B0	LT		ANAPCV	COPY	-

Table 69: General Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Series Date	0008,0021	DA		ANAPCV	AUTO	-
Series Time	0008,0031	TM		ANAPCV	AUTO	-
Series Description	0008,103E	LO		ANAPCV	AUTO, USER	-
Operators' Name	0008,1070	PN		ANAPCV	AUTO	-
Referenced Performed Procedure Step Sequence	0008,1111	SQ		ANAPCV	AUTO	-
>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	-
>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	-
Body Part Examined	0018,0015	CS		ANAPCV	COPY	-
Protocol Name	0018,1030	LO		ANAPCV	COPY	-
Patient Position	0018,5100	CS		ANAPCV	COPY	-
Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-
Series Number	0020,0011	IS		VNAP	AUTO	-
Laterality	0020,0060	CS		ANAPCV	COPY	-
Request Attributes Sequence	0040,0275	SQ		ANAPCV	COPY	-
>Scheduled Procedure Step Description	0040,0007	LO		ANAPCV	COPY	-
>Scheduled Procedure Step ID	0040,0009	SH		ANAP	COPY	-
>Requested Procedure ID	0040,1001	SH		ANAP	COPY	-

Performed Procedure Step Start Date	0040,0244	DA		ANAPCV	COPY	-
Performed Procedure Step Start Time	0040,0245	TM		ANAPCV	COPY	-
Performed Procedure Step ID	0040,0253	SH		ANAPCV	COPY	-
Performed Procedure Step Description	0040,0254	LO		ANAPCV	AUTO	-
Performed Protocol Code Sequence	0040,0260	SQ		ANAPCV	COPY	-
>Code Value	0008,0100	SH		ANAPCV	COPY	-
>Coding Scheme Designator	0008,0102	SH		ANAPCV	COPY	-
>Coding Scheme Version	0008,0103	SH		ANAPCV	COPY	-
>Code Meaning	0008,0104	LO		ANAPCV	AUTO	-
>Context Group Local Version	0008,0107	DT		ANAPCV	COPY	-
>Context Group Extension Flag	0008,010B	CS		ANAPCV	COPY	-
>Context Group Extension Creator UID	0008,010D	UI		ANAPCV	COPY	-
>Context Identifier	0008,010F	CS		ANAPCV	AUTO	-
Comments on the Performed Procedure Step	0040,0280	ST		ANAPCV	COPY	Maximum of 64 characters, Comments added on MR

Table 70: Presentation Series Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Modality	0008,0060	CS		ALWAYS	AUTO	-

Table 71: General Equipment Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Manufacturer	0008,0070	LO	Philips Medical Systems	VNAP	COPY	Philips Medical Systems
Institution Name	0008,0080	LO		ANAPCV	COPY	-
Station Name	0008,1010	SH		ANAPCV	COPY	-
Institutional Department Name	0008,1040	LO		ANAPCV	COPY	-
Manufacturer's Model Name	0008,1090	LO		ANAPCV	COPY	-
Device Serial Number	0018,1000	LO		ANAPCV	FIXED	-
Software Version(s)	0018,1020	LO		ANAPCV	COPY	-

Table 72: Presentation State Identification Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Presentation Creation Date	0070,0082	DA		ALWAYS	AUTO	-
Presentation Creation Time	0070,0083	TM		ALWAYS	AUTO	-
Instance Number	0020,0013	IS		ALWAYS	AUTO	-
Content Label	0070,0080	CS		ALWAYS	AUTO	Applied values: AS LAST SEEN, NEW AT IMPORT
Content Description	0070,0081	LO		VNAP	AUTO	-
Content Creator's Name	0070,0084	PN		VNAP	AUTO	Same as Manufacturer's Module name.

