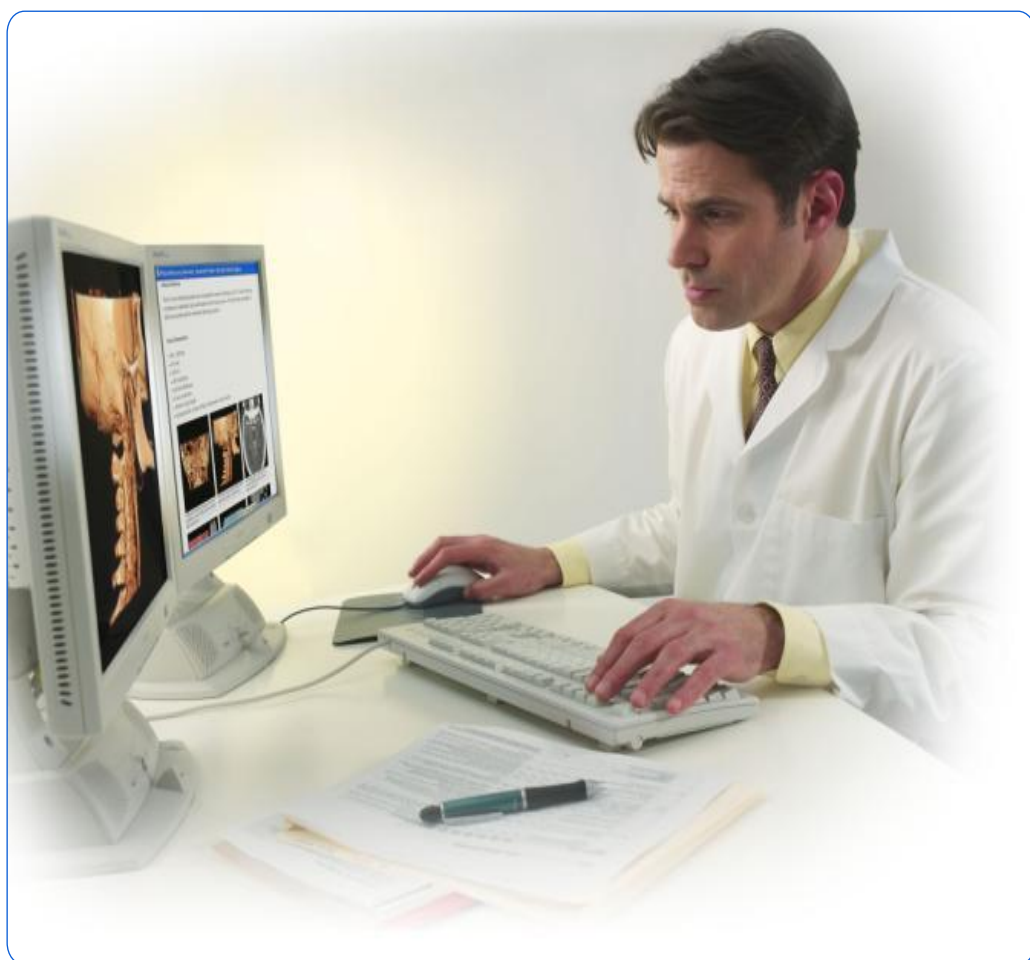


DICOM Conformance Statement

Application Annex:

CT Applications on Philips IntelliSpace Portal V4.0



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1. Introduction

This DICOM Conformance Statement annex is applicable to the CT Applications on Philips IntelliSpace Portal V4.0 hosting platform, later referred to as CT Applications. In general the CT Applications are the user environment for viewing and analyzing CT images.

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

- CT Viewer
- Advanced Vessel Analysis (AVA)
- Brain perfusion (BP)
- Comprehensive Cardiac Analysis (CCA)
- Cardiac Viewer (CV)
- Lung Nodule Assessment (LNA)
- Virtual Colonoscopy (VC)
- Calcium Scoring (CS)
- Functional CT (FCT)
- Lung Density (LD)

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 Jul 2011 | Final version | Updated after review. |

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 CT Applications.

| | |
|----------|---|
| ACCEPTED | The applicable IOD is accepted for storage in the repository of the hosting platform and supported for import in CT Applications for viewing and analysis. |
| CREATED | The CT 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 |
| CT Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.2 | 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 |
| MR Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.4 | Yes | Yes |
| Nuclear Medicine Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.20 | Yes | No |
| Positron Emission Tomography Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.128 | Yes | No |

Note:

- 1) Only the CT Viewer supports acceptance of the CT, SC, MR, NM and PET Image Storage SOP Classes.
- 2) Only the Comprehensive Cardiac Analysis (CCA) and Cardiac Viewer (CV) packages are able to fuse CT & PET/NM Data, but no creation.

2.1.1. Acceptance Criteria

This section specifies the acceptance criteria applied by CT 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 |
| CT Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.2 | 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, FOP (Process 14) | 1.2.840.10008.1.2.4.70 |
| Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7 | 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- | 1.2.840.10008.1.2.4.70 |

| | | | |
|--|-----------------------------|---|------------------------|
| | | Hierarchical, FOP (Process 14) | |
| | | CT-private-ELE | 1.3.46.670589.33.1.4.1 |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 |
| MR Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.4 | Implicit VR Little Endian | 1.2.840.10008.1.2 |
| | | JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.2.840.10008.1.2.4.70 |
| Nuclear Medicine Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.20 | Explicit VR Little Endian | 1.2.840.10008.1.2.1 |
| | | Implicit VR Little Endian | 1.2.840.10008.1.2 |
| Positron Emission Tomography Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.128 | 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, FOP (Process 14) | 1.2.840.10008.1.2.4.70 |

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 |
| MWL | The attribute value source is a Modality Worklist |
| USER | The attribute value source is explicit user input |

2.1.2.1. CT Image Storage SOP Class

Table 6: IOD of Created CT 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 | Contrast/Bolus Module | CONDITIONAL |
| Image | CT 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 |
|------------------------------|-----------|----|-------|-------------------|---------------|---------|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAPCV | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | ALWAYS | COPY | - |
| Patient ID | 0010,0020 | LO | | ALWAYS | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY, USER | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAPCV | COPY, USER | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY, USER | - |
| Other Patient IDs | 0010,1000 | LO | | ANAPCV | COPY, USER | - |
| Other Patient Names | 0010,1001 | PN | | ANAPCV | COPY, USER | - |
| Ethnic Group | 0010,2160 | SH | | ANAPCV | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAPCV | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAPCV | COPY, USER | - |

