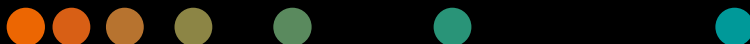
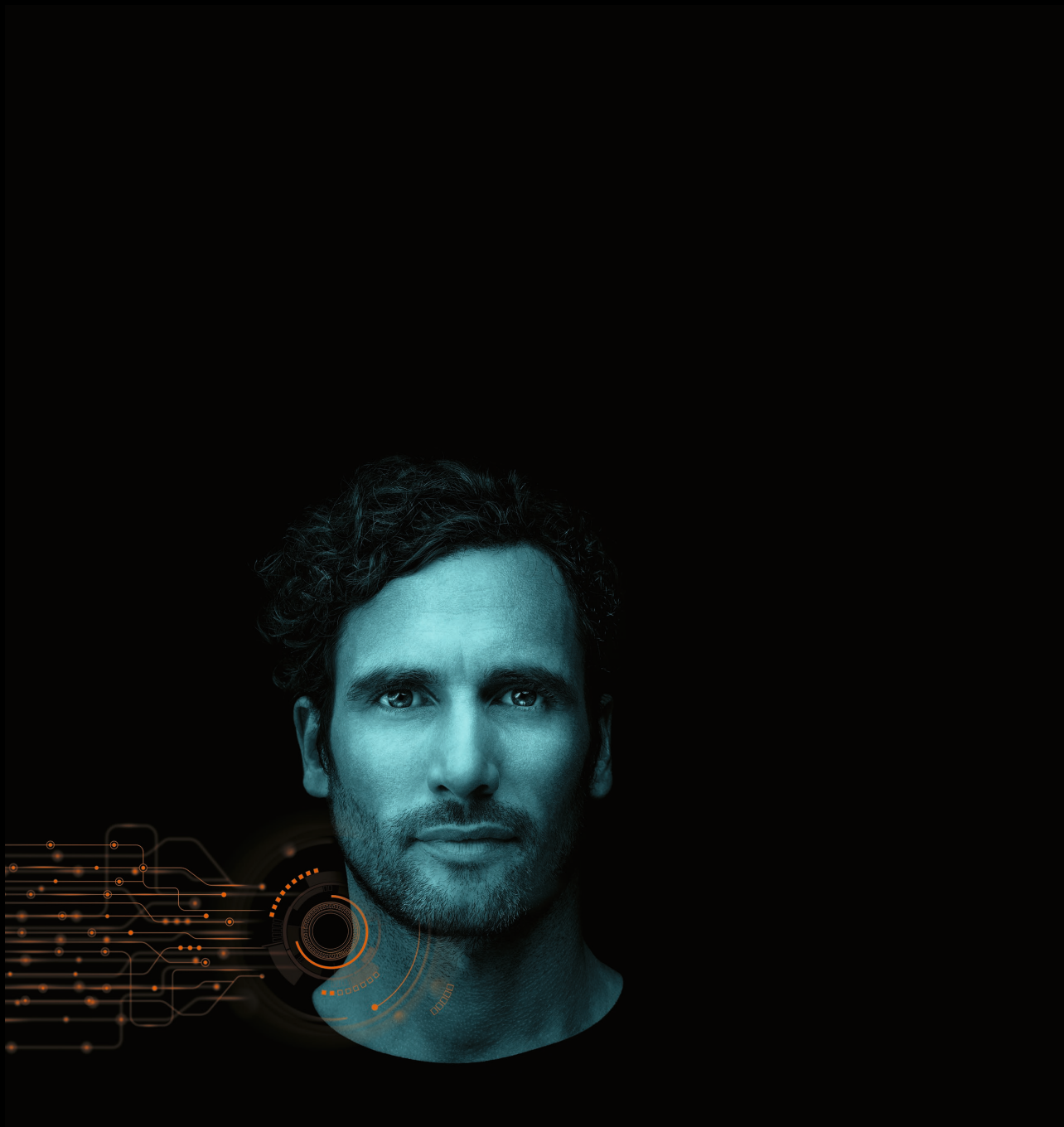


DICOM Conformance Statement

Syngo Carbon Space VA38A



August 2025

Conformance Statement Overview

The Syngo Carbon Core Solution is a combinatorial medical device built out of a combination of two devices, Syngo Carbon IDM and Syngo Carbon Space.

The scope of this DCS is Syngo Carbon Space creates and displays of 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.

