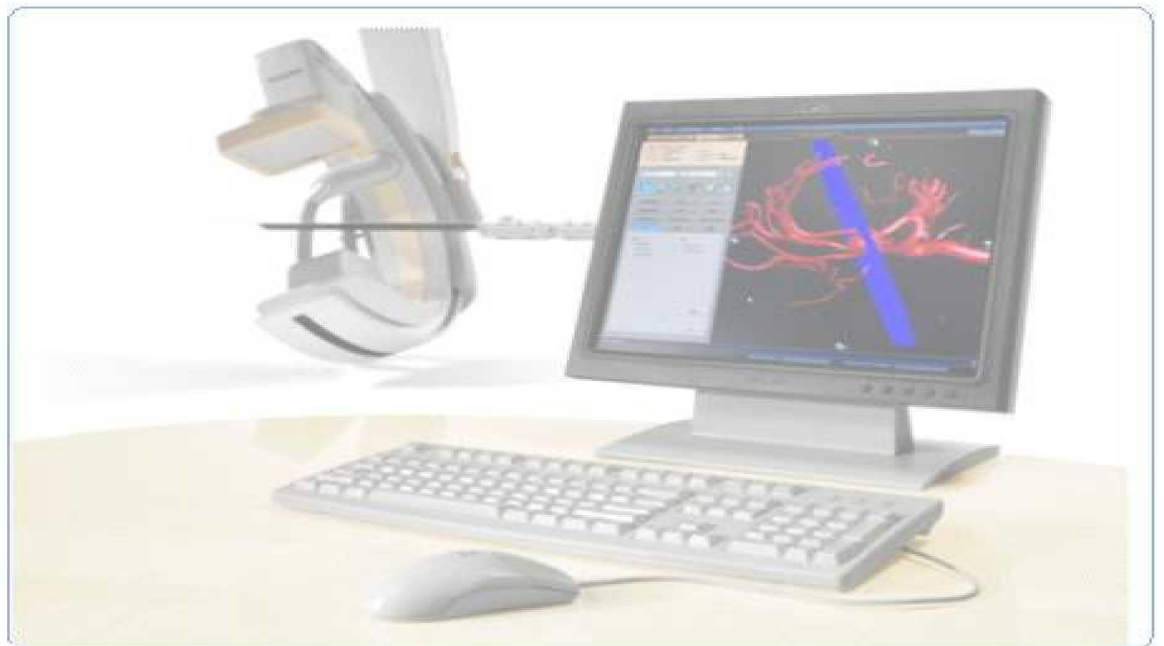


DICOM Conformance Statement

Application Annex:

3D Roadmap R1.2

On Interventional Workspot R1.5



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1. Introduction

This DICOM Conformance Statement annex is applicable to the 3D Roadmap R1.2 Application, later referred to as 3D Roadmap Application. In general the 3D Roadmap Application allows for viewing and analyzing XA images, as well as overlaying XA images on three-dimensional volumes.

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 | 19-Sep-2018 | Authorized | Final Version for 3D Roadmap R1.2 on Interventional Workspot R1.5 |

1.2. Terminology

| | |
|-------|--|
| DICOM | Digital Imaging and Communications in Medicine |
| IOD | Information Object Definition |
| UID | Unique Identifier |
| VR | Value Representation |
| XA | X-Ray Angiography |

2. Data Specifications

2.1. Supported IOD's

This section specifies each IOD accepted and / or created by 3D Roadmap Application on Interventional Workspot 1.5

ACCEPTED The applicable IOD is accepted for storage in the repository of the hosting platform and supported for import of 3D Roadmap Application for viewing and analysis.