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, USER | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY, USER | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAPCV | COPY | - |
| Study Description | 0008,1030 | LO | | ANAPCV | COPY, USER | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAPCV | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAPCV | COPY | - |
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAPCV | COPY | - |

| | | | | | | |
|--|-----------|----|--|--------|------------|---|
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAPCV | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAPCV | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAPCV | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO, COPY | - |
| Study ID | 0020,0010 | SH | | VNAP | AUTO, COPY | - |

Table 9: 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, USER | - |
| Patient's Size | 0010,1020 | DS | | ANAPCV | COPY, USER | - |
| Patient's Weight | 0010,1030 | DS | | ANAPCV | COPY, USER | - |
| 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 | COPY, USER | - |
| Performing Physician's Name | 0008,1050 | PN | | ANAPCV | COPY | - |
| Operators' Name | 0008,1070 | PN | | ANAPCV | COPY, USER | - |
| Operator Identification Sequence | 0008,1072 | SQ | | ANAPCV | COPY | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAPCV | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | 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 | | ALWAYS | AUTO | - |
| Laterality | 0020,0060 | CS | | ANAPCV | COPY | - |
| Smallest Pixel Value in Series | 0028,0108 | US /SS | | ANAPCV | COPY | - |
| Largest Pixel Value in Series | 0028,0109 | US /SS | | ANAPCV | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAPCV | COPY | - |

| | | | | | | |
|--|-----------|----|--|--------|------|---|
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAPCV | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAPCV | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAPCV | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | 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 | COPY | - |

Table 12: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------|-----------|-------|-------|-------------------|------------|---------|
| Manufacturer | 0008,0070 | LO | | ALWAYS | COPY | - |
| Institution Name | 0008,0080 | LO | | ANAPCV | COPY, USER | - |
| Institution Address | 0008,0081 | ST | | ANAPCV | COPY, USER | - |
| Station Name | 0008,1010 | SH | | ALWAYS | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAPCV | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | | ALWAYS | COPY | - |
| Device Serial Number | 0018,1000 | LO | | ANAPCV | COPY | - |
| Software Version(s) | 0018,1020 | LO | 4.0 | ALWAYS | COPY | 4.0 |
| 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 | | 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 | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAPCV | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAPCV | COPY | - |
| Derivation Description | 0008,2111 | ST | | ANAPCV | COPY | - |
| Source Image Sequence | 0008,2112 | SQ | | ANAPCV | COPY | - |
| Derivation Code Sequence | 0008,9215 | SQ | | ANAPCV | COPY | - |
| Instance Number | 0020,0013 | IS | | ALWAYS | AUTO, COPY | - |
| Patient Orientation | 0020,0020 | CS | | ANAPCV | COPY | - |
| Images in Acquisition | 0020,1002 | IS | | ANAPCV | COPY | - |

| | | | | | | |
|--|-----------|---------------|--|--------|------|---|
| Quality Control Image | 0028,0300 | CS | | ANAPCV | COPY | - |
| Burned In Annotation | 0028,0301 | CS | | ANAPCV | COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAPCV | COPY | - |
| Lossy Image Compression Ratio | 0028,2112 | DS | | ANAPCV | COPY | - |
| Icon Image Sequence | 0088,0200 | SQ | | ANAPCV | COPY | - |
| >Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| >Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| >Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| >Rows | 0028,0010 | US | | ALWAYS | COPY | - |
| >Columns | 0028,0011 | US | | ALWAYS | COPY | - |
| >Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| >Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |
| >Bits Stored | 0028,0101 | US | | ALWAYS | COPY | - |
| >High Bit | 0028,0102 | US | | ALWAYS | COPY | - |
| >Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| >Smallest Image Pixel Value | 0028,0106 | US /SS | | ANAPCV | COPY | - |
| >Largest Image Pixel Value | 0028,0107 | US /SS | | ANAPCV | COPY | - |
| >Red Palette Color Lookup Table Descriptor | 0028,1101 | US /SS | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Descriptor | 0028,1102 | US /SS | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Descriptor | 0028,1103 | US /SS | | ANAP | COPY | - |
| >Red Palette Color Lookup Table Data | 0028,1201 | O W | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Data | 0028,1202 | O W | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Data | 0028,1203 | O W | | ANAP | COPY | - |
| >Pixel Data | 7FE0,0010 | O W/ OB | | ANAP | COPY | - |
| Presentation LUT Shape | 2050,0020 | CS | | ANAPCV | COPY | - |

Table 14: Image Plane Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-----------------------------|-----------|----|-------|-------------------|--------|---------|
| Slice Thickness | 0018,0050 | DS | | VNAP | COPY | - |
| Image Position (Patient) | 0020,0032 | DS | | ALWAYS | COPY | - |
| Image Orientation (Patient) | 0020,0037 | DS | | ALWAYS | COPY | - |
| Slice Location | 0020,1041 | DS | | ANAPCV | COPY | - |
| Pixel Spacing | 0028,0030 | DS | | ALWAYS | COPY | - |

Table 15: Image Pixel Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------|-----------|----|-------|-------------------|---------------|---------|
| Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| Rows | 0028,0010 | US | | ALWAYS | AUTO, COPY | - |
| Columns | 0028,0011 | US | | ALWAYS | AUTO, COPY | - |

| | | | | | | |
|---|-----------|---------------|--|--------|------|---|
| Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| Smallest Image Pixel Value | 0028,0106 | US /SS | | ANAPCV | COPY | - |
| Largest Image Pixel Value | 0028,0107 | US /SS | | ANAPCV | COPY | - |
| Red Palette Color Lookup Table Descriptor | 0028,1101 | US /SS | | ANAP | COPY | - |
| Green Palette Color Lookup Table Descriptor | 0028,1102 | US /SS | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Descriptor | 0028,1103 | US /SS | | ANAP | COPY | - |
| Red Palette Color Lookup Table Data | 0028,1201 | O W | | ANAP | COPY | - |
| Green Palette Color Lookup Table Data | 0028,1202 | O W | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Data | 0028,1203 | O W | | ANAP | COPY | - |
| Pixel Data | 7FE0,0010 | O W/ OB | | ALWAYS | COPY | - |

Table 16: Contrast/Bolus Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|--|-----------|----|-------|-------------------|--------|---------|
| Contrast/Bolus Agent | 0018,0010 | LO | | VNAP | COPY | - |
| Contrast/Bolus Agent Sequence | 0018,0012 | SQ | | ANAPCV | COPY | - |
| Contrast/Bolus Administration Route Sequence | 0018,0014 | SQ | | ANAPCV | COPY | - |
| >Additional Drug Sequence | 0018,002A | SQ | | ANAP | COPY | - |
| Contrast/Bolus Route | 0018,1040 | LO | | ANAPCV | COPY | - |
| Contrast/Bolus Volume | 0018,1041 | DS | | ANAPCV | COPY | - |
| Contrast/Bolus Start Time | 0018,1042 | TM | | ANAPCV | COPY | - |
| Contrast/Bolus Stop Time | 0018,1043 | TM | | ANAPCV | COPY | - |
| Contrast/Bolus Total Dose | 0018,1044 | DS | | ANAPCV | COPY | - |
| Contrast Flow Rate | 0018,1046 | DS | | ANAPCV | COPY | - |
| Contrast Flow Duration | 0018,1047 | DS | | ANAPCV | COPY | - |
| Contrast/Bolus Ingredient | 0018,1048 | CS | | ANAPCV | COPY | - |
| Contrast/Bolus Ingredient Concentration | 0018,1049 | DS | | ANAPCV | COPY | - |