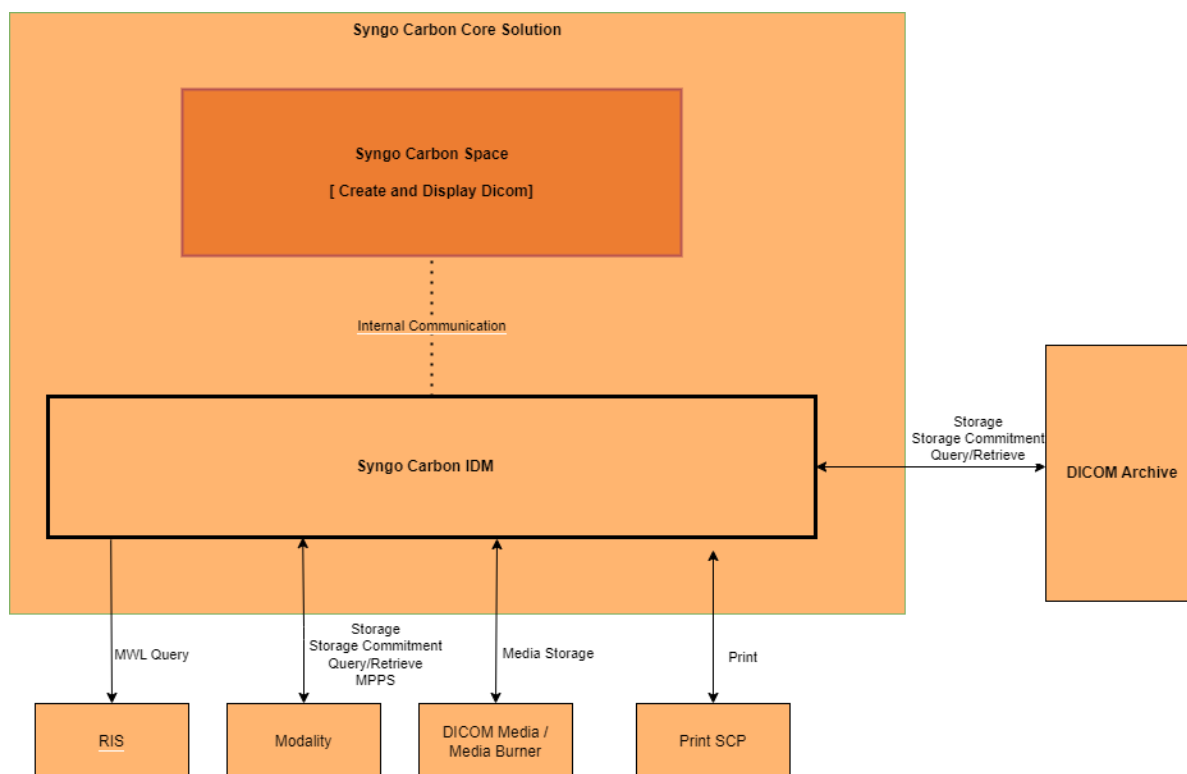


Figure 1: Overview of Implemented Services

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

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1 Introduction

1.1 Revision History

Version	Date	Change
R1.0	08-18-2025	Released for Syngo Carbon Space VA38A.

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] (ITH) DICOM Conformance Statement *Syngo Carbon IDM VA50A*
- [3] *Syngo Carbon IDM* Online Help VA50A
- [4] IHE http://www.ihe.net/Resources/technical_frameworks/#radiology

2 Networking

2.1 Implementation Model

The Syngo Carbon Space creates and displays DICOM images 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 AE.

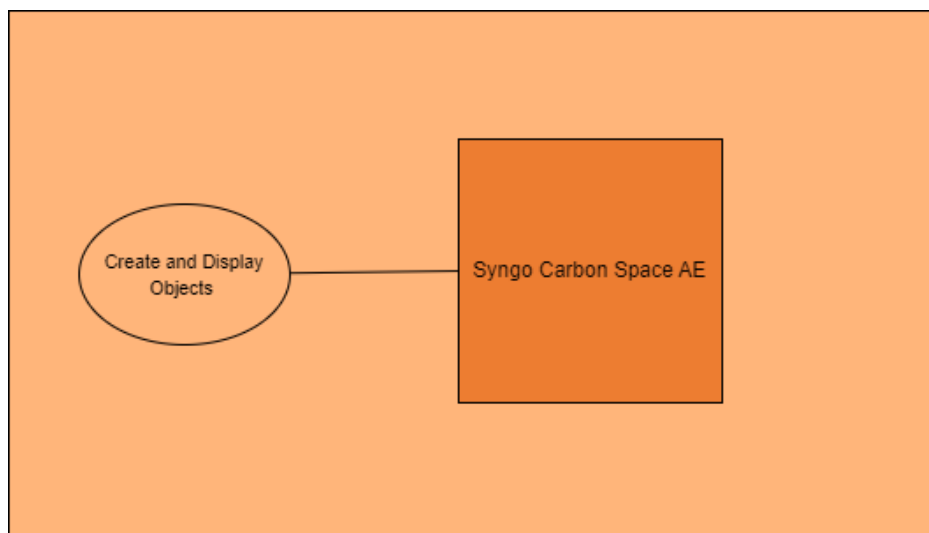


Figure 2: Functional overview of Syngo Carbon Space AE

2.1.2 Functional Definitions of Application Entities

2.1.2.1 Functional Definitions of Syngo Carbon Space AE

The syngo Carbon Space AE 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 displayed and created.
- [Annex](#) for details on the IOD contents created by the Syngo Carbon Space AE

2.1.3 Sequencing of Real-World Activities

Not Applicable.