CREATED The 3D Roadmap Application 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 |
| Raw Data Storage SOP Class | 1.2.840.10008.5.1.4.1.1.66 | No | Yes |
| X-Ray Angiographic Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.12.1 | Yes | Yes |
| Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7 | No | Yes |
| Multiframe True Color Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.4 | No | Yes |

2.1.1. Acceptance Criteria

This section specifies the acceptance criteria applied by 3D Roadmap Application 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 |
| X-Ray Angiographic Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.12.1 | Implicit VR Little Endian | 1.2.840.10008.1.2 |
| | | Explicit VR Big Endian | 1.2.840.10008.1.2.2 |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 |
| | | JPEG 2000 Image Compression | 1.2.840.10008.1.2.4.91 |
| | | JPEG 2000 Image Compression (Lossless Only) | 1.2.840.10008.1.2.4.90 |
| | | JPEG Baseline (Process 1) | 1.2.840.10008.1.2.4.50 |
| | | JPEG Extended (Process 2 & 4) | 1.2.840.10008.1.2.4.51 |
| | | JPEG Lossless, Non-Hierarchical, FOP (Process 14) | 1.2.840.10008.1.2.4.70 |
| RLE Lossless | 1.2.840.10008.1.2.5 | | |

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 |

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. List of created SOP Classes

Table 6: List of created SOP Classes

| SOP Class Name | SOP Class UID |
|---|------------------------------|
| X-Ray Angiographic Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.12.1 |
| Raw Data Storage SOP Class | 1.2.840.10008.5.1.4.1.1.66 |
| Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7 |
| Multiframe True Color Secondary Capture Image Storage SOP Class | 1.2.840.10008.5.1.4.1.1.7.4 |

2.1.2.2. X-Ray Angiographic Image Storage SOP Class

Table 7: IOD of Created X-Ray Angiographic Image Storage Instances

| Information Entity | Module | Presence Of Module |
|--------------------|--------------------------|--------------------|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Series | General Series Module | ALWAYS |
| Equipment | General Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| | Image Pixel Module | ALWAYS |
| | Cine Module | ALWAYS |
| | Multi-Frame Module | ALWAYS |
| | Display Shutter Module | ALWAYS |
| | X-Ray Image Module | ALWAYS |
| | X-Ray Acquisition Module | ALWAYS |
| | X-Ray Table Module | ALWAYS |
| | XA Positioner Module | ALWAYS |
| | DX Detector Module | ALWAYS |
| | VOI LUT Module | ALWAYS |
| SOP Common Module | ALWAYS | |

Table 8: 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 | |

Table 9: 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 Instance UID | 0020,000D | UI | | ALWAYS | AUTO | |
| Study ID | 0020,0010 | SH | | VNAP | COPY | |

Table 10: General Series Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------------|-----------|----|-------|-------------------|--------|---------|
| Series Date | 0008,0021 | DA | | ANAP | COPY | |
| Series Time | 0008,0031 | TM | | ANAP | COPY | |
| Modality | 0008,0060 | CS | | ALWAYS | COPY | |
| Series Description | 0008,103E | LO | | ANAP | COPY | |
| Performing Physician's Name | 0008,1050 | PN | | ANAP | COPY | |
| Related Series Sequence | 0008,1250 | SQ | | ANAP | COPY | |
| >Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | |
| >Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | VNAP | COPY | |
| Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | |
| Series Number | 0020,0011 | IS | | VNAP | COPY | |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | COPY | |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | COPY | |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | COPY | |

Table 11: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---------------------------|-----------|----|-------------------------|-------------------|--------|---------|
| Manufacturer | 0008,0070 | LO | Philips | ALWAYS | FIXED | |
| Institution Name | 0008,0080 | LO | | VNAP | COPY | |
| Manufacturer's Model Name | 0008,1090 | LO | Interventional Workspot | ALWAYS | CONFIG | |

| | | | | | | |
|----------------------|-----------|----|-------|--------|--------|---|
| Device Serial Number | 0018,1000 | | | ANAP | CONFIG | |
| Software Versions | 0018,1020 | LO | 1.5.x | ALWAYS | CONFIG | where "x" is the detailed application SW version. |
| Institution Name | 0008,0080 | LO | | VNAP | COPY | |

