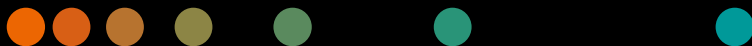
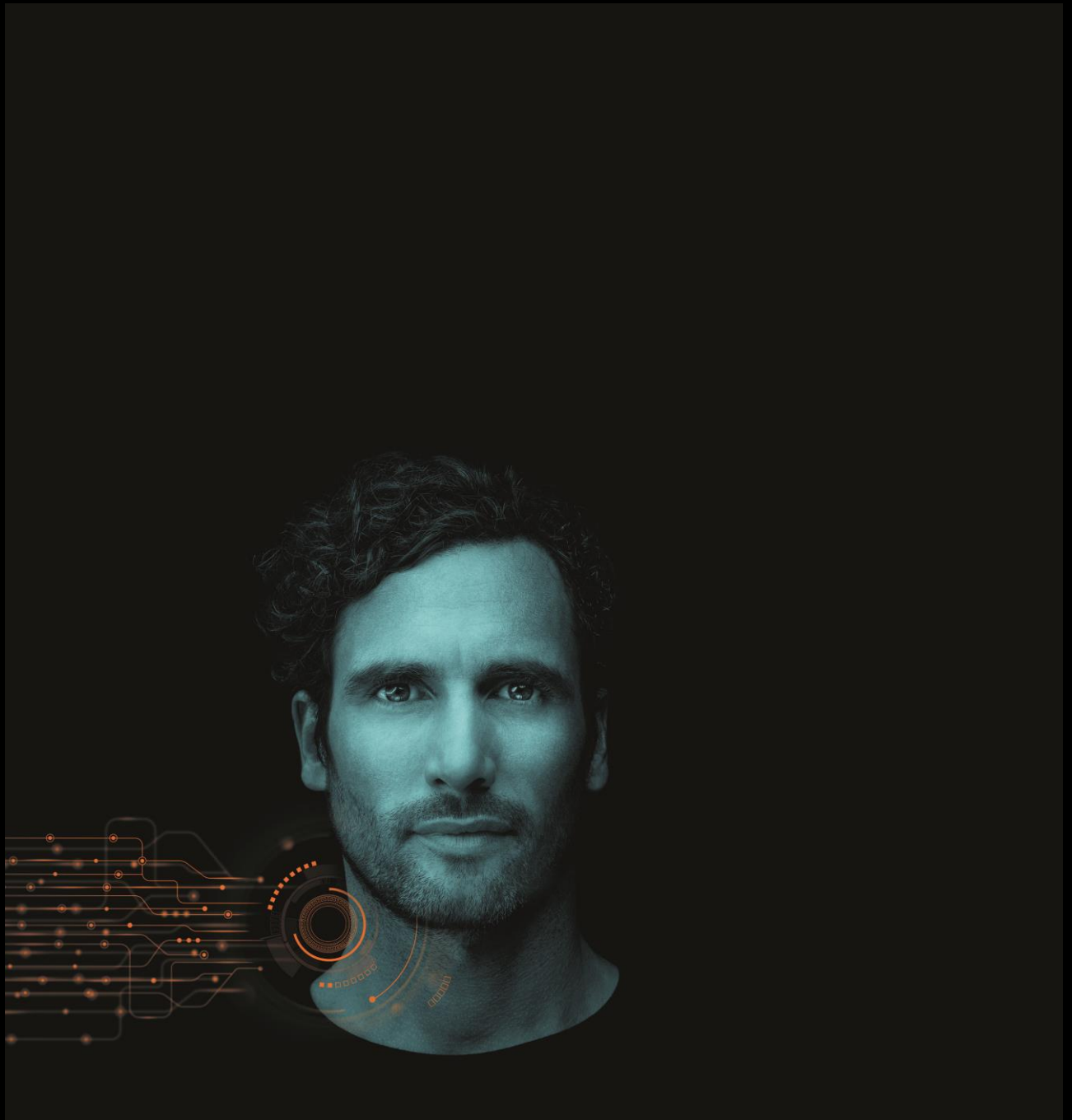


DICOM Conformance Statement

# *Syngo Carbon Space VA39A*



November 2025

# Conformance Statement Overview

The Syngo Carbon Core solution is a combination of three medical devices, Syngo Carbon Space, Syngo Carbon IDM and Syngo Carbon Enterprise Access.

The scope of this DCS is Syngo Carbon Space that creates and displays DICOM images. Other DICOM services are realized via an integration with Syngo Carbon IDM. Please refer Figure 1 for the scope of this DICOM Conformance Statement.

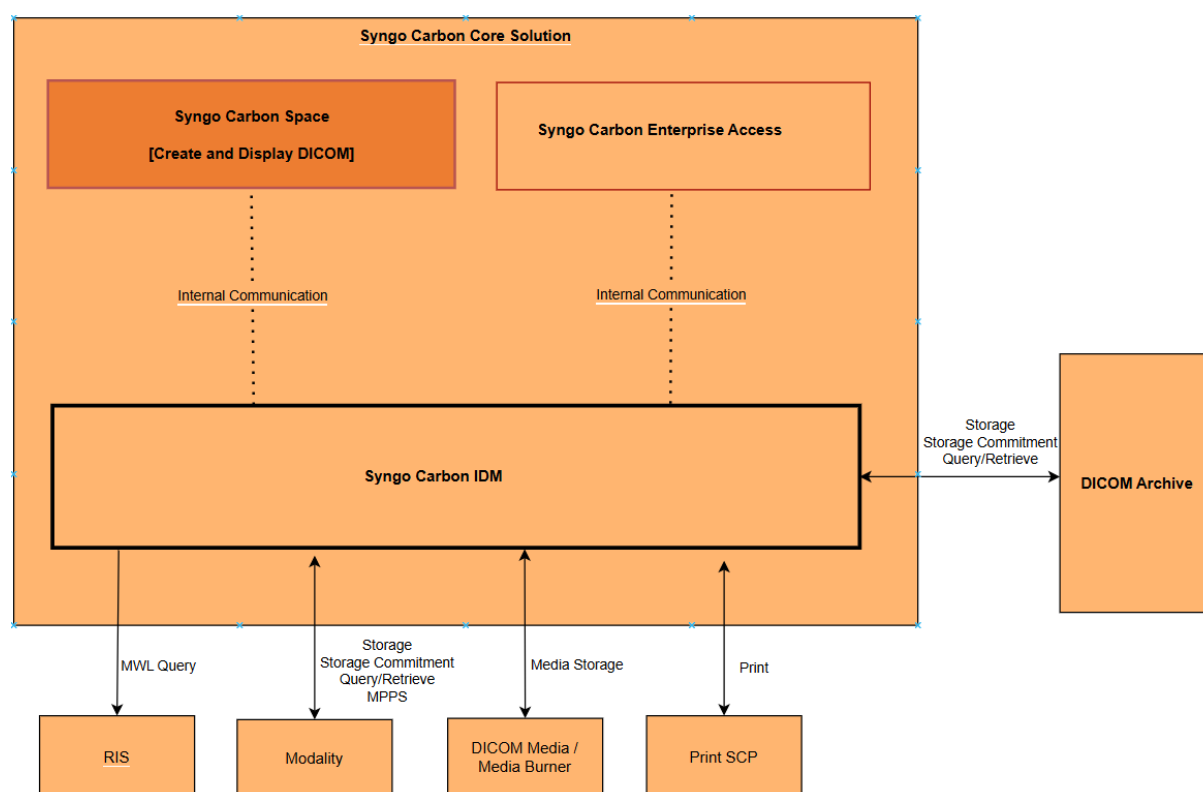


Figure 1: Overview of Implemented Services

Syngo Carbon Space supports creation and display of SOP classes listed in [Table-1](#). Furthermore, Syngo Carbon Space supports printing of DICOM images on a remote DICOM printer via Syngo Carbon IDM. Please refer to DICOM Conformance Statement Syngo Carbon IDM for supported Printing SOP classes.

Table 1: Storage SOP Classes

| SOP Classes                                                | SOP Class UID               | User of Service (SCU) |       | Provider of Service (SCP) |         |
|------------------------------------------------------------|-----------------------------|-----------------------|-------|---------------------------|---------|
|                                                            |                             | Create                | Send* | Store                     | Display |
| Computed Radiography Image Storage                         | 1.2.840.10008.5.1.4.1.1.1   | No                    | No    | No                        | Yes     |
| Digital X-Ray Image Storage<br>- For Presentation          | 1.2.840.10008.5.1.4.1.1.1.1 | No                    | No    | No                        | Yes     |
| Digital Mammography X-Ray Image Storage – For Presentation | 1.2.840.10008.5.1.4.1.1.1.2 | No                    | No    | No                        | Yes     |

| SOP Classes                                                | SOP Class UID                  | User of Service (SCU) |       | Provider of Service (SCP) |         |
|------------------------------------------------------------|--------------------------------|-----------------------|-------|---------------------------|---------|
|                                                            |                                | Create                | Send* | Store                     | Display |
| Digital Intra-Oral X-Ray Image - for Presentation - IMAGE  | 1.2.840.10008.5.1.4.1.1.1.3    | No                    | No    | No                        | Yes     |
| CT Image Storage                                           | 1.2.840.10008.5.1.4.1.1.2      | Yes                   | No    | No                        | Yes     |
| Enhanced CT Image Storage                                  | 1.2.840.10008.5.1.4.1.1.2.1    | No                    | No    | No                        | Yes     |
| Ultrasound Multi-frame Image Storage (Retired)             | 1.2.840.10008.5.1.4.1.1.3      | No                    | No    | No                        | Yes     |
| Ultrasound Multi-frame Image Storage                       | 1.2.840.10008.5.1.4.1.1.3.1    | No                    | No    | No                        | Yes     |
| MR Image Storage                                           | 1.2.840.10008.5.1.4.1.1.4      | Yes                   | No    | No                        | Yes     |
| Enhanced MR Image Storage                                  | 1.2.840.10008.5.1.4.1.1.4.1    | Yes                   | No    | No                        | Yes     |
| MR Spectroscopy Storage                                    | 1.2.840.10008.5.1.4.1.1.4.2    | No                    | No    | No                        | Yes     |
| Enhanced MR Color Image Storage                            | 1.2.840.10008.5.1.4.1.1.4.3    | Yes                   | No    | No                        | Yes     |
| Ultrasound Image Storage                                   | 1.2.840.10008.5.1.4.1.1.6.1    | No                    | No    | No                        | Yes     |
| Enhanced US Volume Storage                                 | 1.2.840.10008.5.1.4.1.1.6.2    | No                    | No    | No                        | Yes     |
| Secondary Capture Image Storage                            | 1.2.840.10008.5.1.4.1.1.7      | Yes                   | No    | No                        | Yes     |
| Multi-frame Single Bit Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.1    | No                    | No    | No                        | Yes     |
| Multi-frame Grayscale Byte Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.2    | No                    | No    | No                        | Yes     |
| Multi-frame Grayscale Word Secondary Capture Image Storage | 1.2.840.10008.5.1.4.1.1.7.3    | No                    | No    | No                        | Yes     |
| Multi-frame True Color Secondary Capture Image Storage     | 1.2.840.10008.5.1.4.1.1.7.4    | No                    | No    | No                        | Yes     |
| 12-lead ECG Waveform Storage                               | 1.2.840.10008.5.1.4.1.1.9.1.1  | No                    | No    | No                        | Yes     |
| General ECG Waveform Storage                               | 1.2.840.10008.5.1.4.1.1.9.1.2  | No                    | No    | No                        | Yes     |
| Grayscale Softcopy Presentation State Storage              | 1.2.840.10008.5.1.4.1.1.11.1   | Yes                   | No    | No                        | Yes     |
| Color Softcopy Presentation State Storage SOP Class        | 1.2.840.10008.5.1.4.1.1.11.2   | Yes                   | No    | No                        | Yes     |
| Pseudo-Color Softcopy Presentation State Storage SOP Class | 1.2.840.10008.5.1.4.1.1.11.3   | Yes                   | No    | No                        | Yes     |
| X-Ray Angiographic Image Storage                           | 1.2.840.10008.5.1.4.1.1.12.1   | No                    | No    | No                        | Yes     |
| Enhanced XA Image Storage                                  | 1.2.840.10008.5.1.4.1.1.12.1.1 | No                    | No    | No                        | Yes     |

| SOP Classes                                                                 | SOP Class UID                    | User of Service (SCU) |       | Provider of Service (SCP) |         |
|-----------------------------------------------------------------------------|----------------------------------|-----------------------|-------|---------------------------|---------|
|                                                                             |                                  | Create                | Send* | Store                     | Display |
| X-Ray Radiofluoroscopic Image Storage                                       | 1.2.840.10008.5.1.4.1.1.12.2     | No                    | No    | No                        | Yes     |
| X-Ray 3D Angiographic Image Storage                                         | 1.2.840.10008.5.1.4.1.1.13.1.1   | No                    | No    | No                        | Yes     |
| Breast Tomosynthesis Image Storage                                          | 1.2.840.10008.5.1.4.1.1.13.1.3   | No                    | No    | No                        | Yes     |
| Intravascular Optical Coherence Tomography Image Storage - For Presentation | 1.2.840.10008.5.1.4.1.1.14.1     | No                    | No    | No                        | Yes     |
| Intravascular Optical Coherence Tomography Image Storage - For Processing   | 1.2.840.10008.5.1.4.1.1.14.2     | No                    | No    | No                        | Yes     |
| Nuclear Medicine Image Storage                                              | 1.2.840.10008.5.1.4.1.1.20       | No                    | No    | No                        | Yes     |
| Raw Data Storage                                                            | 1.2.840.10008.5.1.4.1.1.66       | Yes                   | No    | No                        | No      |
| Segmentation Storage                                                        | 1.2.840.10008.5.1.4.1.1.66.4     | Yes                   | No    | No                        | Yes     |
| Real World Value Mapping Storage                                            | 1.2.840.10008.5.1.4.1.1.67       | Yes                   | No    | No                        | Yes     |
| VL Image Storage (Retired)                                                  | 1.2.840.10008.5.1.4.1.1.77.1     | No                    | No    | No                        | Yes     |
| VL Endoscopic Image Storage                                                 | 1.2.840.10008.5.1.4.1.1.77.1.1   | No                    | No    | No                        | Yes     |
| Video Endoscopic Image Storage                                              | 1.2.840.10008.5.1.4.1.1.77.1.1.1 | No                    | No    | No                        | Yes     |
| VL Microscopic Image Storage                                                | 1.2.840.10008.5.1.4.1.1.77.1.2   | No                    | No    | No                        | Yes     |
| Video Microscopic Image Storage                                             | 1.2.840.10008.5.1.4.1.1.77.1.2.1 | No                    | No    | No                        | Yes     |
| VL Slide-Coordinates Microscopic Image Storage                              | 1.2.840.10008.5.1.4.1.1.77.1.3   | No                    | No    | No                        | Yes     |
| VL Photographic Image Storage                                               | 1.2.840.10008.5.1.4.1.1.77.1.4   | No                    | No    | No                        | Yes     |
| Video Photographic Image Storage                                            | 1.2.840.10008.5.1.4.1.1.77.1.4.1 | No                    | No    | No                        | Yes     |
| Ophthalmic Photography 8 Bit Image Storage                                  | 1.2.840.10008.5.1.4.1.1.77.1.5.1 | No                    | No    | No                        | Yes     |
| Ophthalmic Photography 16 Bit Image Storage                                 | 1.2.840.10008.5.1.4.1.1.77.1.5.2 | No                    | No    | No                        | Yes     |
| Ophthalmic Tomography Image Storage                                         | 1.2.840.10008.5.1.4.1.1.77.1.5.4 | No                    | No    | No                        | Yes     |
| Wide Field Ophthalmic Photography Stereographic Projection Image Storage    | 1.2.840.10008.5.1.4.1.1.77.1.5.5 | No                    | No    | No                        | Yes     |

| SOP Classes                                                    | SOP Class UID                    | User of Service (SCU) |       | Provider of Service (SCP) |         |
|----------------------------------------------------------------|----------------------------------|-----------------------|-------|---------------------------|---------|
|                                                                |                                  | Create                | Send* | Store                     | Display |
| Wide Field Ophthalmic Photography 3D Coordinates Image Storage | 1.2.840.10008.5.1.4.1.1.77.1.5.6 | No                    | No    | No                        | Yes     |
| VL Whole Slide Microscopy Image Storage                        | 1.2.840.10008.5.1.4.1.1.77.1.6   | No                    | No    | No                        | Yes     |
| Basic Text SR Storage                                          | 1.2.840.10008.5.1.4.1.1.88.11    | Yes                   | No    | No                        | Yes     |
| Comprehensive SR Storage                                       | 1.2.840.10008.5.1.4.1.1.88.33    | No                    | No    | No                        | Yes     |
| Encapsulated PDF Storage                                       | 1.2.840.10008.5.1.4.1.1.104.1    | No                    | No    | No                        | Yes     |
| Positron Emission Tomography Image Storage                     | 1.2.840.10008.5.1.4.1.1.128      | No                    | No    | No                        | Yes     |
| RT Image Storage                                               | 1.2.840.10008.5.1.4.1.1.481.1    | No                    | No    | No                        | Yes     |
| RT Dose Storage                                                | 1.2.840.10008.5.1.4.1.1.481.2    | No                    | No    | No                        | Yes     |