Table 17: CT Image Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-----------------------------|-----------|----|-------|-------------------|--------|---------|
| Image Type | 0008,0008 | CS | | ALWAYS | AUTO | - |
| Scan Options | 0018,0022 | CS | | ANAPCV | AUTO | - |
| KVP | 0018,0060 | DS | | VNAP | COPY | - |
| Data Collection Diameter | 0018,0090 | DS | | ANAPCV | COPY | - |
| Reconstruction Diameter | 0018,1100 | DS | | ANAPCV | COPY | - |
| Distance Source to Detector | 0018,1110 | DS | | ANAPCV | COPY | - |
| Distance Source to Patient | 0018,1111 | DS | | ANAPCV | COPY | - |
| Gantry/Detector Tilt | 0018,1120 | DS | | ANAPCV | COPY | - |
| Table Height | 0018,1130 | DS | | ANAPCV | COPY | - |
| Rotation Direction | 0018,1140 | CS | | ANAPCV | COPY | - |

| | | | | | | |
|----------------------------|-----------|----|--|--------|------|---|
| Exposure Time | 0018,1150 | IS | | ANAPCV | COPY | - |
| X-ray Tube Current | 0018,1151 | IS | | ANAPCV | COPY | - |
| Exposure | 0018,1152 | IS | | ANAPCV | COPY | - |
| Exposure in μ As | 0018,1153 | IS | | ANAPCV | COPY | - |
| Filter Type | 0018,1160 | SH | | ANAPCV | COPY | - |
| Generator Power | 0018,1170 | IS | | ANAPCV | COPY | - |
| Focal Spot(s) | 0018,1190 | DS | | ANAPCV | COPY | - |
| Convolution Kernel | 0018,1210 | SH | | ANAPCV | COPY | - |
| Revolution Time | 0018,9305 | FD | | ANAPCV | COPY | - |
| Single Collimation Width | 0018,9306 | FD | | ANAPCV | COPY | - |
| Total Collimation Width | 0018,9307 | FD | | ANAPCV | COPY | - |
| Table Speed | 0018,9309 | FD | | ANAPCV | COPY | - |
| Table Feed per Rotation | 0018,9310 | FD | | ANAPCV | COPY | - |
| Spiral Pitch Factor | 0018,9311 | FD | | ANAPCV | COPY | - |
| Acquisition Number | 0020,0012 | IS | | VNAP | COPY | - |
| Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |
| Bits Stored | 0028,0101 | US | | ALWAYS | COPY | - |
| High Bit | 0028,0102 | US | | ALWAYS | COPY | - |
| Rescale Intercept | 0028,1052 | DS | | ALWAYS | COPY | - |
| Rescale Slope | 0028,1053 | DS | | ALWAYS | COPY | - |

Table 18: 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 | | ANAP | AUTO | - |

Table 19: VOI LUT Module

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

Table 20: 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 | | ALWAYS | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ALWAYS | 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 | | ANAP | AUTO | - |
| >Manufacturer | 0008,0070 | LO | Philips | ANAP | FIXED | PHILIPS. |
| >Institution Address | 0008,0081 | ST | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Station Name | 0008,1010 | SH | IntelliSpace Portal | ANAP | CONFIG | IntelliSpace Portal. |
| >Institutional Department Name | 0008,1040 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Software Version(s) | 0018,1020 | LO | 4.0 | ANAP | FIXED | 4.0 |
| >Device Serial Number | 0018,1000 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Institution Name | 0008,0080 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | ANAP | FIXED | - |
| >>Code Value | 0008,0100 | SH | 109102 | ANAP | FIXED | 109102 |
| >>Coding Scheme Designator | 0008,0102 | SH | DCM | ANAP | FIXED | DCM |
| >>Code Meaning | 0008,0104 | LO | Processing Equipment | ANAP | FIXED | Processing Equipment |

Table 21: Extended DICOM and private attributes for CT Image Storage SOP Class Instances

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-----------------------------|-----------|---------------|-------|-------------------|--------|---------|
| Scan Arc | 0018,1143 | DS | | ANAPCV | COPY | - |
| Spacing Between Slices | 0018,0088 | DS | | ANAPCV | COPY | - |
| Angular Position | 0018,1141 | DS | | ANAPCV | COPY | - |
| Heart Rate | 0018,1088 | IS | | ANAPCV | COPY | - |
| Curve Dimensions | 50xx,0005 | US | | ALWAYS | AUTO | - |
| Number of Points | 50xx,0010 | US | | ALWAYS | AUTO | - |
| Type of Data | 50xx,0020 | CS | | ALWAYS | AUTO | - |
| Data Value Representation | 50xx,0103 | US | | ALWAYS | AUTO | - |
| Curve Data | 50xx,3000 | OB /O W | | ALWAYS | AUTO | - |
| Curve Description | 50xx,0022 | LO | | ANAPCV | AUTO | - |
| Axis Units | 50xx,0030 | SH | | ANAPCV | AUTO | - |
| Axis Labels | 50xx,0040 | SH | | ANAPCV | AUTO | - |
| Minimum Coordinate Value | 50xx,0104 | US | | ANAPCV | AUTO | - |
| Maximum Coordinate Value | 50xx,0105 | US | | ANAPCV | AUTO | - |
| Curve Range | 50xx,0106 | SH | | ANAPCV | AUTO | - |
| Curve Data Descriptor | 50xx,0110 | US | | ANAP | AUTO | - |
| Coordinate Start Value | 50xx,0112 | US | | ANAP | AUTO | - |
| Coordinate Step Value | 50xx,0114 | US | | ANAP | AUTO | - |
| Curve Label | 50xx,2500 | LO | | ANAPCV | AUTO | - |
| Referenced Overlay Sequence | 50xx,2600 | SQ | | ANAPCV | AUTO | - |

| | | | | | | |
|------------------------------|-----------|----|--|------|------|---|
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | AUTO | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | AUTO | - |
| >Referenced Overlay Group | 50xx,2610 | US | | ANAP | AUTO | - |