Table 12: General Image Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-----------------------------|-----------|-------|-------|-------------------|--------|---------|
| Image Type | 0008,0008 | CS | | ANAP | COPY | |
| Acquisition Date | 0008,0022 | DA | | ANAP | COPY | |
| Content Date | 0008,0023 | DA | | VNAP | COPY | |
| Acquisition Time | 0008,0032 | TM | | ANAP | COPY | |
| Content Time | 0008,0033 | TM | | VNAP | COPY | |
| Instance Number | 0020,0013 | IS | | VNAP | COPY | |
| Patient Orientation | 0020,0020 | CS | | ANAP | COPY | |
| Lossy Image Compression | 0028,2110 | CS | | ANAP | COPY | |
| Icon Image Sequence | 0088,0200 | SQ | | ANAP | COPY | |
| >Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | |
| >Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | |
| >Rows | 0028,0010 | US | | ALWAYS | COPY | |
| >Columns | 0028,0011 | US | | ALWAYS | 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 | |
| >Pixel Data | 7FE0,0010 | OW/OB | | ANAP | COPY | |

Table 13: Image Pixel Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------------|-----------|-------|-------|-------------------|--------|---------|
| Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | |
| Rows | 0028,0010 | US | | ALWAYS | COPY | |
| Columns | 0028,0011 | US | | ALWAYS | 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 | |
| Pixel Data | 7FE0,0010 | OB/OW | | VNAP | COPY | |

Table 14: Cine Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------|-----------|----|-------|-------------------|--------|---------|
| Cine Rate | 0018,0040 | IS | | ANAP | | |
| Frame Time | 0018,1063 | DS | | ALWAYS | | |

Table 15: Multi-Frame Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------|-----------|----|-------|-------------------|--------|---------|
| Number of Frames | 0028,0008 | IS | | ALWAYS | | |
| Frame Increment Pointer | 0028,0009 | AT | | ALWAYS | | |

Table 16: Display Shutter Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------|-----------|----|-------|-------------------|--------|---------|
| Shutter Shape | 0018,1600 | CS | | ALWAYS | COPY | |
| Shutter Left Vertical Edge | 0018,1602 | IS | | ALWAYS | COPY | |
| Shutter Right Vertical Edge | 0018,1604 | IS | | ALWAYS | COPY | |
| Shutter Upper Horizontal Edge | 0018,1606 | IS | | ALWAYS | COPY | |
| Shutter Lower Horizontal Edge | 0018,1608 | IS | | ALWAYS | COPY | |

Table 17: X-Ray Image Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------|-----------|----|-------|-------------------|--------|---------|
| Image Type | 0008,0008 | CS | | ALWAYS | COPY | |
| Samples per Pixel | 0028,0002 | US | | ALWAYS | COPY | |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | COPY | |
| Frame Increment Pointer | 0028,0009 | AT | | ALWAYS | 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 | |
| Pixel Intensity Relationship | 0028,1040 | CS | | ALWAYS | COPY | |
| Lossy Image Compression | 0028,2110 | CS | | ALWAYS | COPY | |

Table 18: X-Ray Acquisition Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------|-----------|----|-------|-------------------|--------|---------|
| KVP | 0018,0060 | DS | | VNAP | COPY | |
| Exposure Time | 0018,1150 | IS | | VNAP | COPY | |
| Radiation Setting | 0018,1155 | CS | | ALWAYS | COPY | |
| Imager Pixel Spacing | 0018,1164 | DS | | ANAP | COPY | |
| Pixel Spacing | 0028,0030 | DS | | ALWAYS | COPY | |

Table 19: X-Ray Table Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------|-----------|----|-------|-------------------|--------|---------|
| Table Motion | 0018,1134 | DS | | VNAP | COPY | |
| Table Angle | 0018,1138 | DS | | ANAP | COPY | |

Table 20: XA Positioner Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|--------------------------------------|-----------|----|-------|-------------------|--------|---------|
| Distance Source to Patient | 0018,1111 | DS | | ANAP | COPY | |
| Distance Source to Patient | 0018,1111 | DS | | ANAP | COPY | |
| Positioner Motion | 0018,1500 | CS | | VNAP | COPY | |
| Positioner Primary Angle | 0018,1510 | DS | | VNAP | COPY | |
| Positioner Secondary Angle | 0018,1511 | DS | | VNAP | COPY | |
| Positioner Primary Angle Increment | 0018,1520 | DS | | VNAP | COPY | |
| Positioner Secondary Angle Increment | 0018,1521 | DS | | VNAP | COPY | |