\*DICOM Send and Recive is handled via Syngo Carbon IDM

**Table 2: Implementation Identifying Information**

| Name                        | Value                       |
|-----------------------------|-----------------------------|
| Implementation Class UID    | 1.2.276.0.7230010.3.0.3.6.1 |
| Implementation Version Name | OFFIS_DCMTK_361             |

|          |                                                         |                              |
|----------|---------------------------------------------------------|------------------------------|
| <b>1</b> | <b>INTRODUCTION</b>                                     | <b>8</b>                     |
| 1.1      | Revision History                                        | 8                            |
| 1.2      | Audience                                                | 8                            |
| 1.3      | Remarks                                                 | 8                            |
| 1.4      | Definitions and Abbreviations                           | 8                            |
| 1.5      | References                                              | 9                            |
| <b>2</b> | <b>NETWORKING</b>                                       | <b>10</b>                    |
| 2.1      | Implementation Model                                    | 10                           |
| 2.1.1    | Application Data Flow                                   | 10                           |
| 2.1.2    | Functional Definitions of Application Entities          | 10                           |
| 2.1.2.1  | Functional Definitions of Syngo Carbon Space            | 10                           |
| 2.1.3    | Sequencing of Real-World Activities                     | 10                           |
| 2.2      | Specifications                                          | 10                           |
| 2.2.1    | Syngo Carbon Space Specification                        | 10                           |
| 2.2.1.1  | SOP Classes                                             | 10                           |
| 2.2.1.2  | Association Policies                                    | 10                           |
| 2.2.1.3  | Association Initiation Policy                           | 11                           |
| 2.3      | Network Interfaces                                      | 11                           |
| 2.3.1    | Physical Network Interface                              | 11                           |
| 2.3.2    | IPv4 and IPv6 Support                                   | 11                           |
| 2.3.3    | Configuration                                           | 11                           |
| <b>3</b> | <b>MEDIA EXCHANGE</b>                                   | <b>11</b>                    |
| <b>4</b> | <b>TRANSFORMATION OF DICOM TO CDA</b>                   | <b>11</b>                    |
| <b>5</b> | <b>SUPPORT OF EXTENDED CHARACTER SETS</b>               | <b>11</b>                    |
| <b>6</b> | <b>SECURITY</b>                                         | <b>12</b>                    |
| 6.1      | Security Profiles                                       | 12                           |
| 6.1.1    | Time Synchronization Profiles                           | Error! Bookmark not defined. |
| 6.1.2    | Audit Trail Messages                                    | 12                           |
| 6.1.3    | Audit Trail Message Transmission Profile – SYSLOG – TLS | 16                           |
| 6.1.4    | Audit Trail Message Transmission Profile – SYSLOG – UDP | 16                           |
| 6.1.5    | Secure Transport Connection Details                     | 16                           |

|            |                                                          |           |
|------------|----------------------------------------------------------|-----------|
| 6.1.6      | Attribute Confidentiality Details                        | 16        |
| 6.1.7      | Digital Signature Details                                | 16        |
| 6.1.8      | Additional DICOM Security Profile Details                | 16        |
| <b>7</b>   | <b>ANNEXES</b>                                           | <b>16</b> |
| <b>7.1</b> | <b>IOD Content</b>                                       | <b>16</b> |
| 7.1.1      | IODs Created                                             | 17        |
| 7.1.1.1    | Common Modules                                           | 17        |
| 7.1.1.2    | Basic Text SR IOD                                        | 25        |
| 7.1.1.3    | Segmentation IOD                                         | 26        |
| 7.1.1.4    | Raw Data IOD                                             | 31        |
| 7.1.1.5    | CT Image IOD                                             | 32        |
| 7.1.1.6    | MR Image IOD                                             | 35        |
| 7.1.1.7    | Secondary Capture Image IOD                              | 36        |
| 7.1.1.8    | Enhanced MR Image IOD                                    | 41        |
| 7.1.1.9    | Grayscale Softcopy Presentation State IOD                | 53        |
| 7.1.1.10   | Color Softcopy Presentation State IOD                    | 58        |
| 7.1.1.11   | Pseudo-Color Softcopy Presentation State IOD             | 59        |
| 7.1.1.12   | Real World Value Mapping IOD                             | 60        |
| 7.1.1.13   | Enhanced MR Color Image IOD                              | 63        |
| 7.1.2      | Data Dictionary of Private Attributes                    | 64        |
| <b>7.2</b> | <b>Coded Terminology and Templates</b>                   | <b>66</b> |
| <b>7.3</b> | <b>Grayscale Image Consistency</b>                       | <b>66</b> |
| <b>7.4</b> | <b>Standard Extended/Specialized/Private SOP Classes</b> | <b>66</b> |
| <b>7.5</b> | <b>Private Transfer Syntaxes</b>                         | <b>66</b> |

# 1 Introduction

## 1.1 Revision History

| Version | Date       | Change                                 |
|---------|------------|----------------------------------------|
| R 0.1   | 09-23-2025 | Draft for Syngo Carbon Space VA39A.    |
| R 1.0   | 11-03-2025 | Released for Syngo Carbon Space VA39A. |

## 1.2 Audience

This document is intended for hospital staff, health system Clinical Users, Sales Personnel, System integrators, Field Service Engineers, Hospital IT Staff, Research Personnel, software designers or implementers. It is assumed that the reader has a working understanding of DICOM.

## 1.3 Remarks

The scope of this DICOM Conformance Statement is to facilitate integration between Syngo Carbon Space and other DICOM products. The Conformance Statement should be read and understood in conjunction with the [DICOM Standard \[1\]](#). DICOM by itself does not guarantee interoperability.

The Conformance Statement does, however, facilitate a first-level comparison for interoperability between different applications supporting compatible DICOM functionality.

This Conformance Statement is not supposed to replace validation with other DICOM equipment to ensure proper exchange of intended information. In fact, the user should be aware of the following important issues:

- The comparison of conformance statements is the first step towards assessing interconnectivity and interoperability between Syngo Carbon Space and other DICOM conformant equipment.
- Test procedures should be defined and executed to validate the required level of interoperability with specific compatible DICOM equipment, as established by the healthcare facility.

Syngo Carbon Space has participated in an industry-wide testing program sponsored by Integrating the Healthcare Enterprise (IHE). The IHE Integration Statement of Syngo Carbon Space together with the IHE Technical Framework may facilitate the process of validation testing.

Siemens Healthineers reserves the right to modify the design and specifications contained herein without prior notice. Please contact your local Siemens Healthineers representative for the most recent product information.

## 1.4 Definitions and Abbreviations

Definitions and abbreviations used in this document are defined within the different parts of the DICOM standard.

Additional Abbreviations and terms are as follows:

|       |                                                |
|-------|------------------------------------------------|
| AE    | DICOM Application Entity                       |
| AET   | Application Entity Title                       |
| DCS   | DICOM Conformance Statement                    |
| DICOM | Digital Imaging and Communications in Medicine |
| IDM   | Image Data Manager                             |
| IE    | Information Entity                             |
| IHE   | Integrating the Healthcare Enterprise          |
| IOD   | DICOM Information Object Definition            |

|       |                                               |
|-------|-----------------------------------------------|
| ISO   | International Standard Organization           |
| n. a. | not applicable                                |
| NEMA  | National Electrical Manufacturers Association |
| O     | Optional Key Attribute                        |
| R     | Required Key Attribute                        |
| SCU   | DICOM Service Class User (DICOM client)       |
| SCP   | DICOM Service Class Provider (DICOM Server)   |
| SOP   | DICOM Service-Object Pair                     |
| SR    | Structured Report                             |
| U     | Unique Key Attribute                          |
| UID   | Unique Identifier                             |
| UTF-8 | Unicode Transformation Format-8               |
| VR    | Value Representation                          |

## 1.5 References

- [1] National Electrical Manufacturers Association (NEMA), Rosslyn, VA USA. PS3 / ISO 12052 Digital Imaging and Communications in Medicine (DICOM) Standard. <http://www.dicomstandard.org>
- [2] DICOM Conformance Statement syngo. share core VA51A
- [3] syngo. share core Online Help VA51A
- [4] IHE [http://www.ihe.net/Resources/technical\\_frameworks/#radiology](http://www.ihe.net/Resources/technical_frameworks/#radiology)

## 2 Networking

### 2.1 Implementation Model

The Syngo Carbon Space creates and displays DICOM data which are stored in Syngo Carbon IDM. DICOM print and other DICOM services are handled via Syngo Carbon IDM.

#### 2.1.1 Application Data Flow

Below figure provides the functional overview of the Syngo Carbon Space.

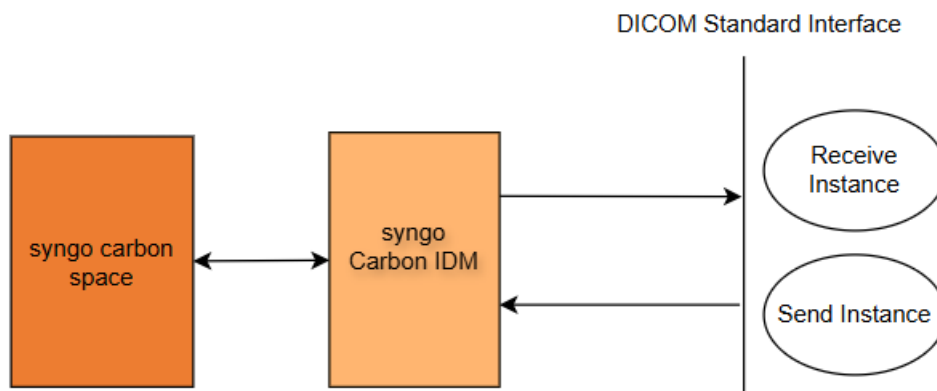


Figure 2: Functional overview of Syngo Carbon Space

#### 2.1.2 Functional Definitions of Application Entities

##### 2.1.2.1 Functional Definitions of Syngo Carbon Space

The syngo Carbon Space is integrated into the Syngo Carbon Core Solution. It supports displaying DICOM instances received via the syngo Carbon IDM, and the creation of new DICOM Instances, which in turn will be made available via the syngo Carbon IDM. Details for the Display and Create DICOM objects activity can be found below:

- [Table-1](#) indicates objects that can be created and displayed.
- [Annex](#) for details on the IOD contents created by the Syngo Carbon Space

#### 2.1.3 Sequencing of Real-World Activities

Not Applicable.

## 2.2 Specifications

This section outlines the specifications for each of the Application Entities that are part of Syngo Carbon Space.

#### 2.2.1 Syngo Carbon Space Specification

##### 2.2.1.1 SOP Classes

The Syngo Carbon Space creates and display data stored in *Syngo Carbon IDM* mentioned in [Table 1: Storage SOP Classes](#)

##### 2.2.1.2 Association Polices

Not Applicable

### 2.2.1.3 Association Initiation Policy

Not Applicable

## 2.3 Network Interfaces

### 2.3.1 Physical Network Interface

The network communication is independent from the physical medium over which TCP/IP executes; it inherits this from the Windows OS upon which it executes.

All DICOM communication through Syngo Carbon Space is handled by *Syngo Carbon IDM*. Syngo Carbon IDM supports configuring the DICOM communication to use secure channel (TLS) between *Syngo Carbon IDM* and configured remote nodes. Detailed instructions how to set up secure DICOM communication are available in the [Syngo Share Core Online Help](#).

### 2.3.2 IPv4 and IPv6 Support

Currently only IPv4 networks are supported (no support for IPv6).

### 2.3.3 Configuration

The configuration of Syngo Carbon IDM AE is available in [Syngo Share Core Online Help](#).

## 3 Media Exchange

Not Applicable.

## 4 Transformation of DICOM to CDA

Not Applicable

## 5 Support of Extended Character Sets

The Syngo Carbon Space DICOM application supports the following character sets as defined in the table 3 to 6 below:

Table 3: Single-Byte Character Sets without Code Extension

| Defined Term                                       | Code       | Description          |
|----------------------------------------------------|------------|----------------------|
| Single-Byte Character Sets without Code Extensions |            |                      |
| ISO_IR 6                                           | ISO-646    | Default Repertoire   |
| ISO_IR 100                                         | ISO-8859-1 | Latin Alphabet No. 1 |
| ISO_IR 101                                         | ISO-8859-2 | Latin Alphabet No. 2 |
| ISO_IR 109                                         | ISO-8859-3 | Latin Alphabet No 3  |
| ISO_IR 110                                         | ISO-8859-4 | Latin Alphabet No 4  |
| ISO IR 144                                         | ISO-8859-5 | Cyrillic             |
| ISO IR 127                                         | ISO-8859-6 | Arabic               |
| ISO IR 126                                         | ISO-8859-7 | Greek                |

| Defined Term                                      | Code        | Description                      |
|---------------------------------------------------|-------------|----------------------------------|
| ISO IR 138                                        | ISO-8859-8  | Hebrew                           |
| ISO IR 13                                         | JIS X 0201  | Japanese (half-width Katakana)   |
| ISO IR 166                                        | ISO-8859-11 | Thai                             |
| Single-Byte Character Sets with Code Extension    |             |                                  |
| ISO 2022 IR 6                                     | ISO-646     | Default repertoire               |
| ISO 2022 IR 100                                   | ISO-8859-1  | Latin Alphabet No. 1             |
| ISO 2022 IR 101                                   | ISO-8859-2  | Latin Alphabet No. 2             |
| ISO 2022 IR 109                                   | ISO-8859-3  | Latin Alphabet No 3              |
| ISO 2022 IR 110                                   | ISO-8859-4  | Latin Alphabet No 4              |
| Multi-Byte Character Sets without Code Extensions |             |                                  |
| GB18030                                           | GB18030     | GB18030                          |
| ISO_IR 192                                        | UTF-8       | Unicode in UTF-8                 |
| Multi-Byte Character Sets with Code Extensions    |             |                                  |
| ISO 2022 IR 87                                    | JIS X 0208  | Japanese kanji                   |
| ISO 2022 IR 159                                   | JIS X 0212  | Japanese Supplementary Kanji set |
| ISO 2022 IR 149                                   | KS X 1001   | Korean (Hangul and Hanja)        |

All Specific Character Sets (SCS) listed above are supported for incoming Data. When creating new Instances, the system will use the default SCS (or SCS List) configured on the machine.

## 6 Security

### 6.1 Security Profiles

#### 6.1.1 Online Electronic Storage Secure Use

Remote Access is restricted to User Level. This is done on the Operation System level

#### 6.1.2 Audit Trail Messages

Table 6.1.2-1 specifies the DICOM Audit Messages that Syngo carbon space can detect and report. It defines the list of triggers that will cause the Audit Message to be generated if these triggers can be configured or not. It also specifies whether the content of the Audit Message can be configured or not

Table 6.1.2-2 to Table 6.1.2-6 specifies the implementation details of each audit message supported by this product.

**Table 6.1.2-1: DICOM Specific Audit Messages**

| Audit Message                      | Used | Supported Triggers                    | Configurable Triggers | Configurable Message | Comments |
|------------------------------------|------|---------------------------------------|-----------------------|----------------------|----------|
| Application Activity               | Y    | Application Start<br>Application Stop | N                     | N                    |          |
| Audit Log Used                     | N    |                                       | N                     | N                    |          |
| Begin Transferring DICOM Instances | N    |                                       | N                     | N                    |          |
| Data Export                        | Y    | Export                                | N                     | N                    |          |
| Data Import                        | N    |                                       | N                     | N                    |          |
| DICOM Instance Accessed            | Y    | Update<br>Delete                      | N                     | N                    |          |
| DICOM Instance Transferred         | N    |                                       | N                     | N                    |          |

| Audit Message       | Used | Supported Triggers                                | Configurable Triggers | Configurable Message | Comments |
|---------------------|------|---------------------------------------------------|-----------------------|----------------------|----------|
| DICOM Study Deleted | Y    | Deleted                                           | N                     | N                    |          |
| Network Entry       | N    |                                                   | N                     | N                    |          |
| Query               | N    |                                                   | N                     | N                    |          |
| Security Alert      | Y    | Software Configuration Node Authentication Failed | N                     | N                    |          |
| User Authentication | Y    | Login Login Failed                                | N                     | N                    |          |
| Order Record        | N    |                                                   | N                     | N                    |          |
| Patient Record      | N    |                                                   | N                     | N                    |          |
| Procedure Record    | N    |                                                   | N                     | N                    |          |

**Table 6.1.2-2: Audit Message Details – Export**

| Real-World Entities                                        | Field Name                 | Supported | Value Constraints                                                             |
|------------------------------------------------------------|----------------------------|-----------|-------------------------------------------------------------------------------|
| <b>Application Activity Message</b>                        |                            |           |                                                                               |
| Event                                                      | EventID                    | Y         | EV (110106, DCM, "Export")                                                    |
|                                                            | EventActionCode            | Y         | R                                                                             |
|                                                            | EventDateTime              | Y         | Current Date and Time                                                         |
|                                                            | EventOutcomeIndicator      | Y         | 0 – Success<br>4 – Minor Failure<br>8 – Serious Failure<br>12 – Major Failure |
|                                                            | EventTypeCode              | N         |                                                                               |
| Active Participant<br>(Remote Users and Processes)         | UserID                     | Y         | Provided by the source                                                        |
|                                                            | AlternativeUserID          | N         |                                                                               |
|                                                            | UserName                   | N         |                                                                               |
|                                                            | UserIsRequestor            | Y         | false                                                                         |
|                                                            | RoleIDCode                 | Y         | EV (110152, DCM, "Destination Role ID")                                       |
|                                                            | NetworkAccessPointID       | N         |                                                                               |
|                                                            | NetworkAccessPointTypeCode | N         |                                                                               |
| Active Participant<br>(User or Process Exporting the Data) | UserID                     | Y         | Provided by the source                                                        |
|                                                            | AlternativeUserID          | N         |                                                                               |
|                                                            | UserName                   | N         |                                                                               |
|                                                            | UserIsRequestor            | Y         | true                                                                          |
|                                                            | RoleIDCode                 | Y         | EV (110153, DCM, "Source Role ID")                                            |
|                                                            | NetworkAccessPointTypeCode | Y         | 2                                                                             |
|                                                            | NetworkAccessPointID       | Y         | unknown                                                                       |
| Active Participant<br>(Media)                              | UserID                     | Y         | Fhircast Hub                                                                  |
|                                                            | AlternativeUserID          | N         |                                                                               |
|                                                            | UserName                   | N         |                                                                               |
|                                                            | UserIsRequestor            | Y         | false                                                                         |
|                                                            | RoleIDCode                 | Y         | EV (110154, DCM, "Destination Media")                                         |
|                                                            | NetworkAccessPointTypeCode | N         |                                                                               |
|                                                            | NetworkAccessPointID       | N         |                                                                               |
|                                                            | MediaIdentifier            | N         |                                                                               |
|                                                            | MediaType                  | N         |                                                                               |
| AuditSourceIdentification                                  | AuditEnterpriseSiteID      | Y         | Machine name                                                                  |

| Real-World Entities | Field Name    | Supported | Value Constraints      |
|---------------------|---------------|-----------|------------------------|
|                     | AuditSourceID | Y         | Provided by the source |