Table 73: Presentation State Relationship Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Referenced Series Sequence	0008,1115	SQ		ALWAYS	AUTO	-
>Referenced Image Sequence	0008,1140	SQ		ALWAYS	AUTO	-
>>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	-

>>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	-
>Series Instance UID	0020,000E	UI		ALWAYS	AUTO	-

Table 74: Display Shutter Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Shutter Presentation Value	0018,1622	US		ANAPCV	AUTO	Applied value: 0

Table 75: Overlay Plane Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Rows	6000,0010	US		ALWAYS	AUTO	-
Overlay Columns	6000,0011	US		ALWAYS	AUTO	-
Overlay Description	6000,0022	LO		ANAPCV	AUTO	-
Overlay Type	6000,0040	CS		ALWAYS	AUTO	-
Overlay Subtype	6000,0045	LO		ANAPCV	AUTO	-
Overlay Origin	6000,0050	SS		ALWAYS	AUTO	-
Overlay Bits Allocated	6000,0100	US		ALWAYS	AUTO	-
Overlay Bit Position	6000,0102	US		ALWAYS	AUTO	-
ROI Area	6000,1301	IS		ANAPCV	AUTO	-
ROI Mean	6000,1302	DS		ANAPCV	AUTO	-
ROI Standard Deviation	6000,1303	DS		ANAPCV	AUTO	-
Overlay Label	6000,1500	LO		ANAPCV	AUTO	-
Overlay Data	6000,3000	O W/ OB		ALWAYS	AUTO	-

Table 76: Overlay Activation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Overlay Activation Layer	6000,1001	CS		ANAPCV	AUTO	applied value: 1

Table 77: Displayed Area Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Displayed Area Selection Sequence	0070,005A	SQ		ALWAYS	IMPLICIT	-
>Referenced Image Sequence	0008,1140	SQ		ANAP	IMPLICIT	-
>>Referenced SOP Class UID	0008,1150	UI		ALWAYS	IMPLICIT	-
>>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	IMPLICIT	-
>Displayed Area Top Left Hand Corner	0070,0052	SL		ALWAYS	IMPLICIT	-
>Displayed Area Bottom Right Hand Corner	0070,0053	SL		ALWAYS	IMPLICIT	-
>Presentation Size Mode	0070,0100	CS	MAGNIFY, SCALE TO FIT	ALWAYS	IMPLICIT	Applied values: MAGNIFY, SCALE TO FIT
>Presentation Pixel Spacing	0070,0101	DS		ANAP	IMPLICIT	Applied values: (0.0, 0.0)
>Presentation Pixel Aspect Ratio	0070,0102	IS		ANAP	IMPLICIT	-
>Presentation Pixel Magnification Ratio	0070,0103	FL		ANAP	IMPLICIT	-
>Zoom Mode	2001,103F	CS		ANAPCV	IMPLICIT	-

Table 78: Graphic Annotation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Graphic Annotation Sequence	0070,0001	SQ		ALWAYS	IMPLICIT	-
>Referenced Image Sequence	0008,1140	SQ		ANAP	IMPLICIT	-
>>Referenced SOP Class UID	0008,1150	UI		ALWAYS	IMPLICIT	-
>>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	IMPLICIT	-
>Graphic Layer	0070,0002	CS		ALWAYS	IMPLICIT	-
>Text Object Sequence	0070,0008	SQ		ANAP	IMPLICIT	-
>>Anchor Point Annotation Units	0070,0004	CS		ANAP	IMPLICIT	-
>>Unformatted Text Value	0070,0006	ST		ALWAYS	IMPLICIT	-
>>Anchor Point	0070,0014	FL		ANAP	IMPLICIT	-
>>Anchor Point Visibility	0070,0015	CS		ANAP	IMPLICIT	-
>Graphic Object Sequence	0070,0009	SQ		ANAP	AUTO	-
>>Graphic Annotation Units	0070,0005	CS		ALWAYS	IMPLICIT	-
>>Graphic Dimensions	0070,0020	US		ALWAYS	IMPLICIT	-
>>Number of Graphic Points	0070,0021	US		ALWAYS	IMPLICIT	-
>>Graphic Data	0070,0022	FL		ALWAYS	IMPLICIT	-
>>Graphic Type	0070,0023	CS		ALWAYS	IMPLICIT	-
>>Graphic Filled	0070,0024	CS		ANAP	IMPLICIT	-

Table 79: Spatial Transformation Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Image Horizontal Flip	0070,0041	CS		ALWAYS	IMPLICIT	-
Image Rotation	0070,0042	US		ALWAYS	IMPLICIT	-

Table 80: Graphic Layer Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Graphic Layer Sequence	0070,0060	SQ		ALWAYS	IMPLICIT	-
>Graphic Layer	0070,0002	CS		ALWAYS	IMPLICIT	-
>Graphic Layer Order	0070,0062	IS		ALWAYS	IMPLICIT	-

