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Digital Imaging and Communications in Medicine (DICOM)

Supplement 23: Structured Reporting Storage SOP Classes

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24 **DICOM Standards Committee**

1300 N. 17th Street

Rosslyn, Virginia 22209 USA

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Foreword

This Supplement to the DICOM Standard introduces the SR SOP Classes for transmission and storage of documents that describe or refer to any number of images or waveforms or to the specific features that they contain. The SR SOP Classes fully support conventional free text reports and provide the capability to record structured information that enhances the precision, clarity and value of clinical documents. The SR SOP Classes allow users to link text and other data to particular images and/or waveforms and to store the coordinates of findings so that users can see exactly what is being described in a report. In addition, users can label, index and retrieve clinically-relevant information using codes. SR SOP Classes can be used in a variety of clinical contexts. For example:

- in CT or MRI to convey the interpretation text, to record the DICOM identifiers of selected images and to denote the spatial coordinates of significant findings;
- in ultrasound to transmit measurements; and
- in cardiac catheterization laboratories to record a procedure log that time-stamps and describes significant measurements and interventions and link together all of the related images, waveforms, interpretation reports and related information into a convenient unit-record.

This draft Supplement to the DICOM Standard was developed according to DICOM Committee Procedures. The Supplement was developed in liaison with other Standards Organizations including HL7, CEN/TC 251 in Europe and MEDIS-DC, JAMI, and JIRA in Japan, with review by other organizations.

The DICOM standard is structured as a multi-part document using the guidelines established in the following document:

- ISO/IEC Directives, 1989 Part 3 - Drafting and Presentation of International Standards.

This document is a Supplement to the DICOM Standard. It is an extension to PS 3.3, 3.4, 3.5 and 3.6 of the published DICOM Standard which consists of the following parts:

- | | | |
|---------|---|---|
| PS 3.1 | - | Introduction and Overview |
| PS 3.2 | - | Conformance |
| PS 3.3 | - | Information Object Definitions |
| PS 3.4 | - | Service Class Specifications |
| PS 3.5 | - | Data Structures and Encoding |
| PS 3.6 | - | Data Dictionary |
| PS 3.7 | - | Message Exchange |
| PS 3.8 | - | Network Communication Support for Message Exchange |
| PS 3.9 | - | Point-to-Point Communication Support for Message Exchange |
| PS 3.10 | - | Media Storage and File Format |
| PS 3.11 | - | Media Storage Application Profiles |
| PS 3.12 | - | Media Formats and Physical Media |
| PS 3.13 | - | Print Management - Point-to-point Communication Support |
| PS 3.14 | - | Grayscale Standard Display Function |
| PS 3.15 | - | Security Profiles |

These Parts are independent but related documents.

Scope and Field of Application

4 This Supplement to the DICOM Standard specifies the SR IODs and the corresponding SR Storage SOP Classes. The Structured Reporting Entity Relationship Model enables query and retrieval of SR SOP Instances as Instance level entities in the DICOM Query/Retrieve Model.

8 Since this document proposes changes to existing Parts of DICOM the reader should have a working understanding of the Standard. This Supplement provides a means to reference SR Templates. The specification of these templates is not addressed by this Supplement and will be addressed in Supplement 53.

This proposed Supplement includes a number of Addenda to existing Parts of DICOM:

1. PS 3.3
2. PS 3.4
- 12 3. PS 3.5
4. PS 3.6

Part 3, Body Addendum

Add or revise the following to PS 3.3 Definitions

16 **3.13 CODES AND CONTROLLED TERMINOLOGY DEFINITIONS:**

The following definitions are used ~~in the specification of Interpretation Data Interchange:~~

~~**3.13.1 Baseline Context ID: Identifier of the Baseline Context Group.**~~

20 **3.13.2 Baseline Context Group:** Context Group that specifies the suggested Value Set for a Code Sequence Attribute.

3.13.3 Baseline Template: Template that specifies a suggested set of Properties and corresponding Value Sets.

~~**3.13.4 Baseline Template ID: Identifier of the Baseline Template.**~~

24

3.13.21 Defined Context Group: Context Group that specifies the Value Set for a Code Sequence Attribute that shall be used but which may be extended.