**Table 6.1.2-3: Audit Message Details – DICOM Instance Accessed**

| Real-World Entities                                                      | Field Name                 | Supported | Value Constraints                                                             |
|--------------------------------------------------------------------------|----------------------------|-----------|-------------------------------------------------------------------------------|
| <b>Application Activity Message</b>                                      |                            |           |                                                                               |
| Event                                                                    | EventID                    | Y         | EV (110103, DCM, "DICOM Instances Accessed")                                  |
|                                                                          | EventActionCode            | Y         | C – Create<br>R – Read<br>U – Update<br>D – Delete                            |
|                                                                          | EventDateTime              | Y         | Current date and Time                                                         |
|                                                                          | EventOutcomeIndicator      | Y         | 0 – Success<br>4 – Minor Failure<br>8 – Serious Failure<br>12 – Major Failure |
|                                                                          | EventTypeCode              | N         |                                                                               |
| Active Participant<br>(Persons and or Programs<br>manipulating the data) | UserID                     | Y         | User or Process Identification<br>provided by the Operating System            |
|                                                                          | AlternativeUserID          | N         |                                                                               |
|                                                                          | UserName                   | N         |                                                                               |
|                                                                          | UsersRequestor             | Y         | false                                                                         |
|                                                                          | RoleIDCode                 | N         |                                                                               |
|                                                                          | NetworkAccessPointTypeCode | N         |                                                                               |
|                                                                          | NetworkAccessPointID       | N         |                                                                               |
| AuditSourceIdentification                                                | AuditEnterpriseSiteID      | Y         | Machine name                                                                  |
|                                                                          | AuditSourceID              | Y         | Provided by the source                                                        |

**Table 6.1.2Error! No text of specified style in document.-4: Audit Message Details –DICOM Study Deleted**

| Real-World Entities                 | Field Name            | Supported | Value Constraints                                                             |
|-------------------------------------|-----------------------|-----------|-------------------------------------------------------------------------------|
| <b>Application Activity Message</b> |                       |           |                                                                               |
| Event                               | EventID               | Y         | EV (110105, DCM, "DICOM Study Deleted")                                       |
|                                     | EventActionCode       | Y         | D – Delete                                                                    |
|                                     | EventDateTime         | Y         | Current date and Time                                                         |
|                                     | EventOutcomeIndicator | Y         | 0 – Success<br>4 – Minor Failure<br>8 – Serious Failure<br>12 – Major Failure |
|                                     | EventTypeCode         | N         |                                                                               |
| Active Participant                  | UserID                | Y         | Provided by the source                                                        |
|                                     | AlternativeUserID     | N         |                                                                               |
|                                     | UserName              | N         |                                                                               |
|                                     | UsersRequestor        | Y         | False                                                                         |

| Real-World Entities       | Field Name                 | Supported | Value Constraints      |
|---------------------------|----------------------------|-----------|------------------------|
|                           | RoleIDCode                 | N         |                        |
|                           | NetworkAccessPointTypeCode | N         |                        |
|                           | NetworkAccessPointID       | N         |                        |
| <b>Other messages</b>     |                            |           |                        |
| AuditSourceIdentification | AuditEnterpriseSiteID      | Y         | Machine name           |
|                           | AuditSourceID              | Y         | Provided by the source |

**Table 6.1.2-5: Audit Message Details – Security Alert**

| Real-World Entities                                     | Field Name                 | Supported | Value Constraints                          |
|---------------------------------------------------------|----------------------------|-----------|--------------------------------------------|
| <b>Application Activity Message</b>                     |                            |           |                                            |
| Event                                                   | EventID                    | Y         | EV (110113, DCM, "Security Alert")         |
|                                                         | EventActionCode            | Y         | E                                          |
|                                                         | EventDateTime              | Y         | Current date and Time                      |
|                                                         | EventOutcomeIndicator      | Y         | 0                                          |
|                                                         | EventTypeCode              | Y         | EV (110131, DCM, "Software Configuration") |
| Active Participant<br>(Person authenticated or claimed) | UserID                     | Y         | Provided by the source                     |
|                                                         | AlternativeUserID          | N         |                                            |
|                                                         | UserName                   | N         |                                            |
|                                                         | UserIsRequestor            | Y         | true                                       |
|                                                         | RoleIDCode                 | N         |                                            |
|                                                         | NetworkAccessPointTypeCode | N         |                                            |
|                                                         | NetworkAccessPointID       | N         |                                            |
| <b>Other messages</b>                                   |                            |           |                                            |
| AuditSourceIdentification                               | AuditEnterpriseSiteID      | Y         | Machine name                               |
|                                                         | AuditSourceID              | Y         | Provided by the source                     |

**Table 6.1.2-6: Audit Message Details – User Authentication**

| Real-World Entities                                     | Field Name            | Supported | Value Constraints                            |
|---------------------------------------------------------|-----------------------|-----------|----------------------------------------------|
| <b>Application Activity Message</b>                     |                       |           |                                              |
| Event                                                   | EventID               | Y         | EV (110114, DCM, "User Authentication")      |
|                                                         | EventActionCode       | Y         | E                                            |
|                                                         | EventDateTime         | Y         | Current date and Time                        |
|                                                         | EventOutcomeIndicator | Y         | 0 or 4                                       |
|                                                         | EventTypeCode         | Y         | EV (110122, DCM, "Login")                    |
| Active Participant<br>(Person authenticated or claimed) | UserID                | Y         | The ID of the User requesting authentication |
|                                                         | AlternativeUserID     | N         |                                              |
|                                                         | UserName              | N         |                                              |

| Real-World Entities       | Field Name                 | Supported | Value Constraints      |
|---------------------------|----------------------------|-----------|------------------------|
|                           | UserIsRequestor            | Y         | true                   |
|                           | RoleIDCode                 | N         |                        |
|                           | NetworkAccessPointTypeCode | Y         | 1                      |
|                           | NetworkAccessPointID       | Y         |                        |
| <b>Other messages</b>     |                            |           |                        |
| AuditSourceIdentification | AuditEnterpriseSiteID      | Y         | Machine name           |
|                           | AuditSourceID              | Y         | Provided by the source |

### 6.1.3 Audit Trail Message Transmission Profile – SYSLOG – TLS

N/A

### 6.1.4 Audit Trail Message Transmission Profile – SYSLOG – UDP

N/A

### 6.1.5 Secure Transport Connection Details

N/A

### 6.1.6 Attribute Confidentiality Details

N/A

### 6.1.7 Digital Signature Details

N/A

### 6.1.8 Additional DICOM Security Profile Details

N/A

## 7 Annexes

### 7.1 IOD Content

This section provides the detailed content for all the SOP Instances natively created by Syngo Carbon Space, e.g. images created by evidence documents created on a review workstation (e.g., all SOP Classes that are marked in the “Created” column in [Table-1](#)).

Throughout the tables listed in this section, the following codes are used for the “Source” and “Presence” columns.

In the “Source” column, the following Values can be used:

- FIXED: The Value is pre-defined and cannot be modified.
- GENERATED: The Value is generated by the system.
- USER: The Value is entered by the user.
- EMPTY: The Attribute is sent without Value.
- SRC\_INSTANCE: The Value is copied from previously created/received SOP Instances.

The “Presence” columns reflect the usage of the Module, Functional Group Macro, Attributes, or Value in the Syngo Carbon Space Implementation and is not necessarily the same as defined in the DICOM Standard. For the “Presence” column the following Values can be used:

- ALWAYS: the module, functional group macro, Attributes or Value is always present.
- CONDITIONAL: the presence of the module, functional group macro, Attributes or Value is dependent on a condition. The condition must be listed in the “Conditions” column.
- EMPTY: The Attribute is present but without a Value (zero length).
- SRC\_COPY: The presence of the Attributes and Values depends on the availability of these in the source instances, which are used for copying this information.

### 7.1.1 IODs Created

#### 7.1.1.1 Common Modules

All SOP Instances generated by the system use the common modules listed in Table 2.1.1.1-1 to Table 7.1.1.1-14 or a subset of them, as defined in the IOD specific subsections below.

**Table 7.1.1.1-1: Patient Module**

| Attribute Name              | Tag         | Source             | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------|-------------|--------------------|-----------------------|-------------------|-------|------------|----------|
| Patient's Name              | (0010,0010) | SRC_INSTANCE, USER | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient ID                  | (0010,0020) | SRC_INSTANCE, USER | SRC_COPY              | SRC_COPY          |       |            |          |
| Issuer of Patient ID        | (0010,0021) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient's Birth Date        | (0010,0030) | SRC_INSTANCE, USER | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient's Sex               | (0010,0040) | SRC_INSTANCE, USER | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient's Birth Time        | (0010,0032) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Referenced Patient Sequence | (0008,1120) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Other Patient IDs           | (0010,1000) | SRC_INSTANCE, USER | SRC_COPY              | SRC_COPY          |       |            |          |
| Other Patient Names         | (0010,1001) | SRC_INSTANCE, USER | SRC_COPY              | SRC_COPY          |       |            |          |

**Table 7.1.1.1-2: General Study Module**

| Attribute Name             | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Study Instance UID         | (0018,000D) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Study Date                 | (0008,0020) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Study Time                 | (0008,0030) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Referring Physician's Name | (0008,0090) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Study ID                   | (0020,0010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Accession Number           | (0008,0050) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Study Description          | (0008,1030) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Referenced Study Sequence  | (0008,1110) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

|                              |             |              |          |          |  |  |  |
|------------------------------|-------------|--------------|----------|----------|--|--|--|
| >Referenced SOP Class UID    | (0008,1150) | SRC_INSTANCE | SRC_COPY | SRC_COPY |  |  |  |
| >Referenced SOP Instance UID | (0008,1155) | SRC_INSTANCE | SRC_COPY | SRC_COPY |  |  |  |
| Procedure Code Sequence      | (0008,1032) | SRC_INSTANCE | SRC_COPY | SRC_COPY |  |  |  |
| Requesting Service           | (0032,1033) | SRC_INSTANCE | SRC_COPY | SRC_COPY |  |  |  |

**Table 7.1.1.1-3: Patient Study Module**

| Attribute Name                  | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Admitting Diagnoses Description | (0008,1080) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient's Age                   | (0010,1010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient's Size                  | (0010,1020) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient's Weight                | (0010,1030) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Medical Alerts                  | (0010,2000) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Allergies                       | (0010,2110) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Smoking Status                  | (0010,21A0) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Additional Patient History      | (0010,21B0) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Pregnancy Status                | (0010,21C0) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Last Menstrual Date             | (0010,21D0) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Occupation                      | (0010,2180) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Admission ID                    | (0038,0010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

**Table 7.1.1.1-4: General Series Module**

| Attribute Name              | Tag         | Source                | Presence of Attribute | Presence of Value | Value | Conditions                                                     | Comments                         |
|-----------------------------|-------------|-----------------------|-----------------------|-------------------|-------|----------------------------------------------------------------|----------------------------------|
| Modality                    | (0008,0060) | FIXED                 | ALWAYS                | ALWAYS            |       |                                                                | Value depends on the IOD created |
| Series Instance UID         | (0020,000E) | GENERATED             | ALWAYS                | ALWAYS            |       |                                                                |                                  |
| Series Number               | (0020,0011) | GENERATED             | ALWAYS                | ALWAYS            |       | Auto generated numeric number                                  |                                  |
| Laterality                  | (0020,0060) | SRC_INSTANCE          | ALWAYS                | CONDITIONAL       |       | only available if the body part examined is a paired structure |                                  |
| Series Date                 | (0008,0021) | GENERATED             | ALWAYS                | ALWAYS            |       |                                                                |                                  |
| Series Time                 | (0008,0031) | GENERATED             | ALWAYS                | ALWAYS            |       |                                                                |                                  |
| Performing Physician's Name | (0008,1050) | SRC_INSTANCE          | SRC_COPY              | SRC_COPY          |       |                                                                |                                  |
| Protocol Name               | (0018,1030) | USER/<br>GENERATED    | ALWAYS                | ALWAYS            |       |                                                                |                                  |
| Series Description          | (0008,103E) | USER/<br>SRC_INSTANCE | ALWAYS                | ALWAYS            |       |                                                                |                                  |

| Attribute Name                               | Tag         | Source             | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------------------------|-------------|--------------------|-----------------------|-------------------|-------|------------|----------|
| Operators' Name                              | (0008,1070) | USER/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Referenced Performed Procedure Step Sequence | (0008,1111) | SRC_INSTANCE       | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced SOP Class UID                    | (0008,1150) | SRC_INSTANCE       | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced SOP Instance UID                 | (0008,1155) | SRC_INSTANCE       | ALWAYS                | ALWAYS            |       |            |          |
| Body Part Examined                           | (0018,0015) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Patient Position                             | (0018,5100) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Request Attributes Sequence                  | (0040,0275) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Performed Procedure Step ID                  | (0040,0253) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Performed Procedure Step Start Date          | (0040,0244) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Performed Procedure Step Start Time          | (0040,0245) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Performed procedure step Description         | (0040,0254) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| Performed Protocol Code Sequence             | (0040,0260) | SRC_INSTANCE       | SRC_COPY              | SRC_COPY          |       |            |          |
| >Code Value                                  | (0008,0100) | SRC_INSTANCE       | ALWAYS                | ALWAYS            |       |            |          |
| >Code Scheme Designator                      | (0008,0102) | SRC_INSTANCE       | ALWAYS                | ALWAYS            |       |            |          |
| >Code Meaning                                | (0008,0104) | SRC_INSTANCE       | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.1-5: General Reference Module**

| Attribute Name                   | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| <b>Referenced Image Sequence</b> | (0008,1140) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Referenced SOP Class UID        | (0008,1150) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced SOP Instance UID     | (0008,1155) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Purpose of Reference            | (0040,A170) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

| Attribute Name                      | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Code Sequence                       |             |              |                       |                   |       |            |          |
| >>Code Value                        | (0008,0100) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Scheme Designator            | (0008,0102) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                      | (0008,0104) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| <b>Referenced Instance Sequence</b> | (0008,114A) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Referenced SOP Class UID           | (0008,1150) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced SOP Instance UID        | (0008,1155) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Purpose of Reference Code Sequence | (0040,A170) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >>Code Value                        | (0008,0100) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Scheme Designator            | (0008,0102) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                      | (0008,0104) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| Derivation Description              | (0008,2111) | SRC_INSTANCE | SRC_COPY              | ALWAYS            |       |            |          |
| <b>Source Image Sequence</b>        | (0008,2112) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Referenced SOP Class UID           | (0008,1150) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced SOP Instance UID        | (0008,1155) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Purpose of Reference Code Sequence | (0040,A170) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >>Code Value                        | (0008,0100) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Scheme Designator            | (0008,0102) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                      | (0008,0104) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| <b>Derivation Code Sequence</b>     | (0008,9215) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Code Value                         | (0008,0100) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Code Scheme Designator             | (0008,0102) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Code Meaning                       | (0008,0104) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| <b>Soruce Instance Sequence</b>     | (0042,0013) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Referenced SOP Class UID           | (0008,1150) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                      | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| >Referenced SOP Instance UID        | (0008,1155) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >Purpose of Reference Code Sequence | (0040,A170) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >>Code Value                        | (0008,0100) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Scheme Designator            | (0008,0102) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                      | (0008,0104) | SRC_INSTANCE | ALWAYS                | ALWAYS            |       |            |          |
| Derivation Description              | (0008,2111) | SRC_INSTANCE | SRC_COPY              | ALWAYS            |       |            |          |

Table 7.1.1.1-6: General Acquisition Module

| Attribute Name        | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Acquisition Number    | (0020,0012) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Acquisition Date      | (0008,0022) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Acquisition Time      | (0008,0032) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Acquisition DateTime  | (0008,002A) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Irradiation Event UID | (0008,3010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

Table 7.1.1.1-7: Frame of Reference Module

| Attribute Name               | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Frame of Reference UID       | (0020,0052) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Position Reference Indicator | (0020,1040) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

Table 7.1.1.1-8: General Equipment Module

| Attribute Name                | Tag         | Source       | Presence of Attribute | Presence of Value | Value                   | Conditions | Comments |
|-------------------------------|-------------|--------------|-----------------------|-------------------|-------------------------|------------|----------|
| Manufacturer                  | (0008,0070) | FIXED        | ALWAYS                | ALWAYS            | Siemens Healthcare GmbH |            |          |
| Institution Name              | (0008,0080) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                         |            |          |
| Institution Address           | (0008,0081) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                         |            |          |
| Station Name                  | (0008,1010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                         |            |          |
| Institutional Department Name | (0008,1040) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                         |            |          |

| Attribute Name            | Tag         | Source       | Presence of Attribute | Presence of Value | Value              | Conditions | Comments |
|---------------------------|-------------|--------------|-----------------------|-------------------|--------------------|------------|----------|
| Manufacturer's Model Name | (0008,1090) | FIXED        | SRC_COPY              | SRC_COPY          | Syngo Carbon Space |            |          |
| Device Serial Number      | (0018,1000) | GENERATED    | ALWAYS                | ALWAYS            |                    |            |          |
| Software Versions         | (0018,1020) | GENERATED    | ALWAYS                | ALWAYS            | VA39A              |            |          |
| Gantry ID                 | (0018,1008) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                    |            |          |
| Spatial Resolution        | (0018,1050) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                    |            |          |
| Date of Last Calibration  | (0018,1200) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                    |            |          |
| Time of Last Calibration  | (0018,1201) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                    |            |          |
| Pixel Padding Value       | (0028,0120) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                    |            |          |

**Table 7.1.1.1-9: Image Plane Module**

| Attribute Name              | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Pixel Spacing               | (0028,0030) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Image Orientation (Patient) | (0020,0037) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Image Position (Patient)    | (0020,0032) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Slice Thickness             | (0018,0050) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Slice Location              | (0020,1041) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