2.1.2.2. Secondary Capture Image Storage SOP Class

Table 22: IOD of Created Secondary Capture Image Storage SOP Class Instances

| Information Entity | Module | Presence Of Module |
|--------------------|---------------------------------------|--------------------|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Study | Patient Study Module | CONDITIONAL |
| Series | General Series Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Equipment | SC Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| Image | Image Pixel Module | ALWAYS |
| Image | SC Image Module | ALWAYS |
| Image | Overlay Plane Module | CONDITIONAL |
| Image | Modality LUT Module | CONDITIONAL |
| Image | VOI LUT Module | CONDITIONAL |
| Image | SOP Common Module | ALWAYS |
| Image | Extended Dicom and Private attributes | CONDITIONAL |

Table 23: Patient Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------|-----------|----|-------|-------------------|------------|---------|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAPCV | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | ALWAYS | COPY | - |
| Patient ID | 0010,0020 | LO | | ALWAYS | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY, USER | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAPCV | COPY, USER | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY, USER | - |
| Other Patient IDs | 0010,1000 | LO | | ANAPCV | COPY, USER | - |
| Other Patient Names | 0010,1001 | PN | | ANAPCV | COPY, USER | - |
| Ethnic Group | 0010,2160 | SH | | ANAPCV | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAPCV | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAPCV | COPY, USER | - |

Table 24: 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, USER | - |

| | | | | | | |
|--|-----------|----|--|--------|------------|---|
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY, USER | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAPCV | COPY | - |
| Study Description | 0008,1030 | LO | | ANAPCV | COPY, USER | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAPCV | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAPCV | COPY | - |
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAPCV | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAPCV | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAPCV | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAPCV | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | - |
| Study ID | 0020,0010 | SH | | VNAP | AUTO | - |

Table 25: 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, USER | - |
| Patient's Size | 0010,1020 | DS | | ANAPCV | COPY, USER | - |
| Patient's Weight | 0010,1030 | DS | | ANAPCV | COPY, USER | - |
| Occupation | 0010,2180 | SH | | ANAPCV | COPY | - |
| Additional Patient History | 0010,21B0 | LT | | ANAPCV | COPY | - |

Table 26: 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 | COPY, USER | - |
| Performing Physician's Name | 0008,1050 | PN | | ANAPCV | COPY | - |
| Operators' Name | 0008,1070 | PN | | ANAPCV | COPY, USER | - |
| Operator Identification Sequence | 0008,1072 | SQ | | ANAPCV | COPY | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAPCV | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | 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 | | ALWAYS | AUTO | - |
| Laterality | 0020,0060 | CS | | ANAPCV | COPY | - |
| Smallest Pixel Value in Series | 0028,0108 | US /SS | | ANAPCV | COPY | - |
| Largest Pixel Value in Series | 0028,0109 | US /SS | | ANAPCV | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAPCV | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAPCV | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAPCV | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAPCV | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAPCV | COPY | - |
| Comments on the Performed Procedure Step | 0040,0280 | ST | | ANAPCV | COPY | - |

Table 27: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------|-----------|-----------|-------|-------------------|---------------|---------|
| Manufacturer | 0008,0070 | LO | | ALWAYS | COPY | - |
| Institution Name | 0008,0080 | LO | | ANAPCV | COPY, USER | - |
| Institution Address | 0008,0081 | ST | | ANAPCV | COPY, USER | - |
| Station Name | 0008,1010 | SH | | ALWAYS | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAPCV | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | | ALWAYS | COPY | - |
| Device Serial Number | 0018,1000 | LO | | ANAPCV | COPY | - |
| Software Version(s) | 0018,1020 | LO | 4.0 | ALWAYS | COPY | 4.0 |
| 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 | | ANAPCV | COPY | - |

Table 28: SC Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|--|-----------|----|-------|-------------------|--------|---------|
| Modality | 0008,0060 | CS | CT | ALWAYS | AUTO | - |
| Conversion Type | 0008,0064 | CS | WSD | ALWAYS | AUTO | - |
| Secondary Capture Device ID | 0018,1010 | LO | | ANAPCV | AUTO | - |
| Secondary Capture Device Manufacturer | 0018,1016 | LO | | ALWAYS | AUTO | - |
| Secondary Capture Device Manufacturer's Model Name | 0018,1018 | LO | | ALWAYS | AUTO | - |
| Secondary Capture Device Software Version(s) | 0018,1019 | LO | | ALWAYS | AUTO | - |
| Video Image Format Acquired | 0018,1022 | SH | | ANAPCV | AUTO | - |
| Digital Image Format Acquired | 0018,1023 | LO | | ANAPCV | AUTO | - |

Table 29: 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 | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAPCV | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAPCV | COPY | - |
| Derivation Description | 0008,2111 | ST | | ANAPCV | COPY | - |
| Source Image Sequence | 0008,2112 | SQ | | ANAPCV | COPY | - |
| Derivation Code Sequence | 0008,9215 | SQ | | ANAPCV | COPY | - |
| Instance Number | 0020,0013 | IS | | ALWAYS | AUTO, COPY | - |
| Patient Orientation | 0020,0020 | CS | | ANAPCV | COPY | - |
| Images in Acquisition | 0020,1002 | IS | | ANAPCV | COPY | - |
| Quality Control Image | 0028,0300 | CS | | ANAPCV | COPY | - |
| Burned In Annotation | 0028,0301 | CS | | ANAPCV | COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAPCV | COPY | - |
| Lossy Image Compression Ratio | 0028,2112 | DS | | ANAPCV | COPY | - |
| Icon Image Sequence | 0088,0200 | SQ | | ANAPCV | COPY | - |
| >Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| >Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| >Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| >Rows | 0028,0010 | US | | ALWAYS | COPY | - |
| >Columns | 0028,0011 | US | | ALWAYS | COPY | - |
| >Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| >Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |
| >Bits Stored | 0028,0101 | US | | ALWAYS | COPY | - |
| >High Bit | 0028,0102 | US | | ALWAYS | COPY | - |
| >Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| >Smallest Image Pixel Value | 0028,0106 | US /SS | | ANAPCV | COPY | - |
| >Largest Image Pixel Value | 0028,0107 | US /SS | | ANAPCV | COPY | - |
| >Red Palette Color Lookup Table Descriptor | 0028,1101 | US /SS | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Descriptor | 0028,1102 | US /SS | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Descriptor | 0028,1103 | US /SS | | ANAP | COPY | - |
| >Red Palette Color Lookup Table Data | 0028,1201 | O W | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Data | 0028,1202 | O W | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Data | 0028,1203 | O W | | ANAP | COPY | - |
| >Pixel Data | 7FE0,0010 | O W/ OB | | ANAP | COPY | - |

| | | | | | | |
|------------------------|-----------|----|--|--------|------|---|
| Presentation LUT Shape | 2050,0020 | CS | | ANAPCV | COPY | - |
|------------------------|-----------|----|--|--------|------|---|