2.2 AE Specifications

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

2.2.1 Syngo Carbon Space AE Specification

2.2.1.1 SOP Classes

The Syngo Carbon Space AE 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 Carbon IDM 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

Character Set Description	Defined Term	ISO registration number	Character Set
Default repertoire	None	ISO_IR 6	ISO 646
Latin alphabet No. 1	ISO_IR 100	ISO_IR 100	Supplementary set
		ISO_IR 6	ISO 646
Latin alphabet No. 2	ISO_IR 101	ISO_IR 101	Supplementary set
		ISO_IR 6	ISO 646
Latin alphabet No. 3	ISO_IR 109	ISO_IR 109	Supplementary set
		ISO_IR 6	ISO 646
Latin alphabet No. 4	ISO_IR 110	ISO_IR 110	Supplementary set
		ISO_IR 6	ISO 646
Cyrillic	ISO_IR 144	ISO_IR 144	Supplementary set
		ISO_IR 6	ISO 646
Arabic	ISO_IR 127	ISO_IR 127	Supplementary set
		ISO_IR 6	ISO 646
Greek	ISO_IR 126	ISO_IR 126	Supplementary set
		ISO_IR 6	ISO 646
Hebrew	ISO_IR 138	ISO_IR 138	Supplementary set
		ISO_IR 6	ISO 646
Latin alphabet No. 5	ISO_IR 148	ISO_IR 148	Supplementary set
		ISO_IR 6	ISO 646
Japanese	ISO_IR 13	ISO_IR 13	JIS X 0201: Katakana
		ISO_IR 14	JIS X 0201: Romaji
Thai	ISO_IR166	ISO_IR166	TIS 620-2553 (1990)
		ISO_IR 6	ISO 646

Table 4: Single-Byte Characters Sets with Code Extension

Character Set Description	Defined Term	Standard for Code Extension	ESC sequence	ISO registration number	Character Set
Default repertoire	ISO 2022 IR 6	ISO 2022	ESC 02/08 04/02	ISO-IR 6	ISO 646
Latin alphabet No.1	ISO 2022 IR 100	ISO 2022	ESC 02/13 04/01	ISO-IR 100	Supplementary set
		ISO 2022	ESC 02/08 04/02	ISO-IR 6	ISO 646
Latin alphabet No.2	ISO 2022 IR 101	ISO 2022	ESC 02/13 04/02	ISO-IR 101	Supplementary set

		ISO 2022	ESC 02/08 04/02	ISO-IR 6	ISO 646
Latin alphabet No.3	ISO 2022 IR 109	ISO 2022	ESC 02/13 04/03	ISO-IR 109	Supplementary set
		ISO 2022	ESC 02/08 04/02	ISO-IR 6	ISO 646
Latin alphabet No.4	ISO 2022 IR 110	ISO 2022	ESC 02/13 04/04	ISO-IR 110	Supplementary set
		ISO 2022	ESC 02/08 04/02	ISO-IR 6	ISO 646

Multi-Byte Character Sets without Code Extension is mentioned in Table 5: Multi-Byte Character Sets without Code Extension

Table 5: Multi-Byte Character Sets without Code Extension

Character Set Description	Defined Term	ISO registration number	Character Set
Unicode	ISO_IR 192	ISO 10646	Unicode in UTF-8
Chinese	GB18030	GB18030	GB 18030-2000 (China Association for Standardization)

Table 6: Multi-Byte Character Sets with Code Extension

Character Set Description	Defined Term	Standard for Code Extension	ESC sequence	ISO registration number	Character Set
Japanese	ISO 2022 IR 87	ISO 2022	ESC 02/04 04/02	ISO-IR 87	JIS X 0208: Japanese kanji, hiragana, katakana
Japanese	ISO 2022 IR 159	ISO 2022	ESC 02/04 02/08 04/04	ISO-IR 159	JIS X 0212: Supplementary Kanji set
Korean	ISO 2022 IR 149	ISO 2022	ESC 02/04 02/09 04/03	ISO-IR 149	KS X 1001: 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 Time Synchronization Profiles

Time Synchronization Profiles: The Syngo Carbon Space acts as an NTP Client in the Maintain Time Transaction.

6.1.2 Association Level Security

- It is possible to configure whether the SCP will only answer to known AETs or to any AET. Please refer [Syngo Carbon IDM Dicom Conformance Statement](#) for more details.
- It is possible to configure secure communication to another DICOM nodes. Please refer [Syngo Carbon IDM Dicom Conformance Statement](#) for more details.

6.1.3 Application Level Security

- User must login with own username and password
- For configuration and Maintenance, Service Technician must login with a service key and separate password.
- To protect the Studies Service Retrieve Transaction interface from unauthorized access special attention is paid to security aspects. Only requests over HTTPS are accepted by the Syngo Carbon Space AE. On top, requests are required to contain valid authorization information by means of URL signatures (HMAC).

6.1.4 Audit Trail Message

To help ensure healthcare privacy and security in automated systems, usage data needs to be collected. This data is reviewed by administrative staff to verify that healthcare data is being used in accordance with the healthcare provider's data security requirements and to establish accountability for data use. This data collection and review process is called auditing and the data itself comprises the audit trail. Audit trails can be used for surveillance purposes to detect noteworthy events that may warrant further investigation. Auditing in Syngo Carbon Space is implemented according to the IHE profile Audit Trail and Node Authentication. All audit records are stored in Syngo Carbon IDM. Auditing is restricted to following events:

- Starting or stopping of applications
- Creation, access, update or deletion of DICOM studies
- Export
- Login or logout of users
- Security alerts

The audit messages can be analyzed with an Syngo Carbon IDM Audit Record Viewer. To use audit messages for effective system analyses, each audit message must be uniquely associated with a certain event. Each audit message provides various kinds of following information:

- Event ID
- Date and time of the event
- Status of the event
- User IDs
- Application IDs
- Object IDs
- Audit trail ID (used to aggregate audit messages in order to reconstruct audit trails)
- Audit source ID

6.1.4.1 Audit Trails Event IDs

The events recorded by audit messages are primarily identified via event IDs. The following list provides the event IDs used by Syngo Carbon Space as well as brief instructions for identifying the associated events:

1. 110100 (Application Activity)

This event ID is used for an Application Entity starting or stopping.