**Table 7.1.1.1-10: General Image Module**

| Attribute Name               | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Instance Number              | (0020,0013) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Patient Orientation          | (0020,0020) | SRC_INSTANCE               | SRC_COPY              | SRC_COPY          |       |            |          |
| Content Date                 | (0008,0023) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Content Time                 | (0008,0033) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Image Type                   | (0008,0008) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Position Reference Indicator | (0020,1040) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Image Comments               | (0020,4000) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Frame Comments               | (0020,9158) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name          | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Frame of Reference UID  | (0020,0052) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Burned In Annotation    | (0028,0301) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Lossy Image Compression | (0028,2110) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.1-11: Image Pixel Module**

| Attribute Name                              | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Samples per Pixel                           | (0028,0002) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Photometric Interpretation                  | (0028,0004) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Rows                                        | (0028,0010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Columns                                     | (0028,0011) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Bits Allocated                              | (0028,0100) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Bits Stored                                 | (0028,0101) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| High Bit                                    | (0028,0102) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Pixel Representation                        | (0028,0103) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Planar Configuration                        | (0028,0006) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Pixel Aspect Ratio                          | (0028,0034) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Pixel Data                                  | (7FE0,0010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Smallest Image Pixel Value                  | (0028,0106) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Largest Image Pixel Value                   | (0028,0107) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Red Palette Color Lookup Table Descriptor   | (0028,1101) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Green Palette Color Lookup Table Descriptor | (0028,1103) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Blue Palette Color Lookup Table Descriptor  | (0028,1103) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Red Palette Color Lookup Table Data         | (0028,1201) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Green Palette Color Lookup Table Data       | (0028,1202) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Blue Palette Color Lookup Table Data        | (0028,1203) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

Table 7.1.1.1-12: VOI LUT Module

| Attribute Name    | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions                                           | Comments |
|-------------------|-------------|-------------------------|-----------------------|-------------------|-------|------------------------------------------------------|----------|
| >Window Width     | (0070,0002) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                      |          |
| >Window Center    | (0070,0062) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                      |          |
| >VOI LUT Sequence | (0028,3010) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present if Window Center (0028,1050) is not present. |          |
| >>LUT Descriptor  | (0028,3002) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                      |          |
| >>LUT Data        | (0028,3006) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                      |          |

Table 7.1.1.1-13: Contrast/Bolus Module

| Attribute Name                          | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments                                                                            |
|-----------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|-------------------------------------------------------------------------------------|
| Contrast / Bolus Agent                  | (0018,0010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            | NOTE: The type of used Contrast medium or UNDEFINED if no Contrast medium specified |
| Contrast / Bolus Volume                 | (0018,1041) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                                     |
| Contrast / Bolus Start Time             | (0018,1042) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                                     |
| Contrast / Bolus Stop Time              | (0018,1043) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                                     |
| Contrast / Bolus Total Dose             | (0018,1044) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                                     |
| Contrast Flow Rate                      | (0018,1046) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                                     |
| Contrast Flow Duration                  | (0018,1047) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                                     |
| Contrast / Bolus Ingredient             | (0018,1048) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                                     |
| Contrast/Bolus Ingredient Concentration | (0018,1049) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            | Note: [mg] of active ingredient per [mL] of (diluted) agent                         |

Table 7.1.1.1-14: SOP Common Module

| Attribute Name   | Tag         | Source       | Presence of Attribute | Presence of Value | Value                                | Conditions | Comments                                                                                                          |
|------------------|-------------|--------------|-----------------------|-------------------|--------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------|
| SOP Class UID    | (0008,0016) | SRC_INSTANCE | ALWAYS                | ALWAYS            | SOP Class UID of the underlying IODs |            |                                                                                                                   |
| SOP Instance UID | (0008,0018) | GENERATED    | ALWAYS                | ALWAYS            |                                      |            | Syngo Carbon Space will use the unique Product UID 1.3.12.2.1107.5.8.24 where 24 identifies the product globally. |

| Attribute Name             | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------|-------------|-------------------------|-----------------------|-------------------|-------|------------|----------|
| Specific Character Set     | (0008,0005) | SRC_INSTANCE /GENERATED | SRC_COPY              | SRC_COPY          |       |            |          |
| X Timezone Offset From UTC | (0008,0201) | SRC_INSTANCE            | SRC_COPY              | SRC_COPY          |       |            |          |

#### 7.1.1.2 Basic Text SR IOD

Table 7.1.1.2-1: Basic Text SR IOD Modules

| IE                 | Module              | Reference                        | Presence of Module |
|--------------------|---------------------|----------------------------------|--------------------|
| Patient            | Patient             | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS             |
| Study              | General Study       | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS             |
| Series             | General Series      | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS             |
|                    | SR Document Series  | <a href="#">Table 7.1.1.2-2</a>  | ALWAYS             |
| Equipment          | General Equipment   | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS             |
| SR Document        | SR Document General | <a href="#">Table 7.1.1.2-3</a>  | ALWAYS             |
|                    | SR Document Content | <a href="#">Table 7.1.1.2-4</a>  | ALWAYS             |
|                    | SOP Common          | <a href="#">Table 7.1.1.1-14</a> | ALWAYS             |
| Private Attributes | Private Attribute   | <a href="#">Table 7.1.2-1</a>    | ALWAYS             |

Table 7.1.1.2-2: SR Document Series Module

| Attribute Name      | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------|-------------|-------------------------|-----------------------|-------------------|-------|------------|----------|
| Modality            | (0008,0060) | FIXED                   | ALWAYS                | ALWAYS            | SR    |            |          |
| Series Instance UID | (0020,000E) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Series Number       | (0020,0011) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |

Table 7.1.1.2-3: SR Document General Module

| Attribute Name    | Tag          | Source                  | Presence of Attribute | Presence of Value | Value                | Conditions | Comments |
|-------------------|--------------|-------------------------|-----------------------|-------------------|----------------------|------------|----------|
| Instance Number   | (0020,0013)  | SRC_INSTANCE GENERATED  | ALWAYS                | ALWAYS            |                      |            |          |
| Completion Flag   | (0040, A491) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | PARTIAL/ COMPLETE    |            |          |
| Verification Flag | (0040, A493) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | UNVERIFIED/ VERIFIED |            |          |
| Content Date      | (0008,0023)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                      |            |          |
| Content Time      | (0008,0033)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                      |            |          |

| Attribute Name              | Tag          | Source                  | Presence of Attribute | Presence of Value | Value | Conditions                                            | Comments |
|-----------------------------|--------------|-------------------------|-----------------------|-------------------|-------|-------------------------------------------------------|----------|
| Verifying Observer Sequence | (0040, A073) | SRC_INSTANCE/ GENERATED | ALWAYS                | CONDITIONAL       |       | Present if Verification Flag (0040, A493) is VERIFIED |          |
| >Verifying Observer Name    | (0040, A075) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                       |          |
| >Verifying Organization     | (0040, A027) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                       |          |
| >Verification DateTime      | (0040, A030) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                       |          |

**Table 7.1.1.2-4: SR Document Content Module**

| Attribute Name             | Tag          | Source                  | Presence of Attribute | Presence of Value | Value                              | Conditions | Comments                                                                                      |
|----------------------------|--------------|-------------------------|-----------------------|-------------------|------------------------------------|------------|-----------------------------------------------------------------------------------------------|
| Value Type                 | (0040, A040) | FIXED                   | ALWAYS                | ALWAYS            | TEXT                               |            | "TEXT" in case of Text SR                                                                     |
| Concept Name Code Sequence | (0040, A043) | SRC_INSTANCE/ GENERATED | Conditional           | ALWAYS            |                                    |            | This is the Root Content Item<br><br>The value will be always present as value type is "TEXT" |
| >Code Value                | (0008,0100)  | GENERATED               | ALWAYS                | ALWAYS            | The identifier of the Coded Entry. |            |                                                                                               |
| >Coding Scheme Designator  | (0008,0102)  | FIXED                   | ALWAYS                | ALWAYS            | LN                                 |            |                                                                                               |
| >Code Meaning              | (0008,0104)  | FIXED                   | ALWAYS                | ALWAYS            | Diagnostic Imaging Report          |            |                                                                                               |
| Continuity Of Content      | (0040, A050) | FIXED                   | ALWAYS                | ALWAYS            | SEPARATE                           |            |                                                                                               |

### 7.1.1.3 Segmentation IOD

**Table 7.1.1.3-1: Segmentation IOD Modules**

| IE                 | Module                     | Reference                       | Presence of Module                                                                |
|--------------------|----------------------------|---------------------------------|-----------------------------------------------------------------------------------|
| Patient            | Patient                    | <a href="#">Table 7.1.1.1-1</a> | ALWAYS                                                                            |
| Study              | General Study              | <a href="#">Table 7.1.1.1-2</a> | ALWAYS                                                                            |
|                    | Patient Study              | <a href="#">Table 7.1.1.1-3</a> | CONDITIONAL: Attributes of this module are not present in case of emergency case. |
| Series             | General Series             | <a href="#">Table 7.1.1.1-4</a> | ALWAYS                                                                            |
|                    | Segmentation Series        | <a href="#">Table 7.1.1.3-5</a> | ALWAYS                                                                            |
| Frame of Reference | Frame of Reference         | <a href="#">Table 7.1.1.1-7</a> | ALWAYS                                                                            |
| Equipment          | General Equipment          | <a href="#">Table 7.1.1.1-8</a> | ALWAYS                                                                            |
|                    | Enhanced General Equipment | <a href="#">Table 7.1.1.3-5</a> | ALWAYS                                                                            |

| IE                 | Module                        | Reference                        | Presence of Module |
|--------------------|-------------------------------|----------------------------------|--------------------|
| Image              | General Image                 | <a href="#">Table 7.1.1.1-10</a> | ALWAYS             |
|                    | Image Pixel                   | <a href="#">Table 7.1.1.1-11</a> | ALWAYS             |
|                    | Segmentation Image            | <a href="#">Table 7.1.1.3-7</a>  | ALWAYS             |
|                    | Multi-frame Functional Groups | <a href="#">Table 7.1.1.3-2</a>  | ALWAYS             |
|                    | Multi-frame Dimension         | <a href="#">Table 7.1.1.3-4</a>  | ALWAYS             |
|                    | SOP Common                    | <a href="#">Table 7.1.1.1-14</a> | ALWAYS             |
| Private Attributes | Private Attribute             | <a href="#">Table 7.1.2-2</a>    | ALWAYS             |

**Table 7.1.1.3-2: Multi-frame Functional Groups Module**

| Attribute Name                                                                                            | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------------------------------------------------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Shared Functional Groups Sequence                                                                         | (5200,9229) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Please refer <a href="#">Multi-Frame Functional Group Sequences</a> Table. One or more items may present. |             |                            |                       |                   |       |            |          |
| Per-Frame Functional Groups Sequence                                                                      | (5200,9230) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Please refer <a href="#">Multi-Frame Functional Group Sequences</a> Table. One or more items may present. |             |                            |                       |                   |       |            |          |
| Instance Number                                                                                           | (0020,0013) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Content Date                                                                                              | (0008,0023) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Content Time                                                                                              | (0008,0033) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Number of Frames                                                                                          | (0028,0008) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.3-3: Multi-frame Functional Group Sequences**

| Attribute Name                  | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >Derivation Image Sequence      | (0008,9124) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Source Image Sequence         | (0008,2112) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Referenced SOP Class UID     | (0008,1150) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Referenced SOP Instance UID  | (0008,1155) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Procedure Step Code Sequence | (0040,A170) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>>Code Value                  | (0008,0100) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name               | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------------|-------------|-------------------------|-----------------------|-------------------|-------|------------|----------|
| >>>>Code Scheme Designator   | (0008,0102) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>>Code Meaning             | (0008,0104) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Derivation Code Sequence   | (0008,9215) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Code Value                | (0008,0100) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Code Scheme Designator    | (0008,0102) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Code Meaning              | (0008,0104) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Content Sequence      | (0020,9111) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Frame Acquisition DateTime | (0018,9074) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Frame Reference DateTime   | (0018,9151) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Frame Acquisition Duration | (0018,9220) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Stack ID                   | (0020,9056) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>In-Stack Position Number   | (0020,9057) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Temporal Position Index    | (0020,9128) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Dimension Index Values     | (0020,9157) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Plane Position Sequence     | (0020,9113) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Image Position Patient     | (0020,0032) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Plane Orientation Sequence  | (0020,9116) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Image Orientation Patient  | (0020,0037) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Pixel Measures Sequence     | (0028,9110) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Slice Thickness            | (0018,0050) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Spacing Between Slice      | (0018,0088) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Pixel Spacing              | (0028,0030) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                   | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >Segment Identification Sequence | (0062,000A) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Segment Identification Number  | (0062,008)  | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.3-4: Multi-frame Dimension Module**

| Attribute Name                    | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Dimension Organization Sequence   | (0020,9221) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Dimension Organization UID       | (0020,9164) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Dimension Index Sequence          | (0020,9222) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Dimension Index Pointer          | (0020,9165) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Dimension Organization UID       | (0020,9164) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Functional Group Pointer         | (0020,9167) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Functional Group Private Creator | (0020,9238) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Dimension Organization UID       | (0020,9164) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.3-5: Enhanced General Equipment Module**

| Attribute Name            | Tag         | Source | Presence of Attribute | Presence of Value | Value                | Conditions | Comments |
|---------------------------|-------------|--------|-----------------------|-------------------|----------------------|------------|----------|
| Manufacturer              | (0008,0070) | FIXED  | ALWAYS                | ALWAYS            | Siemens Healthineers |            |          |
| Manufacturer's Model Name | (0008,1090) | FIXED  | ALWAYS                | ALWAYS            | Syngo Carbon Space   |            |          |
| Device Serial Number      | (0018,1000) | FIXED  | ALWAYS                | ALWAYS            | Configured Value     |            |          |
| Software Versions         | (0018,1020) | FIXED  | ALWAYS                | ALWAYS            | VA39A                |            |          |

**Table 7.1.1.3-6: Segmentation Series Module**

| Attribute Name | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments                                                                |
|----------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|-------------------------------------------------------------------------|
| Modality       | (0008,0060) | FIXED                      | ALWAYS                | ALWAYS            | SEG   |            |                                                                         |
| Series Number  | (0020,0011) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | >1000 |            | In case of derived objects depending on the availability in the source. |

| Attribute Name                               | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments                                                                |
|----------------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|-------------------------------------------------------------------------|
| Referenced Performed Procedure Step Sequence | (0008,1111) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            | In case of derived objects depending on the availability in the source. |
| >Referenced SOP Class UID                    | (0008,1150) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                         |
| >Referenced SOP Instance UID                 | (0008,1155) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |                                                                         |

**Table 7.1.1.3-7: Segmentation Image Module**

| Attribute Name                                                           | Tag         | Source                     | Presence of Attribute | Presence of Value | Value             | Conditions | Comments |
|--------------------------------------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------------------|------------|----------|
| Image Type                                                               | (0008,0008) | FIXED                      | ALWAYS                | ALWAYS            | DERIVED / PRIMARY |            |          |
| Instance Number                                                          | (0020,0013) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                   |            |          |
| Content Label                                                            | (0070,0080) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                   |            |          |
| Samples Per Pixel                                                        | (0028,0002) | FIXED                      | ALWAYS                | ALWAYS            | 1                 |            |          |
| Photometric Interpretation                                               | (0028,0004) | FIXED                      | ALWAYS                | ALWAYS            | MONOCHROME2       |            |          |
| Pixel Representation                                                     | (0028,0103) | FIXED                      | ALWAYS                | ALWAYS            | 0                 |            |          |
| Bits Allocated                                                           | (0028,0100) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | 16                |            |          |
| Bits Stored                                                              | (0028,0101) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | 12                |            |          |
| High Bit                                                                 | (0028,0102) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | Bits Stored - 1   |            |          |
| Lossy Image Compression                                                  | (0028,2110) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                   |            |          |
| Lossy Image Compression Ratio                                            | (0028,2112) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                   |            |          |
| Lossy Image Compression Method                                           | (0028,2114) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                   |            |          |
| Segmentation Type                                                        | (0062,0001) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | BINARY            |            |          |
| Segment Sequence                                                         | (0062,0002) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                   |            |          |
| >Include <a href="#">Table 32</a> : Segment Description Macro Attributes |             |                            |                       |                   |                   |            |          |

**Table 7.1.1.3-8: Segment Description Macro Attributes**

| Attribute Name | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Segment Number | (0062,0004) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                          | Tag         | Source                     | Presence of Attribute | Presence of Value | Value                                                                                                                                            | Conditions | Comments |
|-----------------------------------------|-------------|----------------------------|-----------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|
| Segment Label                           | (0062,0005) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| Segment Description                     | (0062,0006) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| Segment Algorithm Type                  | (0062,0008) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | AUTOMATIC =<br>calculated<br>segment<br>SEMI-AUTOMATIC =<br>calculated<br>segment with<br>user assistance<br>MANUAL =<br>user-entered<br>segment |            |          |
| Segment Algorithm Name                  | (0062,0009) | SRC_INSTANCE/<br>GENERATED | CONDITIONAL           | CONDITIONAL       | Required if<br>Segment<br>Algorithm<br>Type<br>(0062,0008) is<br>not MANUAL.                                                                     |            |          |
| Segment Property Category Code Sequence | (0062,0003) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| >Code Value                             | (0008,0100) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| >Code Scheme Designator                 | (0008,0102) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| >Code Meaning                           | (0008,0104) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| Segmented Property Type Code Sequence   | (0062,000F) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| >Code Value                             | (0008,0100) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| >Code Scheme Designator                 | (0008,0102) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |
| >Code Meaning                           | (0008,0104) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                                                                                                                                  |            |          |

#### 7.1.1.4 Raw Data IOD

Table 7.1.1.4-1: Raw Data IOD Modules

| IE                 | Module              | Reference                        | Presence of Module |
|--------------------|---------------------|----------------------------------|--------------------|
| Patient            | Patient             | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS             |
| Study              | General Study       | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS             |
|                    | Patient Study       | <a href="#">Table 7.1.1.1-3</a>  | ALWAYS             |
| Series             | General Series      | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS             |
| Frame of Reference | Frame of Reference  | <a href="#">Table 7.1.1.1-7</a>  | ALWAYS             |
| Equipment          | General Equipment   | <a href="#">Table 7.1.1.1-7</a>  | ALWAYS             |
| Raw Data           | Acquisition Context | <a href="#">Table 7.1.1.8-8</a>  | ALWAYS             |
|                    | Raw Data            | <a href="#">Table 7.1.1.4-2</a>  | ALWAYS             |
|                    | SOP Common          | <a href="#">Table 7.1.1.1-14</a> | ALWAYS             |

| IE                 | Module           | Reference                       | Presence of Module |
|--------------------|------------------|---------------------------------|--------------------|
| Private Attributes | Raw Data Private | <a href="#">Table 7.1.1.4-3</a> | ALWAYS             |

**Table 7.1.1.4-2: Raw Data Module**

| Attribute Name          | Tag         | Source                     | Presence of Attribute | Presence of Value | Value                             | Conditions | Comments |
|-------------------------|-------------|----------------------------|-----------------------|-------------------|-----------------------------------|------------|----------|
| Instance Number         | (0020,0013) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                   |            |          |
| Content Date            | (0008,0023) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                   |            |          |
| Content Time            | (0008,0033) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                                   |            |          |
| Creator-<br>Version UID | (0008,9123) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | 1.3.12.2.110<br>7.5.99.3.697<br>1 |            |          |

**Table 7.1.1.4-3: Raw Data Private Module**

| Attribute Name | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Image Comments | (0020,4000) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Frame Comments | (0020,9158) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

#### 7.1.1.5 CT Image IOD

In the objects created the tag (0008,0008) Image Type will be of the value "SECONDARY/DERIVED" and may be extended by application specific values.