Table 21: DX Detector Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------|-----------|----|-------|-------------------|--------|---------|
| Imager Pixel Spacing | 0018,1164 | DS | | ALWAYS | COPY | |
| Pixel Spacing | 0028,0030 | DS | | ALWAYS | COPY | |

Table 22: VOI LUT Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------|-----------|----|-------|-------------------|--------|---------|
| Window Center | 0028,1050 | DS | | ALWAYS | COPY | |
| Window Width | 0028,1051 | DS | | ALWAYS | COPY | |

Table 23: SOP Common Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------|-----------|----|------------------------------|-------------------|--------|---------|
| Instance Creation Date | 0008,0012 | DA | | ANAP | COPY | |
| Instance Creation Time | 0008,0013 | TM | | ANAP | COPY | |
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.12.1 | ALWAYS | COPY | |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | AUTO | |
| Instance Number | 0020,0013 | IS | | ANAP | COPY | |

2.1.2.3. Raw data Storage SOP class

Table 24: IOD of Created Raw Data Storage SOP Class Instances

| Information Entity | Module | Presence Of Module |
|--------------------|----------------------------|--------------------|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Series | General Series Module | ALWAYS |
| Frame of Reference | Frame of Reference | OPTIONAL |
| Equipment | General Equipment Module | ALWAYS |
| Image | Acquisition Context Module | ALWAYS |
| | Raw Data Module | ALWAYS |
| | SOP Common Module | ALWAYS |

Table 25 : Patient Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Patient's Name | 0010,0010 | PN | | ALWAYS | AUTO | |
| Patient ID | 0010,0020 | LO | | ALWAYS | COPY | copied from source data |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | copied from source data |
| Patient's Sex | 0010,0040 | CS | | ALWAYS | COPY | copied from source data |

Table 26 : General Study Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------------|-----------|----|-------|-------------------|------------|-------------------------|
| Study Date | 0008,0020 | DA | | ALWAYS | COPY | copied from source data |
| Study Time | 0008,0030 | TM | | ALWAYS | COPY | copied from source data |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | copied from source data |
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | copied from source data |
| Study ID | 0020,0010 | SH | | ALWAYS | COPY | copied from source data |
| Accession Number | 0008,0050 | SH | | EMPTY | COPY, USER | copied from source data |

Table 27 : General Series Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Series Date | 0008,0021 | DA | | ANAP | COPY | copied from source data |
| Series Time | 0008,0031 | TM | | ANAP | COPY | copied from source data |
| Modality | 0008,0060 | CS | | ALWAYS | COPY | copied from source data |
| Series Description | 0008,103E | LO | | ANAP | | |
| Performing Physicians' name | 0008,1050 | PN | | ANAP | | |
| Related Series Sequence | 0008,1250 | SQ | | ANAP | | |
| >Study Instance UID | 0020,000D | UI | | ALWAYS | | |
| >Series Instance UID | 0020,000E | UI | | ALWAYS | COPY | copied from source data |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | VNAP | | |
| Series Instance UID | 0020,000E | UI | | ALWAYS | | |
| Series Number | 0020,0011 | IS | | VNAP | COPY | copied from source data |
| Laterality | 0020,0060 | CS | | ANAP | | |
| Performed Procedure Step Start Date | 0040,0244 | DA | | ANAP | | |
| Performed Procedure Step Start Time | 0040,0245 | TM | | ANAP | | |
| Performed Procedure Step ID | 0040,0253 | SH | | ANAP | | |