Table 81: Modality LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Rescale Intercept	0028,1052	DS		ANAP	COPY	-
Rescale Slope	0028,1053	DS		ANAP	COPY	-
Rescale Type	0028,1054	LO	cm/sec, l/min, millirads, milliseconds, mm <sup>2</sup> /sec, normalized, seconds, US	ANAP	COPY	Applied value(s): cm/sec, milliradians, milliseconds, mm <sup>2</sup> /sec, liter/min, normalized, seconds, US

Table 82: Softcopy VOI LUT Module

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Softcopy VOI LUT Sequence	0028,3110	SQ		ALWAYS	AUTO	-
>Referenced Image Sequence	0008,1140	SQ		ANAP	AUTO	-
>>Referenced SOP Class UID	0008,1150	UI		ALWAYS	AUTO	-
>>Referenced SOP Instance UID	0008,1155	UI		ALWAYS	AUTO	-

>Window Center	0028,1050	DS		ANAP	AUTO	-
>Window Width	0028,1051	DS		ANAP	AUTO	-

**Table 83: Softcopy Presentation LUT Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Presentation LUT Sequence	2050,0010	SQ		ANAP	AUTO	Present if Presentation LUT Shape not present
>LUT Descriptor	0028,3002	US /SS		ALWAYS	AUTO	-
>LUT Data	0028,3006	US /O W		ALWAYS	AUTO	-
Presentation LUT Shape	2050,0020	CS		ANAP	AUTO	-

**Table 84: SOP Common Module**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Specific Character Set	0008,0005	CS		ANAP	AUTO	-
Instance Creation Date	0008,0012	DA		ANAPCV	AUTO	-
Instance Creator UID	0008,0014	UI		ANAPCV	AUTO	-
SOP Class UID	0008,0016	UI	1.2.840.10008.5.1.4.1.1.11.1	ALWAYS	AUTO	Applied Value(s): 1.2.840.10008.5.1.4.1.1.11.1
SOP Instance UID	0008,0018	UI		ALWAYS	AUTO	-

**Table 85: Extended DICOM and private attributes for Grayscale Softcopy Presentation State Storage SOP Class Instances**

Attribute Name	Tag	VR	Value	Presence of Value	Source	Comment
Medical Alerts	0010,2000	LO		ANAPCV	COPY	-
Allergies	0010,2110	LO		ANAPCV	COPY	-
Pregnancy Status	0010,21C0	US		ANAPCV	COPY	-
Requesting Physician	0032,1032	PN		ANAPCV	COPY	-
Requesting Service	0032,1033	LO		ANAPCV	COPY	-
Requested Procedure Description	0032,1060	LO		ANAPCV	AUTO	-
Study Comments (retired)	0032,4000	LT		ANAPCV	AUTO, USER	Comments added on MR
Special Needs	0038,0050	LO		ANAPCV	COPY	-
Patient State	0038,0500	LO		ANAPCV	COPY	-
Scheduled Performing Physician's Name	0040,0006	PN		ANAPCV	AUTO	-
Performed Procedure Step End Time	0040,0251	TM		ANAPCV	AUTO	-
Performed Procedure Step Status	0040,0252	CS		ANAPCV	AUTO	-
Requested Procedure ID	0040,1001	SH		ANAPCV	AUTO	-
Requested Procedure Comments	0040,1400	LT		ANAPCV	COPY, USER	-
Imaging Service Request Comments	0040,2400	LT		ANAPCV	COPY, USER	-
Private Creator Group 2001	2001,0010	LO		ANAPCV	AUTO	-
Private Creator Group 2001 (90)	2001,0090	LO		ANAPCV	AUTO	-
Presentation State Subtraction Active	2001,1026	CS		ANAPCV	AUTO	-

Series Transmitted	2001,1061	CS		ANAPCV	AUTO	-
Series Committed	2001,1062	CS		ANAPCV	AUTO	-
Examination Source	2001,1063	CS		ANAPCV	AUTO	-
LinearPresentationGLTrafoShapeSub	2001,1067	CS		VNAP	AUTO	-
GL TrafoType	2001,1077	CS		ANAPCV	AUTO	-
Pixel Processing Kernel Size	2001,109F	US		ANAPCV	AUTO	-