**Table 7.1.1.5-1: CT Image IOD Modules**

| IE                 | Module              | Reference                        | Presence of Module                                                                                             |
|--------------------|---------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------|
| Patient            | Patient             | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS                                                                                                         |
| Study              | General Study       | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS                                                                                                         |
|                    | Patient Study       | <a href="#">Table 7.1.1.1-3</a>  | CONDITIONAL: Attributes of this module are not present in case of emergency case, or when not delivered by MWL |
| Series             | General Series      | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS                                                                                                         |
| Frame of Reference | Frame of Reference  | <a href="#">Table 7.1.1.1-7</a>  | ALWAYS                                                                                                         |
| Equipment          | General Equipment   | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS                                                                                                         |
| Acquisition        | General Acquisition | <a href="#">Table 7.1.1.1-6</a>  | ALWAYS                                                                                                         |
| Image              | General Image       | <a href="#">Table 7.1.1.1-10</a> | ALWAYS                                                                                                         |
|                    | General Reference   | <a href="#">Table 7.1.1.1-5</a>  | CONDITIONAL (If present in source image)                                                                       |
|                    | Image Plane         | <a href="#">Table 7.1.1.1-9</a>  | ALWAYS                                                                                                         |
|                    | Image Pixel         | <a href="#">Table 7.1.1.1-11</a> | ALWAYS                                                                                                         |

| IE                 | Module                                      | Reference                        | Presence of Module                                                   |
|--------------------|---------------------------------------------|----------------------------------|----------------------------------------------------------------------|
|                    | Contrast/Bolus                              | <a href="#">Table 7.1.1.1-13</a> | CONDITIONAL (If present in source image)                             |
|                    | VOI LUT                                     | <a href="#">Table 7.1.1.1-12</a> | CONDITIONAL (If present in source image)                             |
|                    | CT Image                                    | <a href="#">Table 7.1.1.5-2</a>  | ALWAYS                                                               |
|                    | SOP Common                                  | <a href="#">Table 7.1.1.1-14</a> | ALWAYS                                                               |
|                    | CT Image Range Image Result                 | <a href="#">Table 7.1.1.5-3</a>  | CONDITIONAL (If the workflow is related to CT Range Image Result)    |
|                    | CT Image Snapshot Image Result              | <a href="#">Table 7.1.1.5-5</a>  | CONDITIONAL (If the workflow is related to CT Snapshot Image Result) |
|                    | CT Image Results – Vascular Analysis Ranges | <a href="#">Table 7.1.1.5-6</a>  | CONDITIONAL: (If the workflow is Vascular Analysis Ranges)           |
| Private Attributes | Private Attribute                           | <a href="#">Table 7.1.2-3</a>    | ALWAYS                                                               |

**Table 7.1.1.5-2: CT Image Module**

| Attribute Name             | Tag         | Source       | Presence of Attribute | Presence of Value | Value                           | Conditions | Comments |
|----------------------------|-------------|--------------|-----------------------|-------------------|---------------------------------|------------|----------|
| Image Type                 | (0008,0008) | GENERATED    | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-7</a> |            |          |
| Samples per Pixel          | (0028,0002) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 1                               |            |          |
| Photometric Interpretation | (0028,0004) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | MONOCHROME2                     |            |          |
| Bits Allocated             | (0028,0100) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 16                              |            |          |
| Bits Stored                | (0028,0101) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 16                              |            |          |
| High Bit                   | (0028,0102) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 15                              |            |          |
| Rescale Intercept          | (0028,1052) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | -8192                           |            |          |
| Rescale Slope              | (0028,1053) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 1                               |            |          |
| Rescale Type               | (0028,1054) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | US                              |            |          |
| KVP                        | (0018,0060) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                                 |            |          |
| Acquisition Number         | (0020,0012) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                                 |            |          |

**Table 7.1.1.5-3: CT Image Range Image Result Module**

| Attribute Name             | Tag         | Source    | Presence of Attribute | Presence of Value | Value                           | Conditions | Comments |
|----------------------------|-------------|-----------|-----------------------|-------------------|---------------------------------|------------|----------|
| Image Type                 | (0008,0008) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-8</a> |            |          |
| Rescale Intercept          | (0028,1052) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-8</a> |            |          |
| Rescale Slope              | (0028,1053) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-8</a> |            |          |
| Rescale Type               | (0028,1054) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-8</a> |            |          |
| Photometric Interpretation | (0028,0004) | GENERATED | ALWAYS                | ALWAYS            | MONOCHROME2                     |            |          |
| Bits Allocated             | (0028,0100) | GENERATED | ALWAYS                | ALWAYS            | 16                              |            |          |
| Bits Stored                | (0028,0101) | GENERATED | ALWAYS                | ALWAYS            | 12                              |            |          |
| High Bit                   | (0028,0102) | GENERATED | ALWAYS                | ALWAYS            | Bits Stored - 1                 |            |          |
| Samples per pixel          | (0028,0002) | GENERATED | ALWAYS                | ALWAYS            | 1                               |            |          |

**Table 7.1.1.5-4: Values and Code Sets for CT Image Snapshot Image Result**

| Attribute Name    | Tag         | Value/Code                                 | Condition | Comments |
|-------------------|-------------|--------------------------------------------|-----------|----------|
| Image Type        | (0008,0008) | DERIVED (Value 1)                          |           |          |
|                   |             | SECONDARY (Value 2)                        |           |          |
|                   |             | AXIAL (Value 3)                            |           |          |
| Image Type        | (0008,0008) | MPR / MPR THICK / MIP / MIP THIN (Value 4) |           |          |
|                   |             | PARALLEL / RADIAL / RADIALSLICED (Value 5) |           |          |
| Rescale Intercept | (0028,1052) | -8192                                      |           |          |
| Rescale Slope     | (0028,1053) | 1                                          |           |          |
| Rescale Type      | (0028,1054) | US                                         |           |          |
| Bits Stored       | (0028,0101) | 16                                         |           |          |
| Image Type        | (0008,0008) | MPR / MPR THICK / MIP / MIP THIN (Value 4) |           |          |
|                   |             | PARALLEL / RADIAL / RADIALSLICED (Value 5) |           |          |
| Rescale Intercept | (0028,1052) | -1024                                      |           |          |
| Rescale Slope     | (0028,1053) | 1                                          |           |          |
| Rescale Type      | (0028,1054) | US                                         |           |          |
| Bits Stored       | (0028,0101) | 12                                         |           |          |

**Table 7.1.1.5-5: CT Image Snapshot Image Result Module**

| Attribute Name             | Tag         | Source    | Presence of Attribute | Presence of Value | Value                           | Conditions | Comments |
|----------------------------|-------------|-----------|-----------------------|-------------------|---------------------------------|------------|----------|
| Image Type                 | (0008,0008) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-4</a> |            |          |
| Rescale Intercept          | (0028,1052) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-4</a> |            |          |
| Rescale Slope              | (0028,1053) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-4</a> |            |          |
| Rescale Type               | (0028,1054) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-4</a> |            |          |
| Photometric Interpretation | (0028,0004) | GENERATED | ALWAYS                | ALWAYS            | MONOCHROME2                     |            |          |
| Bits Allocated             | (0028,0100) | GENERATED | ALWAYS                | ALWAYS            | 16                              |            |          |
| Bits Stored                | (0028,0101) | GENERATED | ALWAYS                | ALWAYS            | 12                              |            |          |
| High Bit                   | (0028,0102) | GENERATED | ALWAYS                | ALWAYS            | Bits Stored - 1                 |            |          |
| Samples per pixel          | (0028,0002) | GENERATED | ALWAYS                | ALWAYS            | 1                               |            |          |

**Table 7.1.1.5-6: CT Image Results – Vascular Analysis Ranges Image workflow**

| Attribute Name | Tag         | Source    | Presence of Attribute | Presence of Value | Value                           | Conditions | Comments |
|----------------|-------------|-----------|-----------------------|-------------------|---------------------------------|------------|----------|
| Image Type     | (0008,0008) | GENERATED | ALWAYS                | ALWAYS            | <a href="#">Table 7.1.1.5-7</a> |            |          |

**Table 7.1.1.5-7: Values and Code Sets for CT Image Result in CT Vascular Analysis Ranges**

| Attribute Name | Tag         | Value/Code | Condition         | Comments |
|----------------|-------------|------------|-------------------|----------|
| Image Type     | (0008,0008) | DERIVED    | Value for Value 1 |          |
|                |             | SECONDARY  | Value for Value 2 |          |
|                |             | AXIAL      | Value for Value 3 |          |

| Attribute Name | Tag | Value/Code  | Condition         | Comments |
|----------------|-----|-------------|-------------------|----------|
|                |     | LCAD SERIES | Value for Value 4 |          |

**Table 7.1.1.5-8: Values and Code Sets for CT Image Range Image Result**

| Attribute Name    | Tag         | Value/Code                                 | Condition | Comments |
|-------------------|-------------|--------------------------------------------|-----------|----------|
| Image Type        | (0008,0008) | DERIVED (Value 1)                          |           |          |
|                   |             | SECONDARY (Value 2)                        |           |          |
|                   |             | AXIAL (Value 3)                            |           |          |
| Image Type        | (0008,0008) | MPR / MPR THICK / MIP / MIP THIN (Value 4) |           |          |
|                   |             | PARALLEL / RADIAL / RADIALSLICED (Value 5) |           |          |
| Rescale Intercept | (0028,1052) | -8192                                      |           |          |
| Rescale Slope     | (0028,1053) | 1                                          |           |          |
| Rescale Type      | (0028,1054) | US                                         |           |          |
| Bits Stored       | (0028,0101) | 16                                         |           |          |
| Image Type        | (0008,0008) | MPR / MPR THICK / MIP / MIP THIN (Value 4) |           |          |
|                   |             | PARALLEL / RADIAL / RADIALSLICED (Value 5) |           |          |
| Rescale Intercept | (0028,1052) | -1024                                      |           |          |
| Rescale Slope     | (0028,1053) | 1                                          |           |          |
| Rescale Type      | (0028,1054) | US                                         |           |          |
| Bits Stored       | (0028,0101) | 12                                         |           |          |

#### 7.1.1.6 MR Image IOD

In the objects created the tag (0008,0008) Image Type will be of the value "SECONDARY/DERIVED" and may be extended by application specific values.

**Table 7.1.1.6-1: MR Image IOD Modules**

| IE                 | Module             | Reference                        | Presence of Module                       |
|--------------------|--------------------|----------------------------------|------------------------------------------|
| Patient            | Patient            | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS                                   |
| Study              | General Study      | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS                                   |
|                    | Patient Study      | <a href="#">Table 7.1.1.1-3</a>  | ALWAYS                                   |
| Series             | General Series     | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS                                   |
| Frame of Reference | Frame of Reference | <a href="#">Table 7.1.1.1-7</a>  | ALWAYS                                   |
| Equipment          | General Equipment  | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS                                   |
| Image              | General Image      | <a href="#">Table 7.1.1.1-10</a> | ALWAYS                                   |
|                    | General Reference  | <a href="#">Table 7.1.1.1-5</a>  | CONDITIONAL                              |
|                    | Image Plane        | <a href="#">Table 7.1.1.1-9</a>  | ALWAYS                                   |
|                    | Image Pixel        | <a href="#">Table 7.1.1.1-11</a> | ALWAYS                                   |
|                    | Contrast/Bolus     | <a href="#">Table 7.1.1.1-13</a> | CONDITIONAL (If present in source image) |
|                    | MR Image           | <a href="#">Table 7.1.1.6-2</a>  | ALWAYS                                   |
|                    | VOI LUT            | <a href="#">Table 7.1.1.1-12</a> | ALWAYS                                   |
|                    | SOP Common         | <a href="#">Table 7.1.1.1-14</a> | ALWAYS                                   |
| Private Attributes | Private Attributes | <a href="#">Table 7.1.2-3</a>    | ALWAYS                                   |

**Table 7.1.1.6-2: MR Image Module**

| Attribute Name                    | Tag         | Source       | Presence of Attribute | Presence of Value | Value           | Conditions | Comments |
|-----------------------------------|-------------|--------------|-----------------------|-------------------|-----------------|------------|----------|
| Image Type                        | (0008,0008) | GENERATED    | ALWAYS                | ALWAYS            |                 |            |          |
| Samples per Pixel                 | (0028,0002) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Photometric Interpretation        | (0028,0004) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Bits Allocated                    | (0028,0100) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 16              |            |          |
| Bits Stored                       | (0028,0101) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 16              |            |          |
| High Bit                          | (0028,0102) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | Bits Stored - 1 |            |          |
| Scanning Sequence                 | (0018,0020) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Sequence Variant                  | (0018,0021) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Scan Options                      | (0018,0022) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| MR Acquisition Type               | (0018,0023) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Repetition Time                   | (0018,0080) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Echo Time                         | (0018,0081) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Echo Train Length                 | (0018,0091) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Inversion Time                    | (0018,0082) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Trigger Time                      | (0018,1060) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Irradiation Event UID             | (0008,3010) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Real World Value Mapping Sequence | (0040,9096) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |

### 7.1.1.7 Secondary Capture Image IOD

**Table 7.1.1.7-1: Secondary Capture Image IOD Modules**

| IE                 | Module              | Reference                        | Presence of Module |
|--------------------|---------------------|----------------------------------|--------------------|
| Patient            | Patient             | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS             |
| Study              | General Study       | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS             |
|                    | Patient Study       | <a href="#">Table 7.1.1.1-3</a>  | ALWAYS             |
| Series             | General Series      | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS             |
| Frame of Reference | Frame of Reference  | <a href="#">Table 7.1.1.1-7</a>  | ALWAYS             |
| Equipment          | General Equipment   | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS             |
|                    | SC Equipment        | <a href="#">Table 7.1.1.7-2</a>  | ALWAYS             |
| Acquisition        | General Acquisition | <a href="#">Table 7.1.1.1-6</a>  | ALWAYS             |
| Image              | General Image       | <a href="#">Table 7.1.1.1-10</a> | ALWAYS             |
|                    | General Reference   | <a href="#">Table 7.1.1.1-5</a>  | ALWAYS             |
|                    | Image Pixel         | <a href="#">Table 7.1.1.1-11</a> | ALWAYS             |
|                    | SC Image            | <a href="#">Table 7.1.1.7-3</a>  | ALWAYS             |

| IE                 | Module                     | Reference                        | Presence of Module |
|--------------------|----------------------------|----------------------------------|--------------------|
| Private Attributes | SOP Common                 | <a href="#">Table 7.1.1.1-14</a> | ALWAYS             |
|                    | VOI LUT                    | <a href="#">Table 7.1.1.1-12</a> | CONDITIONAL        |
|                    | Siemens Syngo Parked Views | <a href="#">Table 7.1.1.7-4</a>  | CONDITIONAL        |
|                    | Private Attributes         | <a href="#">Table 7.1.2-3</a>    | ALWAYS             |

**Table 7.1.1.7-2: SC Equipment Module**

| Attribute Name                             | Tag         | Source                     | Presence of Attribute | Presence of Value | Value                | Conditions | Comments |
|--------------------------------------------|-------------|----------------------------|-----------------------|-------------------|----------------------|------------|----------|
| Conversion Type                            | (0008,0064) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | WSD                  |            |          |
| Secondary Capture Device ID                | (0018,1010) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | Syngo Carbon Space   |            |          |
| Secondary Capture Device Manufacturer      | (0018,1016) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | Siemens Healthineers |            |          |
| Secondary Capture Device Software Versions | (0018,1019) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | VA39A                |            |          |