28 **3.13.22 Defined Template:** Template that specifies the set of Properties and corresponding Value Sets that shall be used but which may be extended.

3.13.23 Enumerated Context Group: Context Group that specifies the Value Set for a Code Sequence Attribute that shall be used and which shall not be extended.

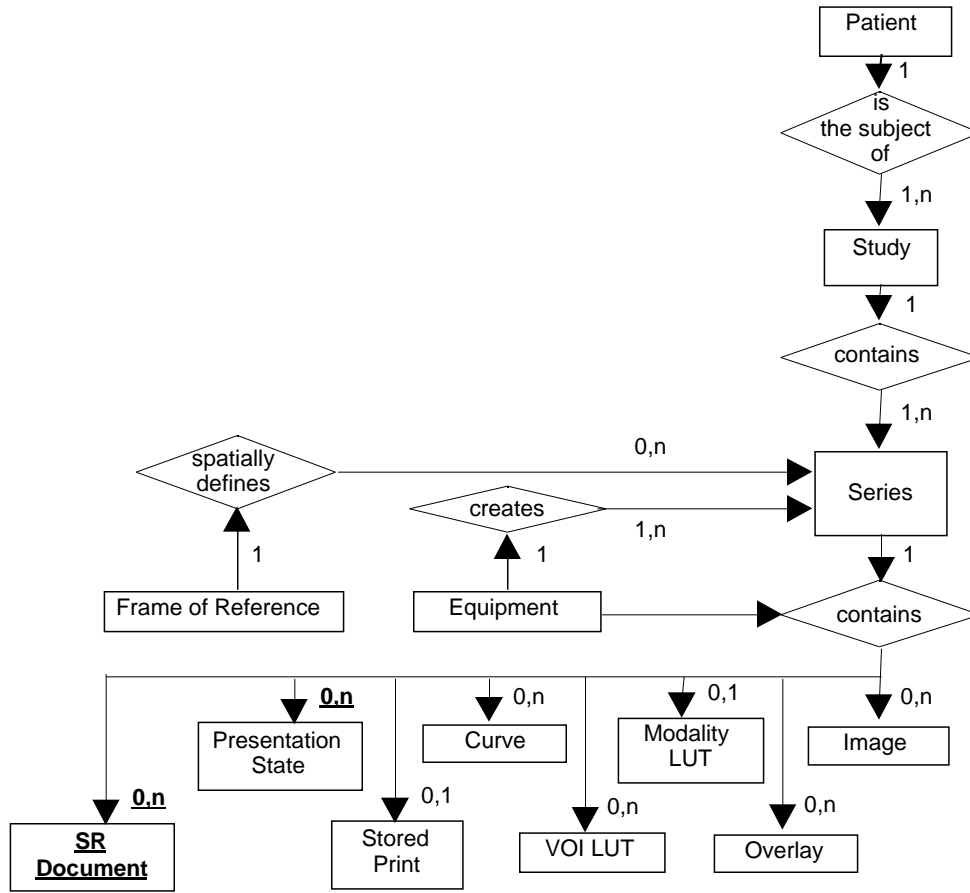
32 **3.13.24 Enumerated Template:** Template that specifies the set of Properties and corresponding Value Sets that shall be used and which shall not be extended.

Add the following to PS 3.3 Body

36

Part 3, Annex A Addendum

Update the E-R model in A.1.2 to include SR Document



- 40 Each Series shall contain at least one Curve IE, VOI Lookup Table IE, Overlay IE, Modality LUT IE, Stored Print IE, Presentation State IE, **SR Document IE** or Image IE.