Table 28: Frame of Reference Module

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

Table 29: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------|-----|----|-------|-------------------|--------|---------|
|----------------|-----|----|-------|-------------------|--------|---------|

| | | | | | | |
|---------------------------|-----------|----|-------------------------|------|-------|---|
| Manufacturer | 0008,0070 | LO | Philips | VNAP | FIXED | |
| Institution Name | 0008,0080 | LO | | ANAP | USER | |
| Manufacturer's Model Name | 0008,1090 | LO | Interventional Workspot | ANAP | FIXED | |
| Device Serial Number | 0018,1000 | LO | | ANAP | COPY | copied from source data |
| Software Versions | 0018,1020 | LO | 1.5.x | ANAP | COPY | copied from source data where "x" is the detailed application SW version. |

Table 30: Acquisition Context Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Acquisition Context Sequence | 0040,0555 | SQ | | VNAP | COPY | copied from source data |

Table 31: Raw Data Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Content Date | 0008,0023 | DA | | ALWAYS | COPY | copied from source data |
| Content Time | 0008,0033 | TM | | ALWAYS | COPY | copied from source data |
| Creator Version UID | 0008,9123 | UI | | ALWAYS | COPY | copied from source data |
| Instance Number | 0020,0013 | IS | | ANAP | COPY | copied from source data |

Table 32: SOP Common Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------------------|-----------|----|----------------------------|-------------------|--------|-------------------------|
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.66 | ALWAYS | COPY | copied from source data |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | COPY | copied from source data |
| Original Specialized SOP Class UID | 0008,001B | UI | | VNAP | COPY | copied from source data |
| Instance Creation Date | 0008,0012 | DA | | VNAP | COPY | copied from source data |
| Instance Creation Time | 0008,0013 | TM | | VNAP | COPY | copied from source data |
| Instance Number | 0020,0013 | IS | | VNAP | | |

2.1.2.4. Secondary Capture Image Storage SOP class

Table 33: 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 |
| Series | General Series Module | ALWAYS |
| Equipment | General Equipment Module | CONDITIONAL |
| | SC Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| | Image Pixel Module | ALWAYS |
| | SOP Common Module | ALWAYS |

Table 34: Patient Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Patient's Name | 0010,0010 | PN | | ALWAYS | COPY | copied from source data |
| Patient ID | 0010,0020 | LO | | ALWAYS | COPY | copied from source data |
| Patient's Birth Date | 0010,0030 | DA | | ALWAYS | COPY | copied from source data |
| Patient's Sex | 0010,0040 | CS | | ALWAYS | COPY | copied from source data |

Table 35: General Study Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Study Date | 0008,0020 | DA | | ALWAYS | COPY | copied from source data |
| Study Time | 0008,0030 | TM | | ALWAYS | COPY | copied from source data |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | copied from source data |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | copied from source data |
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | copied from source data |
| Study ID | 0020,0010 | SH | | ALWAYS | COPY | copied from source data |

Table 36: General Series Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Series Date | 0008,0021 | DA | | ALWAYS | COPY | copied from source data |
| Series Time | 0008,0031 | TM | | ALWAYS | COPY | copied from source data |
| Modality | 0008,0060 | CS | | ALWAYS | COPY | copied from source data |
| Series Instance UID | 0020,000E | UI | | ALWAYS | COPY | copied from source data |
| Series Number | 0020,0011 | IS | | VNAP | COPY | copied from source data |
| Related Series Sequence | 0008,1250 | SQ | | VNAP | AUTO | |
| >Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | |
| >Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | EMPTY | AUTO | |

Table 37: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---------------------------|-----------|----|-------------------------|-------------------|--------|---|
| Manufacturer | 0008,0070 | LO | Philips | ALWAYS | FIXED | |
| Institution Name | 0008,0080 | LO | | VNAP | COPY | copied from source data |
| Manufacturer's Model Name | 0008,1090 | LO | Interventional Workspot | ALWAYS | CONFIG | |
| Device Serial Number | 0018,1000 | | | ANAP | | |
| Software Versions | 0018,1020 | LO | 1.5.x | ALWAYS | CONFIG | where "x" is the detailed application SW version. |