**Table 7.1.1.7-3: SC Image Module**

| Attribute Name            | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Date of Secondary Capture | (0018,1012) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Time of Secondary Capture | (0018,1014) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.7-4: Siemens Syngo Parked Views Module**

| Attribute Name                             | Tag                                    | VR | VM | Contains PHI | Presence of Value  | Conditions                                                                                                                                                                                 | Description                                                    |
|--------------------------------------------|----------------------------------------|----|----|--------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Parked Views Name                          | (0033, SIEMENS SYNGO PARKED VIEWS, 00) | LO | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Name of the created parked view                                |
| Parked Views Description                   | (0033, SIEMENS SYNGO PARKED VIEWS, 01) | LO | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Description of the created parked view                         |
| Parked Views State Version                 | (0033, SIEMENS SYNGO PARKED VIEWS, 02) | SH | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Version of the parked view state format e.g "1.0"              |
| Parked Views Presentation States DataSets  | (0033, SIEMENS SYNGO PARKED VIEWS, 03) | SQ | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Sequence containing presentation state for each presentation   |
| Parked Views Application Name              | (0033, SIEMENS SYNGO PARKED VIEWS, 04) | LO | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Name of the application in which parked view was created       |
| Parked Views Application Version           | (0033, SIEMENS SYNGO PARKED VIEWS, 05) | LO | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Version of the application in which parked view was created    |
| Parked Views Application States            | (0033, SIEMENS SYNGO PARKED VIEWS, 06) | SQ | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Sequence containing serialized state of the runtime components |
| Parked Views Layout State                  | (0033, SIEMENS SYNGO PARKED VIEWS, 07) | UT | 1  | SAFE         | VALUE_ ALWAYS      |                                                                                                                                                                                            | Serialized state of the layout                                 |
| Parked Views Application State Identifier  | (0033, SIEMENS SYNGO PARKED VIEWS, 51) | LO | 1  | SAFE         | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 52) is present                                                                                                                                          | Identifier of the application component                        |
| Parked Views Application State             | (0033, SIEMENS SYNGO PARKED VIEWS, 52) | OB | 1  | SAFE         | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 51) is present                                                                                                                                          | Serialized state of the application component                  |
| Parked Views Presentation State Identifier | (0033, SIEMENS SYNGO PARKED VIEWS, 71) | LO | 1  | SAFE         | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 72),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 73),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 74),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 75)<br>are all present | Identifier of the presentation state                           |
| Parked Views Presentation State            | (0033, SIEMENS SYNGO PARKED VIEWS, 72) | SQ | 1  | SAFE         | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 71),<br>(0033, SIEMENS SYNGO PARKED                                                                                                                     | Sequence contains DICOM presentation state object              |

| Attribute Name                  | Tag                                    | VR | VM | Contains PHI | Presence of Value  | Conditions                                                                                                                                                                                 | Description                                                         |
|---------------------------------|----------------------------------------|----|----|--------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
|                                 |                                        |    |    |              |                    | VIEWS, 73),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 74),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 75)<br>are all present                                                                        |                                                                     |
| Parked Views Offset             | (0033, SIEMENS SYNGO PARKED VIEWS, 73) | IS | 1  | NO           | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 71),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 72),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 74),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 75)<br>are all present | Offset used for the ordering of the presentations within the layout |
| Parked Views Data               | (0033, SIEMENS SYNGO PARKED VIEWS, 74) | SQ | 1  | SAFE         | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 71),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 72),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 73),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 75)<br>are all present | Sequence containing identification of the displayed data            |
| Parked Views Visualization Data | (0033, SIEMENS SYNGO PARKED VIEWS, 75) | UT | 1  | SAFE         | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 71),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 72),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 73),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 74)<br>are all present | Visualization properties not stored in presentation state           |
| Parked Views Overlay Index      | (0033, SIEMENS SYNGO PARKED VIEWS, 90) | IS | 1  | SAFE         | VALUE_ CONDITIONAL | (0033, SIEMENS SYNGO PARKED VIEWS, 91) and<br>(0033, SIEMENS SYNGO PARKED VIEWS, 92)<br>are present                                                                                        | Determine whether data are base or overlay                          |

| Attribute Name                              | Tag                                    | VR | VM | Contains<br>PHI | Presence<br>of Value | Conditions                                                                                                                                                    | Description                            |
|---------------------------------------------|----------------------------------------|----|----|-----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Parked Views Study Uid                      | (0033, SIEMENS SYNGO PARKED VIEWS, 91) | UI | 1  | SAFE            | VALUE_ CONDITIONAL   | (0033, SIEMENS SYNGO PARKED VIEWS, 90) and<br>(0033, SIEMENS SYNGO PARKED VIEWS, 92)<br>are present                                                           | Study UID of the displayed study       |
| Parked Views Series Uid                     | (0033, SIEMENS SYNGO PARKED VIEWS, 92) | UI | 1  | SAFE            | VALUE_ CONDITIONAL   | (0033, SIEMENS SYNGO PARKED VIEWS, 90) and<br>(0033, SIEMENS SYNGO PARKED VIEWS, 91)<br>are present                                                           | Series UID of the displayed series     |
| Parked Views Instance Uid                   | (0033, SIEMENS SYNGO PARKED VIEWS, 93) | UI | 1  | SAFE            | VALUE_ CONDITIONAL   | (0033, SIEMENS SYNGO PARKED VIEWS, 95) and<br>(0033, SIEMENS SYNGO PARKED VIEWS, 96)<br>are not present                                                       | Instance UID of the displayed instance |
| Parked Views Frame Number                   | (0033, SIEMENS SYNGO PARKED VIEWS, 94) | IS | 1  | SAFE            | VALUE_ CONDITIONAL   | (0033, SIEMENS SYNGO PARKED VIEWS, 93) is present and<br>(0033, SIEMENS SYNGO PARKED VIEWS, 95),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 6)<br>are not present  | Frame Number                           |
| Parked Views Volume Source Frames Hash Code | (0033, SIEMENS SYNGO PARKED VIEWS, 95) | LT | 1  | SAFE            | VALUE_ CONDITIONAL   | (0033, SIEMENS SYNGO PARKED VIEWS, 96) is present and<br>(0033, SIEMENS SYNGO PARKED VIEWS, 93),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 94)<br>are not present | Hash Code of the volume                |
| Parked Views Volume Representation          | (0033, SIEMENS SYNGO PARKED VIEWS, 95) | LT | 1  | SAFE            | VALUE_ CONDITIONAL   | (0033, SIEMENS SYNGO PARKED VIEWS, 95) is present and<br>(0033, SIEMENS SYNGO PARKED VIEWS, 93),<br>(0033, SIEMENS SYNGO PARKED VIEWS, 94)<br>are not present | Volume representation                  |

### 7.1.1.8 Enhanced MR Image IOD

In the objects created the tag (0008,0008) Image Type will be of the value "SECONDARY/DERIVED" and may be extended by application specific values.

**Table 7.1.1.8-1: Enhanced MR Image IOD Modules**

| IE                         | Module                                  | Reference                        | Presence of Module                                                                   |
|----------------------------|-----------------------------------------|----------------------------------|--------------------------------------------------------------------------------------|
| Patient                    | Patient                                 | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS                                                                               |
| Study                      | General Study                           | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS                                                                               |
|                            | Patient Study                           | <a href="#">Table 7.1.1.1-3</a>  | CONDITIONAL(In case of derived objects depending on the availability in the source.) |
| Series                     | General Series                          | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS                                                                               |
|                            | MR Series                               | <a href="#">Table 7.1.1.8-2</a>  | ALWAYS                                                                               |
| Frame Of Reference         | Frame of Reference                      | <a href="#">Table 7.1.1.1-7</a>  | ALWAYS                                                                               |
| Equipment                  | General Equipment                       | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS                                                                               |
|                            | Enhanced General Equipment              | <a href="#">Table 7.1.1.3-4</a>  | ALWAYS                                                                               |
| Image                      | Image Pixel                             | <a href="#">Table 7.1.1.1-11</a> | ALWAYS                                                                               |
|                            | Enhanced Contrast/Bolus                 | <a href="#">Table 7.1.1.8-3</a>  | CONDITIONAL (Depending on the availability in the source.)                           |
|                            | Multi-frame Functional Groups           | <a href="#">Table 7.1.1.8-4</a>  | ALWAYS                                                                               |
|                            | Multi-frame Dimension                   | <a href="#">Table 7.1.1.3-4</a>  | ALWAYS                                                                               |
|                            | Acquisition Context                     | <a href="#">Table 7.1.1.8-8</a>  | ALWAYS                                                                               |
|                            | Enhanced MR Image                       | <a href="#">Table 7.1.1.8-9</a>  | ALWAYS                                                                               |
|                            | SOP Common                              | <a href="#">Table 7.1.1.1-14</a> | ALWAYS                                                                               |
|                            | Common Instance Reference               | <a href="#">Table 7.1.1.12-4</a> | ALWAYS                                                                               |
| Standard Extension Modules | Cardiac Synchronization                 | <a href="#">Table 7.1.1.13-2</a> | CONDITIONAL (In case of cardiac triggering)                                          |
|                            | Respiratory Synchronization             | <a href="#">Table 7.1.1.13-3</a> | CONDITIONAL (In case of respiratory triggering)                                      |
|                            | Bulk Motion Synchronization             | <a href="#">Table 7.1.1.13-4</a> | CONDITIONAL (In case of bulk motion triggering)                                      |
|                            | Supplemental Palette Color Lookup Table | <a href="#">Table 7.1.1.8-7</a>  | CONDITIONAL (In case of Color LUTs)                                                  |
| Private Attributes         | Private Attributes                      | <a href="#">Table 7.1.2-3</a>    | ALWAYS                                                                               |

**Table 7.1.1.8-2: MR Series Module**

| Attribute Name | Tag         | Source | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------|-------------|--------|-----------------------|-------------------|-------|------------|----------|
| Modality       | (0008,0060) | FIXED  | ALWAYS                | ALWAYS            | MR    |            |          |

**Table 7.1.1.8-3: Enhanced Contrast / Bolus Module**

| Attribute Name                | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Contrast/Bolus Agent Sequence | (0018,0012) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

| Attribute Name                                | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| >Contrast/Bolus Agent Number                  | (0018,9337) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Contrast/Bolus Administration Route Sequence | (0018,0014) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Contrast/Bolus Ingredient Code Sequence      | (0018,9338) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Contrast/Bolus Volume                        | (0018,1041) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| >Contrast/Bolus Ingredient Concentration      | (0018,1049) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

**Table 7.1.1.8-4: Multi-frame Functional Groups Module**

| Attribute Name                                                               | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------------------------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Shared Functional Groups Sequence                                            | (5200,9229) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Include one or more Functional Group Macros <a href="#">Table-7.1.1.8-5</a> |             |                            |                       |                   |       |            |          |
| Per-Frame Functional Groups Sequence                                         | (5200,9230) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Include one or more Functional Group Macros <a href="#">Table-7.1.1.8-5</a> |             |                            |                       |                   |       |            |          |
| Instance Number                                                              | (0020,0013) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Content Date                                                                 | (0008,0023) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Content Time                                                                 | (0008,0033) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Number of Frames                                                             | (0028,0008) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.8-5: Functional Group Macros**

| Attribute Name          | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Pixel Measures Sequence | (0028,9110) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Pixel Spacing          | (0018,0030) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Slice Thickness        | (0028,0050) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Plane Position Sequence | (0020,9113) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Image Position Patient | (0020,0032) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                              | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| <b>Frame Content Sequence</b>               | (0020,9111) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Acquisition Number                   | (0020,9156) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Reference Date Time                  | (0018,9151) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Acquisition Date Time                | (0018,9074) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Acquisition Duration                 | (0018,9220) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Dimension Index Values                     | (0020,9157) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Temporal Position Index                    | (0020,9128) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Stack ID                                   | (0020,9056) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >In-Stack Position Number                   | (0020,9057) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Comments                             | (0020,9158) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Plane Position Sequence</b>              | (0020,9116) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Image Orientation (Patient)                | (0020,0037) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Respiratory Synchronization Sequence</b> | (0020,9253) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Nominal Percentage of Respiratory Phase    | (0020,9245) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Starting Respiratory Amplitude             | (0020,9256) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Starting Respiratory Phase                 | (0020,9247) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Ending Respiratory Amplitude               | (0020,9248) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Ending Respiratory Phase                   | (0020,9249) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Respiratory Interval Time                  | (0020,9254) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Nominal Respiratory Trigger Delay Time     | (0020,9255) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Actual Respiratory                         | (0020,9257) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                        | Tag          | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------------------|--------------|-------------------------|-----------------------|-------------------|-------|------------|----------|
| Trigger Delay Time                    |              |                         |                       |                   |       |            |          |
| <b>Temporal Position Sequence</b>     | (0020,9310)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Temporal Position Time Offset        | (0020,930D)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Referenced Image Sequence</b>      | (0008,1140)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced SOP Class UID             | (0008,1150)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced SOP Instance UID          | (0008,1155)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced Frame Number              | (0008,1160)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Purpose of Referenced Code Sequence  | (0040, A170) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Value                          | (0008,0100)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Coding Scheme Designator            | (0008,0102)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                        | (0008,0104)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Derivation Image Sequence</b>      | (0008,9124)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Derivation Code Sequence             | (0008,9215)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Value                          | (0008,0100)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Coding Scheme Designator            | (0008,0102)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                        | (0008,0104)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Source Image Sequence                | (0008,2112)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Referenced SOP Class UID            | (0008,1150)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Referenced SOP Instance UID         | (0008,1155)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Referenced Frame Number             | (0008,1160)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Purpose of Referenced Code Sequence | (0040, A170) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Code Value                         | (0008,0100)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>>Coding Scheme Designator           | (0008,0102)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                                | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >>>Code Meaning                               | (0008,0104) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Cardiac Synchronization Sequence</b>       | (0018,9118) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Nominal Percentage of Cardiac Phase          | (0020,9241) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Nominal Cardiac Trigger Delay Time           | (0020,9153) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Actual Cardiac Trigger Delay Time            | (0020,9252) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Nominal Cardiac Trigger Time Prior to R-peak | (0020,9154) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Actual Cardiac Trigger Time Prior to R-peak  | (0020,9155) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Intervals Acquired                           | (0018,1083) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Intervals Rejected                           | (0018,1084) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Heart Rate                                   | (0018,1088) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >R-R Interval Time Nominal                    | (0020,9251) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Low R-R Value                                | (0018,1081) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >High R-R Value                               | (0018,1082) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Frame Anatomy Sequence</b>                 | (0020,9071) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Laterality                             | (0020,9072) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Anatomic Region Sequence                     | (0008,2218) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Value                                  | (0008,0100) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Coding Scheme Designator                    | (0008,0102) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                                | (0008,0104) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Pixel Value Transformation Sequence</b>    | (0028,9145) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Rescale Intercept                            | (0028,1052) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Rescale Slope                                | (0028,1053) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Rescale Type                                 | (0028,1054) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                           | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
|                                          |             | GENERATED                  |                       |                   |       |            |          |
| <b>Frame VOI LUT Sequence</b>            | (0028,9132) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Window Center                           | (0028,1050) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Window Width                            | (0028,1051) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Real World Value Mapping Sequence</b> | (0040,9096) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Real World Value Intercept              | (0040,9224) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Real World Value Slope                  | (0040,9225) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Measurement Units Code Sequence         | (0040,08EA) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Value                             | (0008,0100) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Coding Scheme Designator               | (0008,0102) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Code Meaning                           | (0008,0104) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Contrast/Bolus Usage Sequence</b>     | (0018,9341) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Contrast/Bolus Agent Number             | (0018,9337) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Contrast/Bolus Agent Administered       | (0018,9342) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Contrast/Bolus Agent Detected           | (0018,9343) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Contrast/Bolus Agent Phase              | (0018,9344) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>Functional MR Sequence</b>            | (0018,9621) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Functional Scale Pulse                  | (0018,9623) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Setting Phase Frame                     | (0018,9624) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Image Frame Type Sequence</b>      | (0018,9226) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Frame Type                              | (0008,9007) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Pixel Presentation                      | (0008,9205) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Volumetric Properties                   | (0008,9206) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Volume Based Calculation Technique      | (0008,9207) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                                   | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|--------------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >Complex Image Component                         | (0008,9208) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Acquisition Contrast                            | (0008,9209) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Functional Settling Phase Frames Present        | (0018,9622) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Timing and Related Parameters Sequence</b> | (0018,9112) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Repetition Time                                 | (0018,0080) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Flip Angle                                      | (0018,1314) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Echo Train Length                               | (0018,0091) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >RF Echo Train Length                            | (0018,9240) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Gradient Echo Train Length                      | (0018,9241) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Specific Absorption Rate Sequence               | (0018,9239) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Specific Absorption Rate Definition            | (0018,9179) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Specific Absorption Rate Value                 | (0018,9181) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Gradient Output Type*                           | (0018,9180) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Gradient Output*                                | (0018,9182) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Operation Mode Sequence*                        | (0018,9176) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Operating Mode Type                            | (0018,9177) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Operating Mode                                 | (0018,9178) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR FOV/Geometry Sequence</b>                  | (0018,9125) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >In-plane Phase Encoding Direction               | (0018,1312) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >MR Acquisition Frequency Encoding Steps         | (0018,9058) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >MR Acquisition Phase Encoding Steps in-plane    | (0018,9231) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >MR Acquisition Phase Encoding                   | (0018,9232) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                          | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Steps out-of-plane                      |             |                            |                       |                   |       |            |          |
| >Percent Sampling                       | (0018,0093) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Percent Phase Field of View            | (0018,0094) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Metabolic Map Sequence</b>        | (0018,9152) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Metabolic Map Description              | (0018,9080) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Echo Sequence</b>                 | (0018,9114) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Echo Number(s)                         | (0018,0086) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Effective Echo Time                    | (0018,9082) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Modifier Sequence</b>             | (0018,9115) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Inversion Recovery                     | (0018,9009) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Inversion Times                        | (0018,9079) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Flow Compensation                      | (0018,9010) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Flow Compensation Direction            | (0018,9183) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Spoiling                               | (0018,9016) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >T2 Preparation                         | (0018,9021) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Spectrally Selected Excitation         | (0018,9026) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Spatial Pre-saturation                 | (0018,9027) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Partial Fourier                        | (0018,9081) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Partial Fourier Direction              | (0018,9036) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Parallel Acquisition                   | (0018,9077) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Parallel Acquisition Technique         | (0018,9078) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Parallel Reduction Factor In-plane     | (0018,9069) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Parallel Reduction Factor out-of-plane | (0018,9155) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Imaging Modifier Sequence</b>     | (0018,9006) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                   | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >Magnetization Transfer          | (0018,9020) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Blood Signal Nulling            | (0018,9022) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Tagging                         | (0018,9028) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Tag Spacing First Dimension     | (0018,9030) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Tag Spacing Second Dimension    | (0018,9218) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Tag Angle First Axis            | (0018,9019) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Tag Angle Second Axis           | (0018,9219) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Tag Thickness                   | (0018,9035) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Tagging Delay                   | (0018,9184) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Transmitter Frequency           | (0018,9098) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Pixel Bandwidth                 | (0018,0095) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Receive Coil Sequence</b>  | (0018,9042) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Receive Coil Name               | (0018,1250) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Receive Coil Manufacturer Name  | (0018,9041) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Receive Coil Type               | (0018,9043) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Quadrature Receive Coil         | (0018,9044) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Multi-Coil Definition Sequence  | (0018,9045) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Multi-Coil Element Name        | (0018,9047) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Multi-Coil Element Used        | (0018,9048) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Transmit Coil Sequence</b> | (0018,9049) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Transmit Coil Name              | (0018,1251) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Transmit Coil Manufacturer Name | (0018,9050) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Transmit Coil Type              | (0018,9051) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Diffusion Sequence</b>     | (0018,9117) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                            | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >Diffusion b-value                        | (0018,9087) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Diffusion Directionality                 | (0018,9075) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Diffusion Gradient Direction Sequence    | (0018,9076) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Diffusion Gradient Orientation          | (0018,9089) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Diffusion b-matrix Sequence              | (0018,9601) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Diffusion b-value XX                    | (0018,9602) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Diffusion b-value XY                    | (0018,9603) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Diffusion b-value XZ                    | (0018,9604) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Diffusion b-value YY                    | (0018,9605) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Diffusion b-value YZ                    | (0018,9606) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Diffusion b-value ZZ                    | (0018,9607) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Averages Sequence</b>               | (0018,9119) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Number of Averages                       | (0018,0083) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Velocity Encoding Sequence</b>      | (0018,9197) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Velocity Encoding Direction              | (0018,9090) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Velocity Encoding Minimum Value          | (0018,9091) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Velocity Encoding Maximum Value          | (0018,9217) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| <b>MR Arterial Spin Labeling Sequence</b> | (0018,9251) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASL Technique Description                | (0018,9252) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASL Context                              | (0018,9257) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASL Slab Sequence                        | (0018,9260) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>ASL Slab Number                         | (0018,9253) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>ASL Slab Thickness                      | (0018,9254) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                    | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >>ASL Slab Orientation            | (0018,9255) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>ASL Mid Slab Position           | (0018,9256) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>ASL Pulse Train Duration        | (0018,9258) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASL Crusher Flag                 | (0018,9259) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASL Crusher Flow Limit           | (0018,925A) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASL Crusher Description          | (0018,925B) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASLBolus Cut-off Flag            | (0018,925C) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >ASLBolus Cut-off Timing Sequence | (0018,925D) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>ASL Bolus Cut-off Delay Time    | (0018,925F) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>ASL Bolus Cut-off Technique     | (0018,925E) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

\*Specific Absorption Rate Sequence, Gradient Output Type, Gradient Output, and Operating Mode Sequence are not set for GRASP reconstructed images due to technical reasons. The values can be found in the related preview images of the GRASP acquisition.