Table 30: Image Pixel Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|-----------|---------|-------|-------------------|------------|---------|
| Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| Rows | 0028,0010 | US | | ALWAYS | AUTO, COPY | - |
| Columns | 0028,0011 | US | | ALWAYS | AUTO, COPY | - |
| Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| Smallest Image Pixel Value | 0028,0106 | US /SS | | ANAPCV | COPY | - |
| Largest Image Pixel Value | 0028,0107 | US /SS | | ANAPCV | COPY | - |
| Red Palette Color Lookup Table Descriptor | 0028,1101 | US /SS | | ANAP | COPY | - |
| Green Palette Color Lookup Table Descriptor | 0028,1102 | US /SS | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Descriptor | 0028,1103 | US /SS | | ANAP | COPY | - |
| Red Palette Color Lookup Table Data | 0028,1201 | O W | | ANAP | COPY | - |
| Green Palette Color Lookup Table Data | 0028,1202 | O W | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Data | 0028,1203 | O W | | ANAP | COPY | - |
| Pixel Data | 7FE0,0010 | O W/ OB | | ALWAYS | COPY | - |

Table 31: 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 32: 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 | | ANAP | AUTO | - |
|--------------|-----------|---------------|--|------|------|---|

Table 33: 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 | | ANAP | AUTO | - |
| >Modality LUT Type | 0028,3004 | LO | | ANAP | AUTO | - |
| >LUT Data | 0028,3006 | US /O W | | ANAP | AUTO | - |

Table 34: VOI LUT Module

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

Table 35: 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 | | ALWAYS | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ALWAYS | 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 | | ANAP | AUTO | - |
| >Manufacturer | 0008,0070 | LO | Philips | ANAP | FIXED | PHILIPS. |
| >Institution Address | 0008,0081 | ST | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Station Name | 0008,1010 | SH | IntelliSpace Portal | ANAP | CONFIG | IntelliSpace Portal. |
| >Institutional Department Name | 0008,1040 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Software Version(s) | 0018,1020 | LO | 4.0 | ANAP | FIXED | 4.0 |
| >Device Serial Number | 0018,1000 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Institution Name | 0008,0080 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | ANAP | FIXED | - |
| >>Code Value | 0008,0100 | SH | 109102 | ANAP | FIXED | 109102 |
| >>Coding Scheme Designator | 0008,0102 | SH | DCM | ANAP | FIXED | DCM |
| >>Code Meaning | 0008,0104 | LO | Processing Equipment | ANAP | FIXED | Processing Equipment |

Table 36: Extended DICOM and private attributes for Secondary Capture Image Storage SOP Class Instances

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------|-----------|---------------|-------|-------------------|--------|---------|
| Curve Dimensions | 50xx,0005 | US | | ALWAYS | AUTO | - |
| Number of Points | 50xx,0010 | US | | ALWAYS | AUTO | - |
| Type of Data | 50xx,0020 | CS | | ALWAYS | AUTO | - |
| Data Value Representation | 50xx,0103 | US | | ALWAYS | AUTO | - |
| Curve Data | 50xx,3000 | OB /O W | | ALWAYS | AUTO | - |
| Curve Description | 50xx,0022 | LO | | ANAPCV | AUTO | - |
| Axis Units | 50xx,0030 | SH | | ANAPCV | AUTO | - |
| Axis Labels | 50xx,0040 | SH | | ANAPCV | AUTO | - |
| Minimum Coordinate Value | 50xx,0104 | US | | ANAPCV | AUTO | - |
| Maximum Coordinate Value | 50xx,0105 | US | | ANAPCV | AUTO | - |
| Curve Range | 50xx,0106 | SH | | ANAPCV | AUTO | - |
| Curve Data Descriptor | 50xx,0110 | US | | ANAP | AUTO | - |
| Coordinate Start Value | 50xx,0112 | US | | ANAP | AUTO | - |
| Coordinate Step Value | 50xx,0114 | US | | ANAP | AUTO | - |
| Curve Label | 50xx,2500 | LO | | ANAPCV | AUTO | - |
| Referenced Overlay Sequence | 50xx,2600 | SQ | | ANAPCV | AUTO | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | AUTO | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | AUTO | - |
| >Referenced Overlay Group | 50xx,2610 | US | | ANAP | AUTO | - |

2.1.2.3. Encapsulated PDF Storage**Table 37: IOD of Created Encapsulated PDF Storage Instances**

| Information Entity | Module | Presence Of Module |
|-----------------------|-------------------------------------|--------------------|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| 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 38: Patient Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------|-----------|----|-------|-------------------|---------------|---------|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAPCV | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | ALWAYS | COPY | - |
| Patient ID | 0010,0020 | LO | | ALWAYS | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY, USER | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAPCV | COPY, USER | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY, USER | - |

| | | | | | | |
|----------------------|-----------|----|--|--------|------------|---|
| Other Patient IDs | 0010,1000 | LO | | ANAPCV | COPY, USER | - |
| Other Patient Names | 0010,1001 | PN | | ANAPCV | COPY, USER | - |
| Ethnic Group | 0010,2160 | SH | | ANAPCV | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAPCV | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAPCV | COPY, USER | - |

Table 39: 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, USER | - |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY, USER | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAPCV | COPY | - |
| Study Description | 0008,1030 | LO | | ANAPCV | COPY, USER | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAPCV | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAPCV | COPY | - |
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAPCV | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAPCV | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAPCV | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAPCV | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | - |
| Study ID | 0020,0010 | SH | | VNAP | AUTO | - |

Table 40: 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 | QC date-time-status | ANAPCV | AUTO | Describes date and time of QC procedure and pass/fail status. |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | - |
| Series Number | 0020,0011 | IS | 1 | ALWAYS | AUTO | - |

Table 41: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------|-----------|----|-------|-------------------|------------|---------|
| Manufacturer | 0008,0070 | LO | | ALWAYS | COPY | - |
| Institution Name | 0008,0080 | LO | | ANAPCV | COPY, USER | - |
| Institution Address | 0008,0081 | ST | | ANAPCV | COPY, USER | - |
| Station Name | 0008,1010 | SH | | ALWAYS | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAPCV | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | | ALWAYS | COPY | - |

| | | | | | | |
|--------------------------|-----------|-----|-----|--------|------|-----|
| Device Serial Number | 0018,1000 | LO | | ANAPCV | COPY | - |
| Software Version(s) | 0018,1020 | LO | 4.0 | ALWAYS | COPY | 4.0 |
| 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 | | ANAPCV | COPY | - |
| | | /SS | | | | |