Table 38 : SC Equipment Module

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

Table 39: General Image Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---------------------|-----------|----|-------|-------------------|--------|---------|
| Instance Number | 0020,0013 | IS | | ALWAYS | AUTO | |
| Patient Orientation | 0020,0020 | CS | | VNAP | AUTO | |

Table 40: Image Pixel Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------------|-----------|-------|-------|-------------------|--------|-------------------------|
| Samples per Pixel | 0028,0002 | US | | ALWAYS | FIXED | |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | FIXED | |
| Planar Configuration | 0028,0006 | US | | ALWAYS | FIXED | |
| Rows | 0028,0010 | US | | ALWAYS | COPY | copied from source data |
| Columns | 0028,0011 | US | | ALWAYS | COPY | copied from source data |
| Bits Allocated | 0028,0100 | US | 8 | ALWAYS | FIXED | |
| Bits Stored | 0028,0101 | US | 8 | ALWAYS | FIXED | |
| High Bit | 0028,0102 | US | 7 | ALWAYS | FIXED | |
| Pixel Representation | 0028,0103 | US | 0000 | ALWAYS | COPY | copied from source data |
| Pixel Data | 7FE0,0010 | OW/OB | | ALWAYS | COPY | copied from source data |

Table 41: SOP Common Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------|-----------|----|---------------------------|-------------------|--------|-------------------------|
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.7 | ALWAYS | FIXED | |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | COPY | copied from source data |
| Instance Creation Date | 0008,0012 | DA | | ANAP | COPY | copied from source data |
| Instance Creation Time | 0008,0013 | TM | | ANAP | COPY | copied from source data |
| Instance Number | 0020,0013 | IS | | ANAP | COPY | copied from source data |

2.1.2.5. Multi-frame True color Secondary Capture Image Storage SOP class

Table 42: IOD of Created Multiframe True Color Secondary Capture Image Storage SOP Class Instances

| Information Entity | Module | Presence Of Module |
|--------------------|--------------------------------------|--------------------|
| Patient | Patient Module | ALWAYS |
| Study | General Study Module | ALWAYS |
| Series | General Series Module | ALWAYS |
| Equipment | General Equipment Module | CONDITIONAL |
| | SC Equipment Module | ALWAYS |
| Image | General Image Module | ALWAYS |
| | Image Pixel Module | ALWAYS |
| | Cine Module | CONDITIONAL |
| | Multi-Frame Module | ALWAYS |
| | Multi-Frame Functional Groups Module | OPTIONAL |
| | SC Multi-frame Image Module | ALWAYS |
| | SOP Common Module | ALWAYS |

Table 43: Patient Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Patient's Name | 0010,0010 | PN | | VNAP | COPY | copied from source data |
| Patient ID | 0010,0020 | LO | | VNAP | COPY | copied from source data |
| Patient's Birth Date | 0010,0030 | DA | | VNAP | COPY | copied from source data |
| Patient's Sex | 0010,0040 | CS | | VNAP | COPY | copied from source data |

Table 44: General Study Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Study Date | 0008,0020 | DA | | VNAP | COPY | copied from source data |
| Study Time | 0008,0030 | TM | | VNAP | COPY | copied from source data |
| Accession Number | 0008,0050 | SH | | VNAP | COPY | copied from source data |
| Referring Physician's Name | 0008,0090 | PN | | VNAP | COPY | copied from source data |
| Study Instance UID | 0020,000D | UI | | ALWAYS | COPY | copied from source data |
| Study ID | 0020,0010 | SH | | VNAP | COPY | copied from source data |

Table 45: General Series Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Series Date | 0008,0021 | DA | | ANAP | COPY | copied from source data |
| Series Time | 0008,0031 | TM | | ANAP | COPY | copied from source data |
| Modality | 0008,0060 | CS | | ALWAYS | COPY | copied from source data |
| Series Instance UID | 0020,000E | UI | | ALWAYS | COPY | copied from source data |
| Series Number | 0020,0011 | IS | | ANAP | COPY | copied from source data |
| Related Series Sequence | 0008,1250 | SQ | | ANAP | AUTO | |
| >Study Instance UID | 0020,000D | UI | | ALWAYS | AUTO | |
| >Series Instance UID | 0020,000E | UI | | ALWAYS | AUTO | |
| >Purpose of Reference Code Sequence | 0040,A170 | SQ | | VNAP | AUTO | |