2. 110103 (DICOM Instances Accessed)

This event ID is used in audit messages which are generated when DICOM images are created, undeleted, accessed, updated or moved. To differentiate between the operations mentioned, one has to analyze the event action code ID as well as the objects stated in the audit message:

- C: DICOM images have been created.
- R: DICOM images have been accessed.
- U: DICOM images have been updated or moved.
- D: DICOM images of a DICOM study have been deleted.

Audit messages with this event ID are additionally equipped with the Series Instance UIDs (SOP Instance UIDs) of the affected DICOM series (DICOM images) are specified. If neither Series Instance UIDs nor SOP Instance UIDs are specified, the whole DICOM study has been affected. In addition, when DICOM images are updated, detailed information about the changed values is provided.

3. 110106 (Export)

This event ID indicates the export of DICOM images or generic files to a medium. Detailed information about the exported DICOM images or generic files can be obtained by analyzing the listed objects.

4. 110114 (User Authentication)

This event ID is used to audit a login or logout. To differentiate between the two kinds of authentication, the event type codes have to be evaluated.

5. 110113 (Security Alert)

This event ID in combination with the event type code 110131 (Software Configuration) indicates the creation, update, or deletion of a system configuration. To determine which operation has been performed, the life cycle information of the system configuration object has to be analyzed. Note that manipulations of the audit configuration are of particular interest because the audit configuration determines which events are audited; in this case one of the event type codes 110133 (Audit Recording Stopped) or 110134 (Audit Recording Started) is specified additionally.

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 7 to Table 20 or a subset of them, as defined in the IOD specific subsections below.

Table 7: 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			
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Table 8: 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 9: 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 10: 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/ GENERATED	ALWAYS	ALWAYS			
Series Description	(0008,103E)	USER/ SRC_INSTANCE	ALWAYS	ALWAYS			
Operators' Name	(0008,1070)	USER/ 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			

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
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 11: General Reference Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Referenced Image Sequence	(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 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			
Referenced Instance Sequence	(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			
Source Image Sequence	(0008,2112)	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 Code Sequence	(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			
Source Instance Sequence	(0042,0013)	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			

Table 12: 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 13: 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 14: 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			
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	VA38A		
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 15: 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 16: General Image Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Instance Number	(0020,0013)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Patient Orientation	(0020,0020)	SRC_INSTANCE	SRC_COPY	SRC_COPY			
Content Date	(0008,0023)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Content Time	(0008,0033)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Image Type	(0008,0008)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Position Reference Indicator	(0020,1040)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Image Comments	(0020,4000)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Frame Comments	(0020,9158)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Frame of Reference UID	(0020,0052)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Burned In Annotation	(0028,0301)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Lossy Image Compression	(0028,2110)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

Table 17: 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			

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
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 18: 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			
>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 19: 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 20: 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			
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 21: Basic Text SR IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
Series	General Series Module	Table 10	ALWAYS
	SR Document Series Module	Table 22	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
SR Document	SR Document General Module	Table 23	ALWAYS

IE	Module	Reference	Presence of Module
	SR Document Content Module	Table 24	ALWAYS
	SOP Common Module	Table 20	ALWAYS
Private Attributes	Private Attribute Module	Table 75	ALWAYS

Table 22: 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 Instances UID	(0020,000E)	SRC_INSTANCE/GENERATED	ALWAYS	ALWAYS			
Series Number	(0020,0011)	SRC_INSTANCE/GENERATED	ALWAYS	ALWAYS			

Table 23: 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			
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 24: 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	ALWAYS	ALWAYS			This is the Root Content Item

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
>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 25: Segmentation IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	CONDITIONAL: Attributes of this module are not present in case of emergency case.
Series	General Series Module	Table 10	ALWAYS
	Segmentation Series Module	Table 29	ALWAYS
Frame of Reference	Frame of Reference Module	Table 13	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
	Enhanced General Equipment Module	Table 29	ALWAYS
Image	General Image Module	Table 16	ALWAYS
	Image Pixel Module	Table 17	ALWAYS
	Segmentation Image Module	Table 31	ALWAYS
	Multi-frame Functional Groups Module	Table 26	ALWAYS
	Multi-frame Dimension Module	Table 28	ALWAYS
	SOP Common Module	Table 20	ALWAYS
Private Attributes	Private Attribute Module	Table 76	ALWAYS

Table 26: 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/ GENERATED	ALWAYS	ALWAYS			
Please refer Multi-Frame Functional Group Sequences Table. One or more items may present.							
Per-Frame Functional Groups Sequence	(5200,9230)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Please refer Multi-Frame Functional Group Sequences Table. One or more items may present.							