**Table 7.1.1.8-6: Multi-frame Dimension Module**

| Attribute Name                   | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions                                                                                               | Comments |
|----------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|----------------------------------------------------------------------------------------------------------|----------|
| Dimension Organization Sequence  | (0020,9221) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                          |          |
| >Dimension Organization UID      | (0020,9164) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                          |          |
| Dimension Index Sequence         | (0020,9222) | SRC_INSTANCE/<br>GENERATED | CONDITIONAL           | ALWAYS            |       | Present if Dimension Organization Type (0020,9311) is absent or not TILED_FULL.                          |          |
| >Dimension Index Pointer         | (0020,9165) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                          |          |
| >Dimension Index Private Creator | (0020,9213) | SRC_INSTANCE/<br>GENERATED | CONDITIONAL           | ALWAYS            |       | Present if the Dimension Index Pointer (0020,9165) value is the Data Element Tag of a Private Attribute. |          |
| >Dimension Organization UID      | (0020,9164) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                          |          |

**Table 7.1.1.8-7: Supplemental Palette Color Lookup Table Module**

| Attribute Name                              | Tag         | Source                 | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------------------------|-------------|------------------------|-----------------------|-------------------|-------|------------|----------|
| Red Palette Color Lookup Table Descriptor   | (0028,1101) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Green Palette Color Lookup Table Descriptor | (0028,1102) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Blue Palette Color Lookup Table Descriptor  | (0028,1103) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Red Palette Color Lookup Table Data         | (0028,1201) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Green Palette Color Lookup Table Data       | (0028,1202) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Blue Palette Color Lookup Table Data        | (0028,1203) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.8-8: Acquisition Context Module**

| Attribute Name                   | Tag          | Source                 | Presence of Attribute | Presence of Value | Value | Conditions                                                            | Comments |
|----------------------------------|--------------|------------------------|-----------------------|-------------------|-------|-----------------------------------------------------------------------|----------|
| Acquisition Context Sequence     | (0040,0555)  | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |
| >Referenced SOP Sequence         | (0008,1199)  | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Presence if Value Type (0040,A040) is COMPOSITE or IMAGE or WAVEFORM. |          |
| >>Referenced SOP Class UID       | (0008,1150)  | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |
| >>Referenced SOP Instance UID    | (0008,1155)  | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |
| >Measurement Units Code Sequence | (0040,08EA)  | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Presence if Value Type (0040,A040) is NUMERIC.                        |          |
| >>Code Value                     | (0008,0100)  | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |
| >>Coding Scheme Designator       | (0008,0102)  | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |
| >>Code Meaning                   | (0008,0104)  | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |
| >Value Type                      | (0040, A040) | FIXED                  | ALWAYS                | ALWAYS            | CODE  |                                                                       |          |
| >Concept Name Code Sequence      | (0040, A043) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |
| >>Code Value                     | (0008,0100)  | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                                       |          |

| Attribute Name              | Tag          | Source                  | Presence of Attribute | Presence of Value | Value | Conditions                                | Comments |
|-----------------------------|--------------|-------------------------|-----------------------|-------------------|-------|-------------------------------------------|----------|
| >>Coding Scheme Designator  | (0008,0102)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                           |          |
| >>Code Meaning              | (0008,0104)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                           |          |
| >>Code Scheme Version       | (0008,0103)  | FIXED                   | ALWAYS                | ALWAYS            | 1.0   |                                           |          |
| >Concept Code Sequence      | (0040, A168) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present if Value Type (0040,A040) is CODE |          |
| >Concept Name Code Sequence | (0040, A043) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                           |          |
| >>Code Value                | (0008,0100)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                           |          |
| >>Coding Scheme Designator  | (0008,0102)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                           |          |
| >>Code Meaning              | (0008,0104)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                           |          |

**Table 7.1.1.8-9: Enhanced MR Image Module**

| Attribute Name                 | Tag         | Source       | Presence of Attribute | Presence of Value | Value           | Conditions | Comments |
|--------------------------------|-------------|--------------|-----------------------|-------------------|-----------------|------------|----------|
| Image Type                     | (0008,0008) | GENERATED    | ALWAYS                | ALWAYS            |                 |            |          |
| Samples per Pixel              | (0028,0002) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 1               |            |          |
| Photometric Interpretation     | (0028,0004) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | MONOCHROME2     |            |          |
| Bits Allocated                 | (0028,0100) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 16              |            |          |
| Bits Stored                    | (0028,0101) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | 12              |            |          |
| High Bit                       | (0028,0102) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          | Bits Stored - 1 |            |          |
| Pixel Representation           | (0028,0103) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Burned In Annotation           | (0028,0301) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Lossy Image Compression        | (0028,2110) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Lossy Image Compression Ratio  | (0028,2112) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Lossy Image Compression Method | (0028,2114) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |
| Presentation LUT Shape         | (2050,0020) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |                 |            |          |

#### 7.1.1.9 Grayscale Softcopy Presentation State IOD

**Table 7.1.1.9-1: Grayscale Softcopy Presentation State IOD Modules**

| IE                 | Module                            | Reference                        | Presence of Module |
|--------------------|-----------------------------------|----------------------------------|--------------------|
| Patient            | Patient                           | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS             |
| Study              | General Study                     | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS             |
|                    | Patient Study                     | <a href="#">Table 7.1.1.1-3</a>  | ALWAYS             |
| Series             | General Series                    | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS             |
|                    | Presentation Series               | <a href="#">Table 7.1.1.9-6</a>  | ALWAYS             |
| Equipment          | General Equipment                 | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS             |
| Presentation State | Presentation State Identification | <a href="#">Table 7.1.1.9-7</a>  | ALWAYS             |
|                    | Presentation State Relationship   | <a href="#">Table 7.1.1.9-8</a>  | ALWAYS             |
|                    | Presentation State Shutter        | <a href="#">Table 7.1.1.9-9</a>  | ALWAYS             |
|                    | Presentation State Mask           | <a href="#">Table 7.1.1.9-10</a> | ALWAYS             |
|                    | Displayed Area                    | <a href="#">Table 7.1.1.9-5</a>  | ALWAYS             |
|                    | Graphic Annotation                | <a href="#">Table 7.1.1.9-2</a>  | CONDITIONAL        |
|                    | Graphic Layer                     | <a href="#">Table 7.1.1.9-4</a>  | CONDITIONAL        |
|                    | Modality LUT                      | <a href="#">Table 7.1.1.9-3</a>  | CONDITIONAL        |
|                    | Softcopy VOI LUT                  | <a href="#">Table 7.1.1.9-12</a> |                    |
|                    | Softcopy Presentation LUT         | <a href="#">Table 7.1.1.9-11</a> | ALWAYS             |
|                    | SOP Common                        | <a href="#">Table 7.1.1.1-14</a> | ALWAYS             |

**Table 7.1.1.9-2: Graphic Annotation Module**

| Attribute Name                               | Tag          | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------------------------|--------------|-------------------------|-----------------------|-------------------|-------|------------|----------|
| Graphic Annotation Sequence                  | (0070, 0001) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Referenced Image Sequence                   | (0008,1140)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Graphic Layer                               | (0070,0002)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Text Object Sequence                        | (0070,0008)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Bounding Box Annotation Units              | (0070,0003)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Anchor Point Annotation Units              | (0070,0004)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Unformatted Text Value                     | (0070,0006)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Bounding Box Top Left Hand Corner          | (0070,0010)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Bounding Box Bottom Right Hand Corner      | (0070,0011)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Bounding Box Text Horizontal Justification | (0070,0012)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Anchor Point                               | (0070,0014)  | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name             | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| >>Anchor Point Visibility  | (0070,0015) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Graphic Object Sequence   | (0070,0009) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Graphic Annotation Units | (0070,0005) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Graphic Dimensions       | (0070,0020) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Number of Graphic Points | (0070,0021) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Graphic Data             | (0070,0022) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Graphic Type             | (0070,0023) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.9-3: Modality LUT Module**

| Attribute Name        | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Modality LUT Sequence | (0028,3000) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >LUT Descriptor       | (0028,3002) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Modality LUT Type    | (0028,3004) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >LUT Data             | (0028,3006) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Rescale Intercept     | (0028,1052) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Rescale Slope         | (0028,1053) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Rescale Type          | (0028,1054) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

**Table 7.1.1.9-4: Graphic Layer Module**

| Attribute Name         | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Graphic Layer Sequence | (0070,0060) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Graphic Layer         | (0070,0002) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Graphic Layer Order   | (0070,0062) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

Table 7.1.1.9-5: Display Area Module Attributes

| Attribute Name                           | Tag         | Source                  | Presence of Attribute | Presence of Value | Value                                | Conditions | Comments |
|------------------------------------------|-------------|-------------------------|-----------------------|-------------------|--------------------------------------|------------|----------|
| Displayed Area Selection Sequence        | (0070,005A) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                      |            |          |
| >Referenced Image Sequence               | (0008,1140) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                      |            |          |
| >Displayed Area Top Left Hand Corner     | (0070,0052) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                      |            |          |
| >Displayed Area Bottom Right Hand Corner | (0070,0053) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                      |            |          |
| >Presentation Size Mode                  | (0070,0100) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | SCALE TO FIT<br>TRUE SIZE<br>MAGNIFY |            |          |
| >Presentation Pixel Spacing              | (0070,0101) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                      |            |          |
| >Presentation Pixel Aspect Ratio         | (0070,0102) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                      |            |          |
| >Presentation Pixel Magnification Ratio  | (0070,0103) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                      |            |          |

Table 7.1.1.9-6: Presentation Series Module

| Attribute Name | Tag         | Source | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------|-------------|--------|-----------------------|-------------------|-------|------------|----------|
| Modality       | (0008,0060) | FIXED  | ALWAYS                | ALWAYS            | PR    |            |          |

Table 7.1.1.9-7: Presentation State Identification Module

| Attribute Name             | Tag         | Source                  | Presence of Attribute | Presence of Value | Value                                        | Conditions | Comments |
|----------------------------|-------------|-------------------------|-----------------------|-------------------|----------------------------------------------|------------|----------|
| Presentation Creation Date | (0070,0082) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | Date on which this presentation was created. |            |          |
| Presentation Creation Time | (0070,0083) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | Date on which this presentation was created. |            |          |

Table 7.1.1.9-8: Presentation State Relationship Module

| Attribute Name             | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments                                                                                  |
|----------------------------|-------------|-------------------------|-----------------------|-------------------|-------|------------|-------------------------------------------------------------------------------------------|
| Referenced Series Sequence | (0008,1115) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |                                                                                           |
| >Series Instance UID       | (0020,000E) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            | Unique identifier of a Series that is part of the Study defined by the Study Instance UID |

| Attribute Name            | Tag         | Source                 | Presence of Attribute | Presence of Value | Value | Conditions | Comments                               |
|---------------------------|-------------|------------------------|-----------------------|-------------------|-------|------------|----------------------------------------|
|                           |             |                        |                       |                   |       |            | (0020,000D) in the enclosing Data Set. |
| Referenced Image Sequence | (0008,1140) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |            |                                        |

**Table 7.1.1.9-9: Presentation State Shutter Module**

| Attribute Name                           | Tag         | Source                 | Presence of Attribute | Presence of Value | Value | Conditions                                                                                                                                                       | Comments |
|------------------------------------------|-------------|------------------------|-----------------------|-------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Shutter Presentation Value               | (0018,1622) | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Present if the Display Shutter Module or Bitmap Display Shutter Module is present.                                                                               |          |
| Shutter Presentation Color CIE Lab Value | (0018,1624) | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Present if the Display Shutter Module or Bitmap Display Shutter Module is present and the SOP Class is other than Grayscale Softcopy Presentation State Storage. |          |

**Table 7.1.1.9-10: Presentation State Mask Module**

| Attribute Name            | Tag         | Source                 | Presence of Attribute | Presence of Value | Value | Conditions                                                              | Comments |
|---------------------------|-------------|------------------------|-----------------------|-------------------|-------|-------------------------------------------------------------------------|----------|
| Mask Subtraction Sequence | (0028,6100) | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Present if Mask Module is present.                                      |          |
| >Mask Operation           | (0028,6101) | ALWAYS                 | ALWAYS                | ALWAYS            |       |                                                                         |          |
| >Contrast Frame Averaging | (0028,6112) | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Present if Mask Frame Numbers (0028,6110) specifies more than one Frame |          |
| Recommended Viewing Mode  | (0028,1090) | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Present if Mask Subtraction Sequence (0028,6100) is present.            |          |

**Table 7.1.1.9-11: Softcopy Presentation LUT Module**

| Attribute Name            | Tag         | Source                 | Presence of Attribute | Presence of Value | Value | Conditions                                                | Comments |
|---------------------------|-------------|------------------------|-----------------------|-------------------|-------|-----------------------------------------------------------|----------|
| Presentation LUT Sequence | (2050,0010) | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Required if Presentation LUT Shape (2050,0020) is absent. |          |
| >LUT Descriptor           | (0028,3002) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                           |          |
| >LUT Data                 | (0028,3006) | SRC_INSTANCE/GENERATED | ALWAYS                | ALWAYS            |       |                                                           |          |
| Presentation LUT Shape    | (2050,0020) | SRC_INSTANCE/GENERATED | CONDITIONAL           | ALWAYS            |       | Required if Presentation LUT Sequence                     |          |

| Attribute Name | Tag | Source | Presence of Attribute | Presence of Value | Value | Conditions             | Comments |
|----------------|-----|--------|-----------------------|-------------------|-------|------------------------|----------|
|                |     |        |                       |                   |       | (2050,0010) is absent. |          |

**Table 7.1.1.9-12: Softcopy VOI LUT Module**

| Attribute Name                                           | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions                                                                                                                                    | Comments |
|----------------------------------------------------------|-------------|-------------------------|-----------------------|-------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Softcopy VOI LUT Sequence                                | (0028,3110) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                                                               |          |
| >Referenced Image Sequence                               | (0008,1040) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present VOI LUT transformation in this Item does not apply to all the images and frames listed in the Presentation State Relationship Module. |          |
| >>Referenced SOP Class UID                               | (0008,1150) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                                                               |          |
| >>Referenced SOP Instance UID                            | (0008,1155) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                                                               |          |
| >>Referenced Frame Number                                | (0008,1160) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |                                                                                                                                               |          |
| >Include <a href="#">Table 7.1.1.1-12</a> VOI LUT Module |             |                         |                       |                   |       |                                                                                                                                               |          |

#### 7.1.1.10 Color Softcopy Presentation State IOD

**Table 7.1.1.10-1: Color Softcopy Presentation State IOD Modules**

| IE                 | Module                            | Reference                        | Presence of Module                                                                  |
|--------------------|-----------------------------------|----------------------------------|-------------------------------------------------------------------------------------|
| Patient            | Patient                           | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS                                                                              |
| Study              | General Study                     | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS                                                                              |
|                    | Patient Study                     | <a href="#">Table 7.1.1.1-3</a>  | ALWAYS                                                                              |
| Series             | General Series                    | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS                                                                              |
|                    | Presentation Series               | <a href="#">Table 7.1.1.9-6</a>  | ALWAYS                                                                              |
| Equipment          | General Equipment                 | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS                                                                              |
| Presentation State | Presentation State Identification | <a href="#">Table 7.1.1.9-7</a>  | ALWAYS                                                                              |
|                    | Presentation State Relationship   | <a href="#">Table 7.1.1.9-8</a>  | ALWAYS                                                                              |
|                    | Presentation State Shutter        | <a href="#">Table 7.1.1.9-9</a>  | ALWAYS                                                                              |
|                    | Displayed Area                    | <a href="#">Table 7.1.1.9-5</a>  | ALWAYS                                                                              |
|                    | Graphic Annotation                | <a href="#">Table 7.1.1.9-2</a>  | Present if Graphic Annotations are to be applied to referenced image(s).            |
|                    | Graphic Layer                     | <a href="#">Table 7.1.1.9-4</a>  | Present if Graphic Annotations or Overlays are to be applied to referenced image(s) |
|                    | SOP Common                        | <a href="#">Table 7.1.1.1-14</a> | ALWAYS                                                                              |
|                    | ICC Profile                       | <a href="#">Table 7.1.1.10-2</a> | ALWAYS                                                                              |