Table 42: SC Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-----------------|-----------|----|-------|-------------------|--------|---------|
| Modality | 0008,0060 | CS | | ALWAYS | AUTO | - |
| Conversion Type | 0008,0064 | CS | WSD | ALWAYS | AUTO | - |

Table 43: Encapsulated Document Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------------|-----------|----|-------------------|-------------------|--------|---------|
| Content Date | 0008,0023 | DA | | ANAP | AUTO | - |
| Acquisition Datetime | 0008,002A | DT | | ANAP | AUTO | - |
| Content Time | 0008,0033 | TM | | ANAP | 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 | | EMPTY | AUTO | - |
| Document Title | 0042,0010 | ST | | EMPTY | AUTO | - |
| Encapsulated Document | 0042,0011 | OB | | ALWAYS | AUTO | - |
| MIME Type of Encapsulated Document | 0042,0012 | LO | application - PDF | ALWAYS | AUTO | - |

Table 44: 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 | | ALWAYS | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ALWAYS | 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 | | ANAP | AUTO | - |
| >Manufacturer | 0008,0070 | LO | Philips | ANAP | FIXED | PHILIPS. |
| >Institution Address | 0008,0081 | ST | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Station Name | 0008,1010 | SH | IntelliSpace Portal | ANAP | CONFIG | IntelliSpace Portal. |
| >Institutional Department Name | 0008,1040 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Software Version(s) | 0018,1020 | LO | 4.0 | ANAP | FIXED | 4.0 |
| >Device Serial Number | 0018,1000 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Institution Name | 0008,0080 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | ANAP | FIXED | - |
| >>Code Value | 0008,0100 | SH | 109102 | ANAP | FIXED | 109102 |
| >>Coding Scheme Designator | 0008,0102 | SH | DCM | ANAP | FIXED | DCM |

| | | | | | | |
|----------------|-----------|----|----------------------|------|-------|----------------------|
| >>Code Meaning | 0008,0104 | LO | Processing Equipment | ANAP | FIXED | Processing Equipment |
|----------------|-----------|----|----------------------|------|-------|----------------------|

2.1.2.4. MR Image Storage SOP Class

Table 45: 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 |
| Image | Contrast/Bolus Module | CONDITIONAL |
| Image | Extended Dicom and Private attributes | CONDITIONAL |

Table 46: Patient Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------|-----------|----|-------|-------------------|------------|---------|
| Referenced Patient Sequence | 0008,1120 | SQ | | ANAPCV | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | COPY | - |
| Patient's Name | 0010,0010 | PN | | ALWAYS | COPY | - |
| Patient ID | 0010,0020 | LO | | ALWAYS | COPY | - |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY, USER | - |
| Patient's Birth Time | 0010,0032 | TM | | ANAPCV | COPY, USER | - |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY, USER | - |
| Other Patient IDs | 0010,1000 | LO | | ANAPCV | COPY, USER | - |
| Other Patient Names | 0010,1001 | PN | | ANAPCV | COPY, USER | - |
| Ethnic Group | 0010,2160 | SH | | ANAPCV | COPY | - |
| Patient Comments | 0010,4000 | LT | | ANAPCV | COPY | - |
| Issuer of Patient ID | 0010,0021 | LO | | ANAPCV | COPY, USER | - |

Table 47: 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, USER | - |

| | | | | | | |
|--|-----------|----|--|--------|------------|---|
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY, USER | - |
| Referring Physician Identification Sequence | 0008,0096 | SQ | | ANAPCV | COPY | - |
| Study Description | 0008,1030 | LO | | ANAPCV | COPY, USER | - |
| Procedure Code Sequence | 0008,1032 | SQ | | ANAPCV | COPY | - |
| Physician(s) of Record | 0008,1048 | PN | | ANAPCV | COPY | - |
| Physician(s) of Record Identification Sequence | 0008,1049 | SQ | | ANAPCV | COPY | - |
| Name of Physician(s) Reading Study | 0008,1060 | PN | | ANAPCV | COPY | - |
| Physician(s) Reading Study Identification Sequence | 0008,1062 | SQ | | ANAPCV | COPY | - |
| Referenced Study Sequence | 0008,1110 | SQ | | ANAPCV | COPY | - |
| Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | - |
| Study ID | 0020,0010 | SH | | VNAP | AUTO | - |

Table 48: 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, USER | - |
| Patient's Size | 0010,1020 | DS | | ANAPCV | COPY, USER | - |
| Patient's Weight | 0010,1030 | DS | | ANAPCV | COPY, USER | - |
| Occupation | 0010,2180 | SH | | ANAPCV | COPY | - |
| Additional Patient History | 0010,21B0 | LT | | ANAPCV | COPY | - |

Table 49: 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 | COPY, USER | - |
| Performing Physician's Name | 0008,1050 | PN | | ANAPCV | COPY | - |
| Operators' Name | 0008,1070 | PN | | ANAPCV | COPY, USER | - |
| Operator Identification Sequence | 0008,1072 | SQ | | ANAPCV | COPY | - |
| Referenced Performed Procedure Step Sequence | 0008,1111 | SQ | | ANAPCV | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ALWAYS | COPY | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ALWAYS | 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 | | ALWAYS | AUTO | - |
| Laterality | 0020,0060 | CS | | ANAPCV | COPY | - |
| Smallest Pixel Value in Series | 0028,0108 | US /SS | | ANAPCV | COPY | - |
| Largest Pixel Value in Series | 0028,0109 | US /SS | | ANAPCV | COPY | - |
| Request Attributes Sequence | 0040,0275 | SQ | | ANAPCV | COPY | - |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAPCV | COPY | - |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAPCV | COPY | - |
| Performed Procedure Step Description | 0040,0254 | LO | | ANAPCV | COPY | - |
| Performed Protocol Code Sequence | 0040,0260 | SQ | | ANAPCV | COPY | - |
| Comments on the Performed Procedure Step | 0040,0280 | ST | | ANAPCV | COPY | - |

Table 50: 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 | COPY | - |

Table 51: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------|-----------|-----------|-------|-------------------|---------------|---------|
| Manufacturer | 0008,0070 | LO | | ALWAYS | COPY | - |
| Institution Name | 0008,0080 | LO | | ANAPCV | COPY, USER | - |
| Institution Address | 0008,0081 | ST | | ANAPCV | COPY, USER | - |
| Station Name | 0008,1010 | SH | | ALWAYS | COPY | - |
| Institutional Department Name | 0008,1040 | LO | | ANAPCV | COPY | - |
| Manufacturer's Model Name | 0008,1090 | LO | | ALWAYS | COPY | - |
| Device Serial Number | 0018,1000 | LO | | ANAPCV | COPY | - |
| Software Version(s) | 0018,1020 | LO | 4.0 | ALWAYS | COPY | 4.0 |
| 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 | | ANAPCV | COPY | - |