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Instance Number	(0020,0013)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Content Date	(0008,0023)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Content Time	(0008,0033)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Number of Frames	(0028,0008)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

Table 27: 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/ 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			
>>>Procedure Step Code Sequence	(0040,A170)	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			
>>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			

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

Table 28: Multi-frame Dimension Module

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

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
>Dimension Organization UID	(0020,9164)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

Table 29: 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	VA38A		

Table 30: 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/ GENERATED	ALWAYS	ALWAYS	>1000		In case of derived objects depending on the availability in the source.
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 31: 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/ GENERATED	ALWAYS	ALWAYS			
Content Label	(0070,0080)	SRC_INSTANCE/ 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/ GENERATED	ALWAYS	ALWAYS			

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
		GENERATED					
Bits Stored	(0028,0101)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
High Bit	(0028,0102)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Lossy Image Compression	(0028,2110)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Lossy Image Compression Ratio	(0028,2112)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Lossy Image Compression Method	(0028,2114)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Segmentation Type	(0062,0001)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	BINARY FRACTIONAL		
Segment Sequence	(0062,0002)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Include Table 32 : Segment Description Macro Attributes							

Table 32: Segment Description Macro Attributes

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Segment Number	(0062,0004)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Segment Label	(0062,0005)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Segment Description	(0062,0006)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Segment Algorithm Type	(0062,0008)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	AUTOMATIC = calculated segment SEMIAUTOMAT IC = calculated segment with user assistance MANUAL = user-entered segment		
Segment Algorithm Name	(0062,0009)	SRC_INSTANCE/ GENERATED	CONDITIO NAL	CONDITIONAL	Required if Segment Algorithm Type (0062,0008) is not MANUAL.		
Segment Property Category Code Sequence	(0062,0003)	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			

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Segmented Property Type Code Sequence	(0062,000F)	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			

7.1.1.4 Raw Data IOD

Table 33: Raw Data IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	ALWAYS
Series	General Series Module	Table 10	ALWAYS
Frame of Reference	Frame of Reference Module	Table 13	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
Raw Data	Acquisition Context Module	Table 49	ALWAYS
	Raw Data Module	Table 34	ALWAYS
	SOP Common Module	Table 20	ALWAYS

Table 34: Raw Data Module

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

7.1.1.5 CT Image IOD

Table 35: CT Image IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	CONDITIONAL: Attributes of this module are not present in case of emergency case, or when not delivered by MWL

IE	Module	Reference	Presence of Module
Series	General Series Module	Table 10	ALWAYS
Frame of Reference	Frame of Reference Module	Table 13	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
Acquisition	General Acquisition Module	Table 12	ALWAYS
Image	General Image Module	Table 16	ALWAYS
	General Reference Module	Table 11	CONDITIONAL (If present in source image)
	Image Plane Module	Table 15	ALWAYS
	Image Pixel Module	Table 17	ALWAYS
	Contrast/Bolus Module	Table 19	CONDITIONAL (If present in source image)
	VOI LUT Module	Table 18	CONDITIONAL (If present in source image)
	CT Image Module	Table 36	ALWAYS
	SOP Common Module	Table 20	ALWAYS
Private Attributes	Private Attribute Module	Table 77	ALWAYS

Table 36: CT Image 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			
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			
Rescale Intercept	(0028,1052)	SRC_INSTANCE	SRC_COPY	SRC_COPY			
Rescale Slope	(0028,1053)	SRC_INSTANCE	SRC_COPY	SRC_COPY			
Rescale Type	(0028,1054)	SRC_INSTANCE	SRC_COPY	SRC_COPY			
KVP	(0018,0060)	SRC_INSTANCE	SRC_COPY	SRC_COPY			
Acquisition Number	(0020,0012)	SRC_INSTANCE	SRC_COPY	SRC_COPY			

7.1.1.6 MR Image IOD

Table 37: MR Image IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	ALWAYS
Series	General Series Module	Table 10	ALWAYS
Frame of Reference	Frame of Reference Module	Table 13	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS

IE	Module	Reference	Presence of Module
Image	General Image Module	Table 16	ALWAYS
	General Reference Module	Table 11	CONDITIONAL
	Image Plane Module	Table 15	ALWAYS
	Image Pixel Module	Table 17	ALWAYS
	Contrast/Bolus Module	Table 19	CONDITIONAL (If present in source image)
	MR Image Module	Table 38	ALWAYS
	VOI LUT Module	Table 18	ALWAYS
	SOP Common Module	Table 20	ALWAYS
Private Attributes	Private Attributes Module	Table 77	ALWAYS

Table 38: MR Image 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			
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			
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 39: Secondary Capture Image IODModules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS

IE	Module	Reference	Presence of Module
	Patient Study Module	Table 9	ALWAYS
Series	General Series Module	Table 10	ALWAYS
Frame of Reference	Frame of Reference Module	Table 13	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
	SC Equipment	Table 40	ALWAYS
Acquisition	General Acquisition Module	Table 12	ALWAYS
Image	General Image Module	Table 16	ALWAYS
	General Reference Module	Table 11	ALWAYS
	Image Pixel Module	Table 17	ALWAYS
	SC Image Module	Table 41	ALWAYS
	SOP Common Module	Table 20	ALWAYS
	VOI LUT Module	Table 18	CONDITIONAL
Private Attributes	Siemens Syngo Parked Views Module	Table 42	CONDITIONAL
	Private Attributes Module	Table 77	ALWAYS