Table 46: General Equipment Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|---------------------------|-----------|----|-------------------------|-------------------|--------|---|
| Manufacturer | 0008,0070 | LO | Philips | ALWAYS | FIXED | |
| Institution Name | 0008,0080 | LO | | VNAP | COPY | copied from source data |
| Manufacturer's Model Name | 0008,1090 | LO | Interventional Workspot | ALWAYS | CONFIG | |
| Device Serial Number | 0018,1000 | | | ANAP | AUTO | |
| Software Versions | 0018,1020 | LO | 1.5.x | ALWAYS | CONFIG | Where "x" is the detailed application SW version. |

Table 47 : SC Equipment Module

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

Table 48: General Image Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------|-----------|----|-------|-------------------|--------|---------|
| Instance Number | 0020,0013 | IS | | VNAP | AUTO | |
| Patient Orientation | 0020,0020 | CS | | VNAP | FIXED | |
| Burned in Annotation | 0028,0301 | CS | | ANAP | AUTO | |

Table 49: Image Pixel Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------------------|-----------|-------|-------|-------------------|--------|-------------------------|
| Samples per Pixel | 0028,0002 | US | | ALWAYS | FIXED | |
| Photometric Interpretation | 0028,0004 | CS | | ALWAYS | FIXED | |
| Planar Configuration | 0028,0006 | US | | ALWAYS | FIXED | |
| Rows | 0028,0010 | US | | ALWAYS | COPY | copied from source data |
| Columns | 0028,0011 | US | | ALWAYS | COPY | copied from source data |
| Bits Allocated | 0028,0100 | US | 8 | ALWAYS | FIXED | |
| Bits Stored | 0028,0101 | US | 8 | ALWAYS | FIXED | |
| High Bit | 0028,0102 | US | 7 | ALWAYS | FIXED | |
| Pixel Representation | 0028,0103 | US | 0000 | ALWAYS | COPY | copied from source data |
| Pixel Data | 7FE0,0010 | OW/OB | | ALWAYS | COPY | copied from source data |

Table 50: Cine Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|----------------|-----------|----|-------|-------------------|--------|-------------------------|
| Frame Time | 0018,1063 | DS | | ALWAYS | COPY | copied from source data |

Table 51: Multi-Frame Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Number of Frames | 0028,0008 | DS | | ALWAYS | COPY | copied from source data |
| Frame Increment Pointer | 0028,0009 | AT | | ALWAYS | COPY | copied from source data |

Table 52: Multi-Frame Functional Groups Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Instance Number | 0020,0013 | IS | | ALWAYS | COPY | copied from source data |
| Number of Frames | 0028,0008 | IS | | ALWAYS | COPY | copied from source data |

Table 53: SC Multi-Frame Image Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|-------------------------|-----------|----|-------|-------------------|--------|-------------------------|
| Frame Increment Pointer | 0028,0009 | AT | | ALWAYS | COPY | copied from source data |
| Burned In Annotation | 0028,0301 | CS | | ALWAYS | COPY | copied from source data |

Table 54: SOP Common Module

| Attribute Name | Tag | VR | Value | Presence of Value | Source | Comment |
|------------------------|-----------|----|-----------------------------|-------------------|--------|-------------------------|
| SOP Class UID | 0008,0016 | UI | 1.2.840.10008.5.1.4.1.1.7.4 | ALWAYS | FIXED | |
| SOP Instance UID | 0008,0018 | UI | | ALWAYS | COPY | copied from source data |
| Instance Creation Date | 0008,0012 | DA | | ANAP | COPY | copied from source data |
| Instance Creation Time | 0008,0013 | TM | | ANAP | COPY | copied from source data |
| Instance Number | 0020,0013 | IS | | ANAP | COPY | copied from source data |