Table 52: 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 | COPY | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAPCV | COPY | - |

| | | | | | | |
|--|-----------|---------------|--|--------|---------------|---|
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAPCV | COPY | - |
| Derivation Description | 0008,2111 | ST | | ANAPCV | COPY | - |
| Source Image Sequence | 0008,2112 | SQ | | ANAPCV | COPY | - |
| Derivation Code Sequence | 0008,9215 | SQ | | ANAPCV | COPY | - |
| Instance Number | 0020,0013 | IS | | ALWAYS | AUTO, COPY | - |
| Patient Orientation | 0020,0020 | CS | | ANAPCV | COPY | - |
| Images in Acquisition | 0020,1002 | IS | | ANAPCV | COPY | - |
| Quality Control Image | 0028,0300 | CS | | ANAPCV | COPY | - |
| Burned In Annotation | 0028,0301 | CS | | ANAPCV | COPY | - |
| Lossy Image Compression | 0028,2110 | CS | | ANAPCV | COPY | - |
| Lossy Image Compression Ratio | 0028,2112 | DS | | ANAPCV | COPY | - |
| Icon Image Sequence | 0088,0200 | SQ | | ANAPCV | COPY | - |
| >Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| >Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | - |
| >Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| >Rows | 0028,0010 | US | | ALWAYS | COPY | - |
| >Columns | 0028,0011 | US | | ALWAYS | COPY | - |
| >Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| >Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |
| >Bits Stored | 0028,0101 | US | | ALWAYS | COPY | - |
| >High Bit | 0028,0102 | US | | ALWAYS | COPY | - |
| >Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| >Smallest Image Pixel Value | 0028,0106 | US /SS | | ANAPCV | COPY | - |
| >Largest Image Pixel Value | 0028,0107 | US /SS | | ANAPCV | COPY | - |
| >Red Palette Color Lookup Table Descriptor | 0028,1101 | US /SS | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Descriptor | 0028,1102 | US /SS | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Descriptor | 0028,1103 | US /SS | | ANAP | COPY | - |
| >Red Palette Color Lookup Table Data | 0028,1201 | O W | | ANAP | COPY | - |
| >Green Palette Color Lookup Table Data | 0028,1202 | O W | | ANAP | COPY | - |
| >Blue Palette Color Lookup Table Data | 0028,1203 | O W | | ANAP | COPY | - |
| >Pixel Data | 7FE0,0010 | O W/ OB | | ANAP | COPY | - |
| Presentation LUT Shape | 2050,0020 | CS | | ANAPCV | COPY | - |

Table 53: Image Plane Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-----------------------------|-----------|----|-------|-------------------|--------|---------|
| Slice Thickness | 0018,0050 | DS | | VNAP | COPY | - |
| Image Position (Patient) | 0020,0032 | DS | | ALWAYS | COPY | - |
| Image Orientation (Patient) | 0020,0037 | DS | | ALWAYS | COPY | - |
| Slice Location | 0020,1041 | DS | | ANAPCV | COPY | - |
| Pixel Spacing | 0028,0030 | DS | | ALWAYS | COPY | - |

Table 54: Image Pixel Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---|-----------|---------|-------|-------------------|------------|---------|
| Planar Configuration | 0028,0006 | US | | ANAP | COPY | - |
| Rows | 0028,0010 | US | | ALWAYS | AUTO, COPY | - |
| Columns | 0028,0011 | US | | ALWAYS | AUTO, COPY | - |
| Pixel Aspect Ratio | 0028,0034 | IS | | ANAP | COPY | - |
| Pixel Representation | 0028,0103 | US | | ALWAYS | COPY | - |
| Smallest Image Pixel Value | 0028,0106 | US /SS | | ANAPCV | COPY | - |
| Largest Image Pixel Value | 0028,0107 | US /SS | | ANAPCV | COPY | - |
| Red Palette Color Lookup Table Descriptor | 0028,1101 | US /SS | | ANAP | COPY | - |
| Green Palette Color Lookup Table Descriptor | 0028,1102 | US /SS | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Descriptor | 0028,1103 | US /SS | | ANAP | COPY | - |
| Red Palette Color Lookup Table Data | 0028,1201 | O W | | ANAP | COPY | - |
| Green Palette Color Lookup Table Data | 0028,1202 | O W | | ANAP | COPY | - |
| Blue Palette Color Lookup Table Data | 0028,1203 | O W | | ANAP | COPY | - |
| Pixel Data | 7FE0,0010 | O W/ OB | | ALWAYS | COPY | - |

Table 55: MR Image Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|--------------------------------|-----------|----|-------|-------------------|--------|---------|
| Image Type | 0008,0008 | CS | | ALWAYS | AUTO | - |
| 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 | | ANAP | COPY | - |
| Sequence Name | 0018,0024 | SH | | ANAPCV | COPY | - |
| Angio Flag | 0018,0025 | CS | | ANAPCV | COPY | - |
| Repetition Time | 0018,0080 | DS | | ANAPCV | COPY | - |
| Echo Time | 0018,0081 | DS | | ANAP | COPY | - |
| Inversion Time | 0018,0082 | DS | | ANAPCV | COPY | - |
| Number of Averages | 0018,0083 | DS | | ANAPCV | COPY | - |
| Imaging Frequency | 0018,0084 | DS | | ANAPCV | COPY | - |
| Imaged Nucleus | 0018,0085 | SH | | ANAPCV | COPY | - |
| Echo Number(s) | 0018,0086 | IS | | ANAPCV | COPY | - |
| Magnetic Field Strength | 0018,0087 | DS | | ANAPCV | COPY | - |
| Spacing Between Slices | 0018,0088 | DS | | ANAPCV | COPY | - |
| Number of Phase Encoding Steps | 0018,0089 | IS | | ANAPCV | COPY | - |
| Echo Train Length | 0018,0091 | IS | | VNAP | COPY | - |
| Percent Sampling | 0018,0093 | DS | | ANAPCV | COPY | - |