Table 40: SC Equipment Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Conversion Type	(0008,0064)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	WSD		
Secondary Capture Device ID	(0018,1010)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	Syngo Carbon Space		
Secondary Capture Device Manufacturer	(0018,1016)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	Siemens Healthineers		
Secondary Capture Device Software Versions	(0018,1019)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	VA38A		

Table 41: SC Image Module

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

Table 42: 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), (0033, SIEMENS SYNGO PARKED VIEWS, 73), (0033, SIEMENS SYNGO PARKED VIEWS, 74), (0033, SIEMENS SYNGO PARKED VIEWS, 75) 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), (0033, SIEMENS SYNGO PARKED	Sequence contains DICOM presentation state object

Attribute Name	Tag	VR	VM	Contains PHI	Presence of Value	Conditions	Description
						VIEWS, 73), (0033, SIEMENS SYNGO PARKED VIEWS, 74), (0033, SIEMENS SYNGO PARKED VIEWS, 75) are all present	
Parked Views Offset	(0033, SIEMENS SYNGO PARKED VIEWS, 73)	IS	1	NO	VALUE_ CONDITIONAL	(0033, SIEMENS SYNGO PARKED VIEWS, 71), (0033, SIEMENS SYNGO PARKED VIEWS, 72), (0033, SIEMENS SYNGO PARKED VIEWS, 74), (0033, SIEMENS SYNGO PARKED VIEWS, 75) 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), (0033, SIEMENS SYNGO PARKED VIEWS, 72), (0033, SIEMENS SYNGO PARKED VIEWS, 73), (0033, SIEMENS SYNGO PARKED VIEWS, 75) 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), (0033, SIEMENS SYNGO PARKED VIEWS, 72), (0033, SIEMENS SYNGO PARKED VIEWS, 73), (0033, SIEMENS SYNGO PARKED VIEWS, 74) 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 (0033, SIEMENS SYNGO PARKED VIEWS, 92) are present	Determine whether data are base or overlay

Attribute Name	Tag	VR	VM	Contains PHI	Presence 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 (0033, SIEMENS SYNGO PARKED VIEWS, 92) 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 (0033, SIEMENS SYNGO PARKED VIEWS, 91) 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 (0033, SIEMENS SYNGO PARKED VIEWS, 96) 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 (0033, SIEMENS SYNGO PARKED VIEWS, 95), (0033, SIEMENS SYNGO PARKED VIEWS, 6) 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 (0033, SIEMENS SYNGO PARKED VIEWS, 93), (0033, SIEMENS SYNGO PARKED VIEWS, 94) 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 (0033, SIEMENS SYNGO PARKED VIEWS, 93), (0033, SIEMENS SYNGO PARKED VIEWS, 94) 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 43: Enhanced MR Image IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	CONDITIONAL(In case of derived objects depending on the availability in the source.)
Series	General Series Module	Table 10	ALWAYS
	MR Series	Table 44	ALWAYS
Frame Of Reference	Frame of Reference Module	Table 13	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
	Enhanced General Equipment Module	Table 28	ALWAYS
Image	Image Pixel Module	Table 17	ALWAYS
	Enhanced Contrast/Bolus Module	Table 45	CONDITIONAL (Depending on the availability in the source.)
	Multi-frame Functional Groups Module	Table 46	ALWAYS
	Multi-frame Dimension Module	Table 28	ALWAYS
	Acquisition Context Module	Table 50	ALWAYS
	Enhanced MR Image Module	Table 51	ALWAYS
	SOP Common Module	Table 20	ALWAYS
	Common Instance Reference Module	Table 70	ALWAYS
Standard Extension Modules	Cardiac Synchronization Module	Table 72	CONDITIONAL (In case of cardiac triggering)
	Respiratory Synchronization Module	Table 73	CONDITIONAL (In case of respiratory triggering)
	Bulk Motion Synchronization Module	Table 74	CONDITIONAL (In case of bulk motion triggering)
	Supplemental Palette Color Lookup Table Module	Table 49	CONDITIONAL (In case of Color LUTs)
Private Attributes	Private Attributes Module	Table 77	ALWAYS

Table 44: MR Series Module

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

Table 45: 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 46: 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/ GENERATED	ALWAYS	ALWAYS			
>Include one or more Functional Group Macros Table-47							
Per-Frame Functional Groups Sequence	(5200,9230)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Include one or more Functional Group Macros Table-47							
Instance Number	(0020,0013)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Content Date	(0008,0023)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Content Time	(0008,0033)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Number of Frames	(0028,0008)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

Table 47: Functional Group Macros

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Pixel Measures Sequence	(0028,9110)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Pixel Spacing	(0018,0030)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Slice Thickness	(0028,0050)	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			

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

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Trigger Delay Time							
Temporal Position Sequence	(0020,9310)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Temporal Position Time Offset	(0020,930D)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Referenced Image Sequence	(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			
Derivation Image Sequence	(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/ GENERATED	ALWAYS	ALWAYS			
Cardiac Synchronization Sequence	(0018,9118)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Nominal Percentage of Cardiac Phase	(0020,9241)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Nominal Cardiac Trigger Delay Time	(0020,9153)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Actual Cardiac Trigger Delay Time	(0020,9252)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Nominal Cardiac Trigger Time Prior to R-peak	(0020,9154)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Actual Cardiac Trigger Time Prior to R-peak	(0020,9155)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Intervals Acquired	(0018,1083)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Intervals Rejected	(0018,1084)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Heart Rate	(0018,1088)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>R-R Interval Time Nominal	(0020,9251)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Low R-R Value	(0018,1081)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>High R-R Value	(0018,1082)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Frame Anatomy Sequence	(0020,9071)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Frame Laterality	(0020,9072)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Anatomic Region Sequence	(0008,2218)	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			
Pixel Value Transformation Sequence	(0028,9145)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Rescale Intercept	(0028,1052)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Rescale Slope	(0028,1053)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Rescale Type	(0028,1054)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