Table 7.1.1.10-2: ICC Profile Module

| Attribute Name | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| ICC Profile    | (0028,2000) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | sRGB  |            |          |

### 7.1.1.11 Pseudo-Color Softcopy Presentation State IOD

Table 7.1.1.11-1: Pseudo-Color Softcopy Presentation State IOD Modules

| IE                 | Module                            | Reference                        | Presence of Module                                                                  |
|--------------------|-----------------------------------|----------------------------------|-------------------------------------------------------------------------------------|
| Patient            | Patient                           | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS                                                                              |
| Study              | General Study                     | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS                                                                              |
|                    | Patient Study                     | <a href="#">Table 7.1.1.1-3</a>  | CONDITIONAL: Attributes of this module are not present in case of emergency case.   |
| Series             | General Series                    | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS                                                                              |
|                    | Presentation Series               | <a href="#">Table 7.1.1.9-6</a>  | ALWAYS                                                                              |
| Equipment          | General Equipment                 | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS                                                                              |
| Presentation State | Presentation State Identification | <a href="#">Table 7.1.1.9-7</a>  | ALWAYS                                                                              |
|                    | Presentation State Relationship   | <a href="#">Table 7.1.1.9-8</a>  | ALWAYS                                                                              |
|                    | Presentation State Shutter        | <a href="#">Table 7.1.1.9-9</a>  | ALWAYS                                                                              |
|                    | Presentation State Mask           | <a href="#">Table 7.1.1.9-10</a> | ALWAYS                                                                              |
|                    | Displayed Area                    | <a href="#">Table 7.1.1.9-5</a>  | ALWAYS                                                                              |
|                    | Graphic Annotation                | <a href="#">Table 7.1.1.9-2</a>  | Present if Graphic Annotations are to be applied to referenced image(s).            |
|                    | Graphic Layer                     | <a href="#">Table 7.1.1.9-4</a>  | Present if Graphic Annotations or Overlays are to be applied to referenced image(s) |
|                    | Palette Color Lookup Table        | <a href="#">Table 7.1.1.11-2</a> | ALWAYS                                                                              |
|                    | ICC Profile                       | <a href="#">Table 7.1.1.10-2</a> | ALWAYS                                                                              |
|                    | SOP Common                        | <a href="#">Table 7.1.1.1-14</a> | ALWAYS                                                                              |

Table 7.1.1.11-2: Palette Color Lookup Table

| Attribute Name                              | Tag         | Source                     | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|---------------------------------------------|-------------|----------------------------|-----------------------|-------------------|-------|------------|----------|
| Red Palette Color Lookup Table Descriptor   | (0028,1101) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Green Palette Color Lookup Table Descriptor | (0028,1102) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Blue Palette Color Lookup                   | (0028,1103) | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                                  | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions                                                                                                                      | Comments |
|-------------------------------------------------|-------------|-------------------------|-----------------------|-------------------|-------|---------------------------------------------------------------------------------------------------------------------------------|----------|
| Table Descriptor                                |             |                         |                       |                   |       |                                                                                                                                 |          |
| Red Palette Color Lookup Table Data             | (0028,1201) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present if segmented data is NOT used in an Image IOD or Color Palette IOD, or if the IOD is a Presentation State IOD.          |          |
| Green Palette Color Lookup Table Data           | (0028,1202) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present if segmented data is NOT used in an Image IOD or Color Palette IOD, or if the IOD is a Presentation State IOD.          |          |
| Blue Palette Color Lookup Table Data            | (0028,1203) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present if segmented data is NOT used in an Image IOD or Color Palette IOD, or if the IOD is a Presentation State IOD.          |          |
| Segmented Red Palette Color Lookup Table Data   | (0028,1221) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present if segmented data is used in an Image IOD or Color Palette IOD; shall not be present in a Presentation State IOD.       |          |
| Segmented Green Palette Color Lookup Table Data | (0028,1222) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Present if segmented data is used in an Image IOD or Color Palette IOD; shall not be present in a Presentation State IOD        |          |
| Segmented Blue Palette Color Lookup Table Data  | (0028,1223) | SRC_INSTANCE/ GENERATED | CONDITIONAL           | ALWAYS            |       | Data. Required if segmented data is used in an Image IOD or Color Palette IOD; shall not be present in a Presentation State IOD |          |

#### 7.1.1.12 Real World Value Mapping IOD

Table 7.1.1.12-1: Real World Value Mapping IOD Modules

| IE      | Module  | Reference                       | Presence of Module |
|---------|---------|---------------------------------|--------------------|
| Patient | Patient | <a href="#">Table 7.1.1.1-1</a> | ALWAYS             |

| IE                       | Module                          | Reference                        | Presence of Module |
|--------------------------|---------------------------------|----------------------------------|--------------------|
| Study                    | General Study                   | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS             |
| Series                   | General Series                  | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS             |
|                          | Real World Value Mapping Series | <a href="#">Table 7.1.1.12-3</a> | ALWAYS             |
| Equipment                | General Equipment               | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS             |
| Real World Value Mapping | Real World Value Mapping        | <a href="#">Table 7.1.1.12-3</a> | ALWAYS             |
|                          | Common Instance Reference       | <a href="#">Table 7.1.1.12-4</a> | ALWAYS             |
|                          | SOP Common                      | <a href="#">Table 7.1.1.1-14</a> | ALWAYS             |

**Table 7.1.1.12-2: Real World Value Mapping Series Module**

| Attribute Name | Tag         | Source | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------|-------------|--------|-----------------------|-------------------|-------|------------|----------|
| Modality       | (0008,0060) | FIXED  | ALWAYS                | ALWAYS            | RWV   |            |          |

**Table 7.1.1.12-3: Real World Value Mapping Module**

| Attribute Name                                     | Tag                                            | Source                     | Presence of Attribute | Presence of Value | Value                     | Conditions | Comments |
|----------------------------------------------------|------------------------------------------------|----------------------------|-----------------------|-------------------|---------------------------|------------|----------|
| Content Date                                       | (0008,0023)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                           |            |          |
| Content Time                                       | (0008,0033)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                           |            |          |
| Instance Number                                    | (0020,0013)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                           |            |          |
| Private Creator                                    | (0029,0010)                                    | FIXED                      | ALWAYS                | ALWAYS            | SIEMENS SYNGO RWVM        |            |          |
| RWVM Version                                       | (0029,<br>SIEMENS<br>SYNGO<br>RWVM,50)         | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | 1.0                       |            |          |
| Private Creator                                    | (0031,0010)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            | SIEMENS SYNGO<br>WORKFLOW |            |          |
| WF Internal Patient UID                            | (0031,<br>SIEMENS<br>SYNGO<br>WORKFLOW,1<br>0) | SRC_INSTANCE               | SRC_COPY              | SRC_COPY          |                           |            |          |
| Referenced Image Real World Value Mapping Sequence | (0040,9094)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                           |            |          |
| >Referenced Image Sequence                         | (0008,1140)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                           |            |          |
| >>Referenced SOP Class UID                         | (0008,1150)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                           |            |          |
| >>>Referenced SOP Instance UID                     | (0008,1155)                                    | SRC_INSTANCE/<br>GENERATED | ALWAYS                | ALWAYS            |                           |            |          |

| Attribute Name                        | Tag         | Source                  | Presence of Attribute | Presence of Value | Value                                                                           | Conditions | Comments |
|---------------------------------------|-------------|-------------------------|-----------------------|-------------------|---------------------------------------------------------------------------------|------------|----------|
| >Real World Value Mapping Sequence    | (0040,9096) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                                                                 |            |          |
| >>LUT Explanation                     | (0028,3003) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | Same as Code Value (0008,0100) from Measurement Units Code Sequence (0040,08EA) |            |          |
| >>>Measurement Units Code Sequence    | (0040,08EA) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                                                                 |            |          |
| >>>>Code Value                        | (0008,0100) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | Either of "SUV-bw" or "Bq/ml" or "Gy"                                           |            |          |
| >>>>Coding Scheme Designator          | (0008,0102) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | UCUM                                                                            |            |          |
| >>>>Code Meaning                      | (0008,0104) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                                                                 |            |          |
| >>LUT Label                           | (0040,9210) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            | Same as Code Value (0008,0100) from Measurement Units Code Sequence (0040,08EA) |            |          |
| >>Real World Value Last Value Mapped  | (0040,9211) | FIXED                   | ALWAYS                | ALWAYS            | FIXED in case of Dose as "65535", for others "32767"                            |            |          |
| >>Real World Value First Value Mapped | (0040,9216) | FIXED                   | ALWAYS                | ALWAYS            | FIXED in case of Dose as "0" for others "-32768"                                |            |          |
| >>Real World Value Intercept          | (0040,9224) | FIXED                   | ALWAYS                | ALWAYS            | 0.0                                                                             |            |          |
| >>Real World Value Slope              | (0040,9225) | FIXED                   | ALWAYS                | ALWAYS            | 1                                                                               |            |          |
| Presentation Label                    | (0070,0080) | FIXED                   | ALWAYS                | ALWAYS            | L1 in case of RT Dose SOP class, otherwise Mappings                             |            |          |
| Presentation Description              | (0070,0081) | FIXED                   | ALWAYS                | ALWAYS            |                                                                                 |            |          |
| Presentation Creator's Name           | (0070,0084) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |                                                                                 |            |          |

**Table 7.1.1.12-4: Common Instance Reference Module**

| Attribute Name             | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------|-------------|-------------------------|-----------------------|-------------------|-------|------------|----------|
| Referenced Series Sequence | (0008,1115) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Series Instance UID       | (0020,000E) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name                | Tag         | Source                  | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------------|-------------|-------------------------|-----------------------|-------------------|-------|------------|----------|
| >Referenced Instance Sequence | (0008,114A) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Referenced SOP Class UID    | (0008,1150) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >>Referenced SOP Instance UID | (0008,1155) | SRC_INSTANCE/ GENERATED | ALWAYS                | ALWAYS            |       |            |          |

### 7.1.1.13 Enhanced MR Color Image IOD

In the objects created the tag (0008,0008) Image Type will be of the value "SECONDARY/DERIVED" and may be extended by application specific values.

**Table 7.1.1.13-1: Enhanced MR Color Image IOD Modules**

| IE                         | Module Name                   | Reference                        | Presence of Module |
|----------------------------|-------------------------------|----------------------------------|--------------------|
| Patient                    | Patient                       | <a href="#">Table 7.1.1.1-1</a>  | ALWAYS             |
| Study                      | General Study                 | <a href="#">Table 7.1.1.1-2</a>  | ALWAYS             |
|                            | Patient Study                 | <a href="#">Table 7.1.1.1-3</a>  | ALWAYS             |
| Series                     | General Series                | <a href="#">Table 7.1.1.1-4</a>  | ALWAYS             |
|                            | MR Series                     | <a href="#">Table 7.1.1.8-2</a>  | ALWAYS             |
| Frame Of Reference         | Frame of Reference            | <a href="#">Table 7.1.1.1-7</a>  | ALWAYS             |
| Equipment                  | General Equipment             | <a href="#">Table 7.1.1.1-8</a>  | ALWAYS             |
|                            | Enhanced General Equipment    | <a href="#">Table 7.1.1.3-5</a>  | ALWAYS             |
| Image                      | General Image                 | <a href="#">Table 7.1.1.1-10</a> | ALWAYS             |
|                            | Image Pixel                   | <a href="#">Table 7.1.1.1-11</a> | ALWAYS             |
|                            | Enhanced Contrast/Bolus       | <a href="#">Table 7.1.1.8-3</a>  | CONDITIONAL        |
|                            | Multi-frame Functional Groups | <a href="#">Table 7.1.1.8-2</a>  | ALWAYS             |
|                            | Multi-frame Dimension         | <a href="#">Table 7.1.1.3-4</a>  | ALWAYS             |
|                            | Acquisition Context           | <a href="#">Table 7.1.1.8-8</a>  | ALWAYS             |
|                            | Enhanced MR Image             | <a href="#">Table 7.1.1.8-9</a>  | ALWAYS             |
|                            | ICC Profile                   | <a href="#">Table 7.1.1.10-2</a> | ALWAYS             |
|                            | SOP Common                    | <a href="#">Table 7.1.1.1-14</a> | ALWAYS             |
| Standard Extension Modules | Common Instance Reference     | <a href="#">Table 7.1.1.12-4</a> | ALWAYS             |
|                            | Cardiac Synchronization       | <a href="#">Table 7.1.1.13-2</a> | CONDITIONAL        |
|                            | Respiratory Synchronization   | <a href="#">Table 7.1.1.13-3</a> | CONDITIONAL        |
|                            | Bulk Motion Synchronization   | <a href="#">Table 7.1.1.13-4</a> | CONDITIONAL        |

**Table 7.1.1.13-2: Cardiac Synchronization Module**

| Attribute Name                    | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Cardiac Synchronization Technique | (0018,9037) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Cardiac Signal Source             | (0018,9085) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Cardiac RR Interval Specified     | (0018,9070) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

| Attribute Name                   | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Cardiac Beat Rejection Technique | (0018,9169) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Low R-R Value                    | (0018,1081) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| High R-R Value                   | (0018,1082) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Intervals Acquired               | (0018,1083) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Intervals Rejected               | (0018,1084) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Cardiac Framing Type             | (0018,1064) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

**Table 7.1.1.13-3: Respiratory Synchronization Module**

| Attribute Name                            | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Respiratory Motion Compensation Technique | (0018,9170) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Respiratory Signal Source                 | (0018,9171) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Respiratory Trigger Delay Threshold       | (0020,9256) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Respiratory Trigger Type                  | (0020,9250) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

**Table 7.1.1.13-4: Bulk Motion Synchronization Module**

| Attribute Name                     | Tag         | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------------------|-------------|--------------|-----------------------|-------------------|-------|------------|----------|
| Bulk Motion Compensation Technique | (0018,9172) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |
| Bulk Motion Signal Source          | (0018,9173) | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

## 7.1.2 Data Dictionary of Private Attributes

**Table 7.1.2-1 : Basic Text SR IOD Private Attributes**

| Attribute Name                           | Tag         | VR | VM | Source | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|------------------------------------------|-------------|----|----|--------|-----------------------|-------------------|-------|------------|----------|
| SIEMENS SYNGO ENCAPSULATED DOCUMENT DATA | (0087,0010) | LO | 1  |        |                       |                   |       |            |          |

| Attribute Name | Tag         | VR | VM | Source       | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|----------------|-------------|----|----|--------------|-----------------------|-------------------|-------|------------|----------|
| > Study Model  | (0087,1020) | UT | 1  | SRC_INSTANCE | SRC_COPY              | SRC_COPY          |       |            |          |

**Table 7.1.2-2: Segmentation IOD Private Attributes**

| Attribute Name                            | Tag         | VR | VM | Source    | Presence of Attribute | Presence of Value | Value      | Conditions | Comments |
|-------------------------------------------|-------------|----|----|-----------|-----------------------|-------------------|------------|------------|----------|
| SIEMENS SYNGO ADVANCED PRESENTATION       | (0029,0010) | LO | 1  |           |                       |                   |            |            |          |
| > Segmentation Lock Mode                  | (0029,106b) | LO | 1  | GENERATED | ALWAYS                | ALWAYS            | LOCKED     |            |          |
|                                           |             |    |    |           |                       |                   | NOT_LOCKED |            |          |
| > Segmentation Volume Model Matrix Double | (0029,1079) | FD | 16 | GENERATED | ALWAYS                | ALWAYS            |            |            |          |
| SIEMENS SYNGO SEGMENTATION                | (0029,0011) | LO | 1  |           |                       |                   |            |            |          |
| > Segmentation Inverted                   | (0029,1110) | CS | 1  | GENERATED | ALWAYS                | ALWAYS            | YES        |            |          |
|                                           |             |    |    |           |                       |                   | NO         |            |          |
| > Segmentation Uneditable by User         | (0029,1111) | CS | 1  | GENERATED | ALWAYS                | ALWAYS            | YES        |            |          |
|                                           |             |    |    |           |                       |                   | NO         |            |          |

**Table 7.1.2-3: CT/MR/SC/Enhanced MR IOD Private Attributes**

| Attribute Name                      | Tag         | VR | VM | Source    | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-------------------------------------|-------------|----|----|-----------|-----------------------|-------------------|-------|------------|----------|
| SIEMENS MEDCOM HEADER               | (0029,0010) | LO | 1  | GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| SIEMENS SYNGO ADVANCED PRESENTATION | (0029,0011) | LO | 1  |           |                       |                   |       |            |          |
| Application header Sequence         | (0029,1040) | SQ | 1  | GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Private Creator                    | (0029,0010) | LO | 1  | GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Application Header Type            | (0029,0041) | CS | 1  | GENERATED | ALWAYS                | ALWAYS            |       |            |          |

| Attribute Name              | Tag         | VR | VM | Source    | Presence of Attribute | Presence of Value | Value | Conditions | Comments |
|-----------------------------|-------------|----|----|-----------|-----------------------|-------------------|-------|------------|----------|
| >Application Header ID      | (0029,0042) | LO | 1  | GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| >Application Header Version | (0029,0043) | LO | 1  | GENERATED | ALWAYS                | ALWAYS            |       |            |          |
| Private Creator             | (0031,0010) | LO | 1  | GENERATED | ALWAYS                | ALWAYS            |       |            |          |

## 7.2 Coded Terminology and Templates

None.

## 7.3 Grayscale Image Consistency

None.

## 7.4 Standard Extended/Specialized/Private SOP Classes

None.

## 7.5 Private Transfer Syntaxes

None.

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**Siemens Healthineers Headquarters**

Siemens Healthineers AG  
Siemensstr. 3  
91301 Forchheim, Germany  
Phone: +49 9191 18-0  
siemens-healthineers.com

**Manufacturer**

Siemens Healthcare GmbH  
Henkestr. 127  
91052 Erlangen Germany

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