| | | | | | | |
|-----------------------------------|-----------|----|-------------|--------|------|---|
| Percent Phase Field of View | 0018,0094 | DS | | ANAPCV | COPY | - |
| Pixel Bandwidth | 0018,0095 | DS | | ANAPCV | COPY | - |
| Trigger Time | 0018,1060 | DS | | ANAPCV | COPY | - |
| Nominal Interval | 0018,1062 | IS | | ANAPCV | COPY | - |
| Beat Rejection Flag | 0018,1080 | CS | | ANAPCV | COPY | - |
| 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 | - |
| PVC Rejection | 0018,1085 | LO | | ANAPCV | COPY | - |
| Skip Beats | 0018,1086 | IS | | ANAPCV | COPY | - |
| Heart Rate | 0018,1088 | IS | | ANAPCV | COPY | - |
| Cardiac Number of Images | 0018,1090 | IS | | ANAPCV | COPY | - |
| Trigger Window | 0018,1094 | IS | | ANAPCV | COPY | - |
| Reconstruction Diameter | 0018,1100 | DS | | ANAPCV | COPY | - |
| Receive Coil Name | 0018,1250 | SH | | ANAPCV | COPY | - |
| Transmit Coil Name | 0018,1251 | SH | | ANAPCV | COPY | - |
| Acquisition Matrix | 0018,1310 | US | | ANAPCV | COPY | - |
| In-plane Phase Encoding Direction | 0018,1312 | CS | | ANAPCV | COPY | - |
| Flip Angle | 0018,1314 | DS | | ANAPCV | COPY | - |
| SAR | 0018,1316 | DS | | ANAPCV | COPY | - |
| dB/dt | 0018,1318 | DS | | ANAPCV | COPY | - |
| Temporal Position Identifier | 0020,0100 | IS | | ANAPCV | COPY | - |
| Number of Temporal Positions | 0020,0105 | IS | | ANAPCV | COPY | - |
| Temporal Resolution | 0020,0110 | DS | | ANAPCV | COPY | - |
| Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | - |
| Photometric Interpretation | 0028,0004 | CS | MONOCHROME2 | ALWAYS | COPY | - |
| Bits Allocated | 0028,0100 | US | | ALWAYS | COPY | - |

Table 56: 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 | | ANAP | AUTO | - |

Table 57: VOI LUT Module

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

Table 58: 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 | | ALWAYS | AUTO | - |
| Instance Creation Time | 0008,0013 | TM | | ALWAYS | 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 | | ANAP | AUTO | - |
| >Manufacturer | 0008,0070 | LO | Philips | ANAP | FIXED | PHILIPS. |
| >Institution Address | 0008,0081 | ST | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Station Name | 0008,1010 | SH | IntelliSpace Portal | ANAP | CONFIG | IntelliSpace Portal. |
| >Institutional Department Name | 0008,1040 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Software Version(s) | 0018,1020 | LO | 4.0 | ANAP | FIXED | 4.0 |
| >Device Serial Number | 0018,1000 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Institution Name | 0008,0080 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Manufacturer's Model Name | 0008,1090 | LO | IntelliSpace Portal | ANAP | FIXED | IntelliSpace Portal. |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | ANAP | FIXED | - |
| >>Code Value | 0008,0100 | SH | 109102 | ANAP | FIXED | 109102 |
| >>Coding Scheme Designator | 0008,0102 | SH | DCM | ANAP | FIXED | DCM |
| >>Code Meaning | 0008,0104 | LO | Processing Equipment | ANAP | FIXED | Processing Equipment |

Table 59: Contrast/Bolus Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|--|-----------|----|-------|-------------------|--------|---------|
| Contrast/Bolus Agent | 0018,0010 | LO | | VNAP | COPY | - |
| Contrast/Bolus Agent Sequence | 0018,0012 | SQ | | ANAPCV | COPY | - |
| Contrast/Bolus Administration Route Sequence | 0018,0014 | SQ | | ANAPCV | COPY | - |
| >Additional Drug Sequence | 0018,002A | SQ | | ANAP | COPY | - |
| Contrast/Bolus Route | 0018,1040 | LO | | ANAPCV | COPY | - |
| Contrast/Bolus Volume | 0018,1041 | DS | | ANAPCV | COPY | - |
| Contrast/Bolus Start Time | 0018,1042 | TM | | ANAPCV | COPY | - |
| Contrast/Bolus Stop Time | 0018,1043 | TM | | ANAPCV | COPY | - |
| Contrast/Bolus Total Dose | 0018,1044 | DS | | ANAPCV | COPY | - |
| Contrast Flow Rate | 0018,1046 | DS | | ANAPCV | COPY | - |
| Contrast Flow Duration | 0018,1047 | DS | | ANAPCV | COPY | - |
| Contrast/Bolus Ingredient | 0018,1048 | CS | | ANAPCV | COPY | - |

| | | | | | | |
|---|-----------|----|--|--------|------|---|
| Contrast/Bolus Ingredient Concentration | 0018,1049 | DS | | ANAPCV | COPY | - |
|---|-----------|----|--|--------|------|---|

Table 60: Extended DICOM and private attributes for MR Image Storage SOP Class Instances

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------|-----------|---------------|-------|-------------------|--------|---------|
| Rescale Intercept | 0028,1052 | DS | | ALWAYS | COPY | - |
| Rescale Slope | 0028,1053 | DS | | ALWAYS | COPY | - |
| Curve Dimensions | 50xx,0005 | US | | ALWAYS | AUTO | - |
| Number of Points | 50xx,0010 | US | | ALWAYS | AUTO | - |
| Type of Data | 50xx,0020 | CS | | ALWAYS | AUTO | - |
| Data Value Representation | 50xx,0103 | US | | ALWAYS | AUTO | - |
| Curve Data | 50xx,3000 | OB /O W | | ALWAYS | AUTO | - |
| Curve Description | 50xx,0022 | LO | | ANAPCV | AUTO | - |
| Axis Units | 50xx,0030 | SH | | ANAPCV | AUTO | - |
| Axis Labels | 50xx,0040 | SH | | ANAPCV | AUTO | - |
| Minimum Coordinate Value | 50xx,0104 | US | | ANAPCV | AUTO | - |
| Maximum Coordinate Value | 50xx,0105 | US | | ANAPCV | AUTO | - |
| Curve Range | 50xx,0106 | SH | | ANAPCV | AUTO | - |
| Curve Data Descriptor | 50xx,0110 | US | | ANAP | AUTO | - |
| Coordinate Start Value | 50xx,0112 | US | | ANAP | AUTO | - |
| Coordinate Step Value | 50xx,0114 | US | | ANAP | AUTO | - |
| Curve Label | 50xx,2500 | LO | | ANAPCV | AUTO | - |
| Referenced Overlay Sequence | 50xx,2600 | SQ | | ANAPCV | AUTO | - |
| >Referenced SOP Class UID | 0008,1150 | UI | | ANAP | AUTO | - |
| >Referenced SOP Instance UID | 0008,1155 | UI | | ANAP | AUTO | - |
| >Referenced Overlay Group | 50xx,2610 | US | | ANAP | AUTO | - |