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

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
>Complex Image Component	(0008,9208)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Acquisition Contrast	(0008,9209)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Functional Settling Phase Frames Present	(0018,9622)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
MR Timing and Related Parameters Sequence	(0018,9112)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Repetition Time	(0018,0080)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Flip Angle	(0018,1314)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Echo Train Length	(0018,0091)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>RF Echo Train Length	(0018,9240)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Gradient Echo Train Length	(0018,9241)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Specific Absorption Rate Sequence	(0018,9239)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Specific Absorption Rate Definition	(0018,9179)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Specific Absorption Rate Value	(0018,9181)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Gradient Output Type*	(0018,9180)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Gradient Output*	(0018,9182)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Operation Mode Sequence*	(0018,9176)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Operating Mode Type	(0018,9177)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Operating Mode	(0018,9178)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
MR FOV/Geometry Sequence	(0018,9125)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>In-plane Phase Encoding Direction	(0018,1312)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>MR Acquisition Frequency Encoding Steps	(0018,9058)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>MR Acquisition Phase Encoding Steps in-plane	(0018,9231)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>MR Acquisition Phase Encoding	(0018,9232)	SRC_INSTANCE/ 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/ GENERATED	ALWAYS	ALWAYS			
>Percent Phase Field of View	(0018,0094)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
MR Metabolic Map Sequence	(0018,9152)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Metabolic Map Description	(0018,9080)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
MR Echo Sequence	(0018,9114)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Echo Number(s)	(0018,0086)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Effective Echo Time	(0018,9082)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
MR Modifier Sequence	(0018,9115)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Inversion Recovery	(0018,9009)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Inversion Times	(0018,9079)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Flow Compensation	(0018,9010)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Flow Compensation Direction	(0018,9183)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Spoiling	(0018,9016)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>T2 Preparation	(0018,9021)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Spectrally Selected Excitation	(0018,9026)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Spatial Pre-saturation	(0018,9027)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Partial Fourier	(0018,9081)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Partial Fourier Direction	(0018,9036)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Parallel Acquisition	(0018,9077)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Parallel Acquisition Technique	(0018,9078)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Parallel Reduction Factor In-plane	(0018,9069)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Parallel Reduction Factor out-of-plane	(0018,9155)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
MR Imaging Modifier Sequence	(0018,9006)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

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

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

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
>>ASL Slab Orientation	(0018,9255)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>ASL Mid Slab Position	(0018,9256)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>ASL Pulse Train Duration	(0018,9258)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>ASL Crusher Flag	(0018,9259)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>ASL Crusher Flow Limit	(0018,925A)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>ASL Crusher Description	(0018,925B)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>ASLBolus Cut-off Flag	(0018,925C)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>ASLBolus Cut-off Timing Sequence	(0018,925D)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>ASL Bolus Cut-off Delay Time	(0018,925F)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>ASL Bolus Cut-off Technique	(0018,925E)	SRC_INSTANCE/ 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 48: Multi-frame Dimension Module

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

Table 49: 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 50: 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 51: Enhanced MR Image 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			
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			
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 52: Grayscale Softcopy Presentation State IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	ALWAYS
Series	General Series Module	Table 10	ALWAYS
	Presentation Series Module	Table 57	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
Presentation State	Presentation State Identification Module	Table 58	ALWAYS
	Presentation State Relationship Module	Table 59	ALWAYS
	Presentation State Shutter Module	Table 60	ALWAYS
	Presentation State Mask Module	Table 61	ALWAYS
	Displayed Area Module	Table 56	ALWAYS
	Graphic Annotation Module	Table 53	CONDITIONAL
	Graphic Layer Module	Table 55	CONDITIONAL
	Modality LUT Module	Table 54	CONDITIONAL
	Softcopy VOI LUT	Table 18	
	Softcopy Presentation LUT Module	Table 62	ALWAYS
	SOP Common Module	Table 20	ALWAYS

Table 53: 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			

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
>>Bounding Box Text Horizontal Justification	(0070,0012)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Anchor Point	(0070,0014)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Anchor Point Visibility	(0070,0015)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Graphic Object Sequence	(0070,0009)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Graphic Annotation Units	(0070,0005)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Graphic Dimensions	(0070,0020)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Number of Graphic Points	(0070,0021)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Graphic Data	(0070,0022)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Graphic Type	(0070,0023)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

Table 54: Modality LUT Module

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

Table 55: Graphic Layer Module

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

Table 56: 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 TRUE SIZE 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 57: Presentation Series Module

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

Table 58: 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	The current date		
Presentation Creation Time	(0070,0083)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	The current time		

Table 59: 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 (0020,000D) in the enclosing Data Set.

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
Referenced Image Sequence	(0008,1140)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			

Table 60: 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 61: 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 62: 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 (2050,0010) is absent.	

7.1.1.10 Color Softcopy Presentation State IOD

Table 63: Color Softcopy Presentation State IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	ALWAYS
Series	General Series Module	Table 10	ALWAYS
	Presentation Series Module	Table 57	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
Presentation State	Presentation State Identification Module	Table 58	ALWAYS
	Presentation State Relationship Module	Table 59	ALWAYS
	Presentation State Shutter Module	Table 60	ALWAYS
	Displayed Area Module	Table 56	ALWAYS
	Graphic Annotation Module	Table 53	Present if Graphic Annotations are to be applied to referenced image(s).
	Graphic Layer Module	Table 55	Present if Graphic Annotations or Overlays are to be applied to referenced image(s)
	SOP Common Module	Table 20	ALWAYS
	ICC Profile Module	Table 64	ALWAYS

Table 64: ICC Profile Module

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

7.1.1.11 Pseudo-Color Softcopy Presentation State IOD

Table 65: Pseudo-Color Softcopy Presentation State IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	CONDITIONAL: Attributes of this module are not present in case of emergency case.
Series	General Series Module	Table 10	ALWAYS
	Presentation Series Module	Table 57	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
Presentation State	Presentation State Identification Module	Table 58	ALWAYS
	Presentation State Relationship Module	Table 59	ALWAYS
	Presentation State Shutter Module	Table 60	ALWAYS
	Presentation State Mask	Table 61	ALWAYS

IE	Module	Reference	Presence of Module
	Displayed Area Module	Table 56	ALWAYS
	Graphic Annotation Module	Table 53	Present if Graphic Annotations are to be applied to referenced image(s).
	Graphic Layer Module	Table 55	Present if Graphic Annotations or Overlays are to be applied to referenced image(s)
	Palette Color Lookup Table	Table 66	ALWAYS
	ICC Profile Module	Table 64	ALWAYS
	SOP Common Module	Table 20	ALWAYS

Table 66: 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/ 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	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	

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
						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 67: Real World Value Mapping IOD Modules

IE	Module	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
Series	General Series Module	Table 10	ALWAYS
	Real World Value Mapping Series Module	Table 68	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS
Real World Value Mapping	Real World Value Mapping Module	Table 69	ALWAYS
	Common Instance Reference Module	Table 70	ALWAYS
	SOP Common Module	Table 20	ALWAYS

Table 68: 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 69: Real World Value Mapping Module

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
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
Instance Number	(0020,0013)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
Private Creator	(0029,0010)	FIXED	ALWAYS	ALWAYS	SIEMENS SYNGO RWVM		
RWVM Version	(0029, SIEMENS SYNGO RWVM,50)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	1.0		
Private Creator	(0031,0010)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS	SIEMENS SYNGO WORKFLOW		
WF Internal Patient UID	(0031, SIEMENS SYNGO WORKFLOW,10)	SRC_INSTANCE	SRC_COPY	SRC_COPY			
Referenced Image Real World Value Mapping Sequence	(0040,9094)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>Referenced Image Sequence	(0008,1140)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Reference d SOP Class UID	(0008,1150)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>>Reference d SOP Instance UID	(0008,1155)	SRC_INSTANCE/ GENERATED	ALWAYS	ALWAYS			
>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"		

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
>>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 70: 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			
>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 71: Enhanced MR Color Image IOD Modules

IE	Module Name	Reference	Presence of Module
Patient	Patient Module	Table 7	ALWAYS
Study	General Study Module	Table 8	ALWAYS
	Patient Study Module	Table 9	ALWAYS
Series	General Series Module	Table 10	ALWAYS
	MR Series	Table 44	ALWAYS
Frame Of Reference	Frame of Reference Module	Table 13	ALWAYS
Equipment	General Equipment Module	Table 14	ALWAYS

IE	Module Name	Reference	Presence of Module
Image	Enhanced General Equipment Module	Table 29	ALWAYS
	General Image Module	Table 16	ALWAYS
	Image Pixel Module	Table 17	ALWAYS
	Enhanced Contrast/Bolus Module	Table 45	CONDITIONAL
	Multi-frame Functional Groups Module	Table 46	ALWAYS
	Multi-frame Dimension Module	Table 28	ALWAYS
	Acquisition Context Module	Table 50	ALWAYS
	Enhanced MR Image Module	Table 51	ALWAYS
	ICC Profile Module	Table 64	ALWAYS
Standard Extension Modules	SOP Common Module	Table 20	ALWAYS
	Common Instance Reference Module	Table 70	ALWAYS
	Cardiac Synchronization Module	Table 72	CONDITIONAL
	Respiratory Synchronization Module	Table 73	CONDITIONAL
	Bulk Motion Synchronization Module	Table 74	CONDITIONAL

Table 72: 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			
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 73: 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			

Attribute Name	Tag	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
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 74: 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 75 : 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						
> Study Model	(0087,1020)	UT	1	SRC_INSTANCE	SRC_COPY	SRC_COPY			

Table 76 : 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			ALWAYS	YES		

Attribute Name	Tag	VR	VM	Source	Presence of Attribute	Presence of Value	Value	Conditions	Comments
				GENERATED	ALWAYS		NO		
> Segmentation Uneditable by User	(0029,1111)	CS	1	GENERATED	ALWAYS	ALWAYS	YES		
							NO		

Table 77 : 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			
>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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