Update Figure 7-1a DICOM MODEL OF THE REAL WORLD

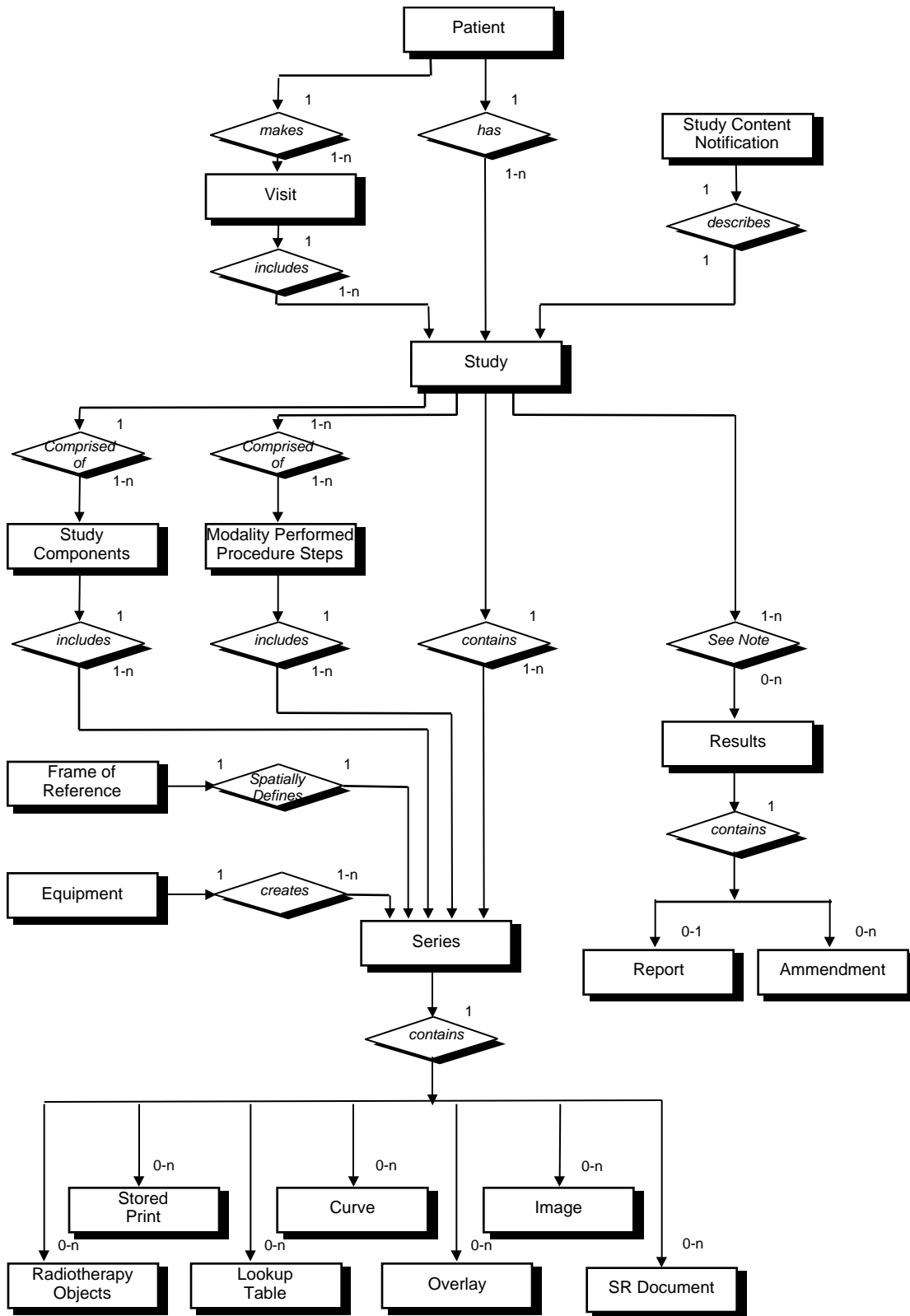
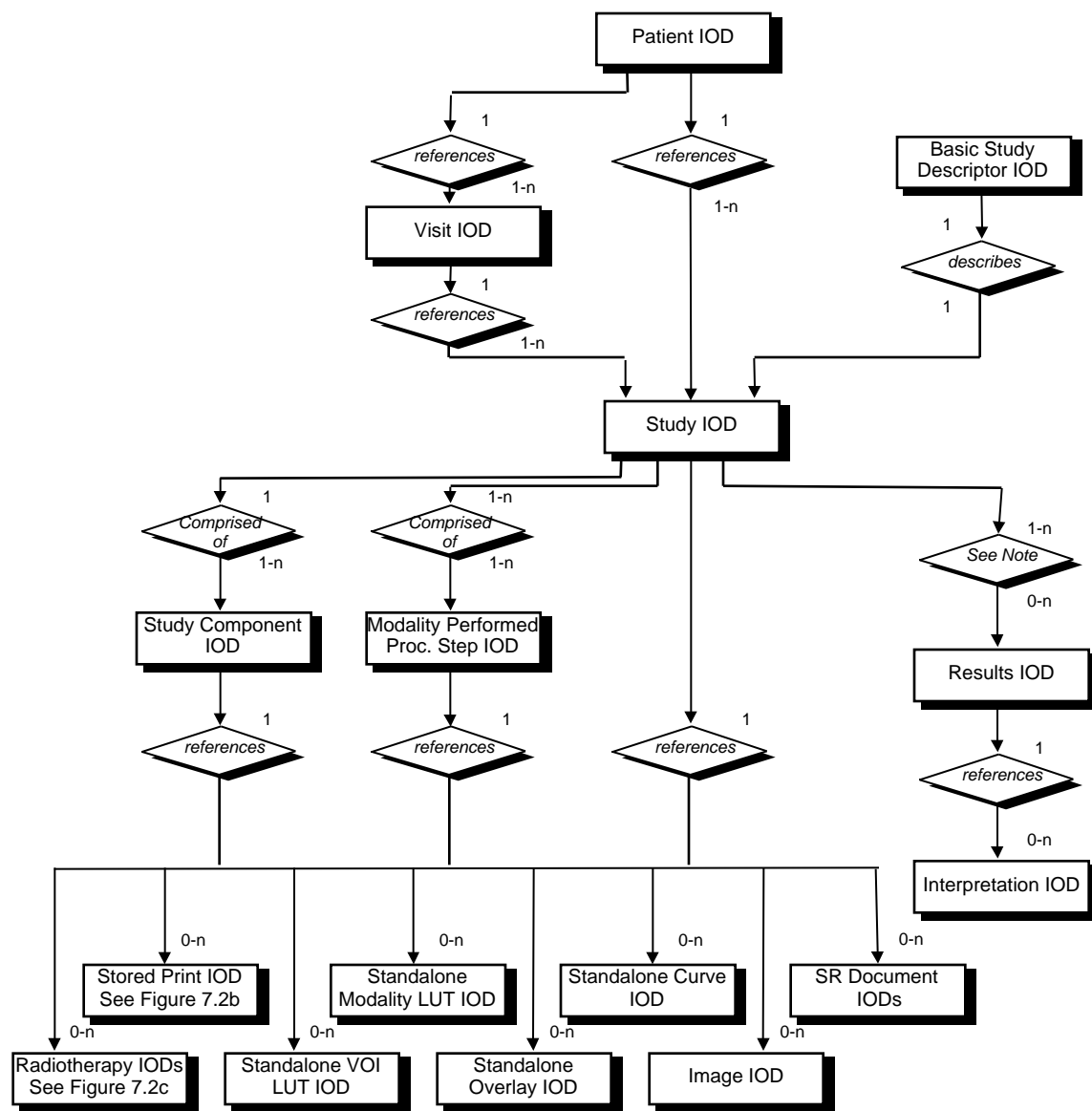


Figure 7-1a
DICOM MODEL OF THE REAL-WORLD

Update Figure 7-2a DICOM INFORMATION MODEL



**Figure 7-2a
DICOM INFORMATION MODEL**

A.1.2.1 PATIENT IE

56 The Patient IE defines the characteristics of a patient who is the subject of one or more medical studies which produce medical images.

The Patient IE is modality independent.

A.1.2.2 STUDY IE

60 The Study IE defines the characteristics of a medical study performed on a patient. A study is a collection of one or more series of medical images, presentation states, **SR documents**, overlays and/or curves which are logically related for the purpose of diagnosing a patient. Each study is associated with exactly one patient.

64 A study may include Composite SOP Instances that are created by a single modality, multiple modalities or by multiple devices of the same modality.

The Study IE is modality independent.

A.1.2.3 SERIES IE

68 The Series IE defines the Attributes which are used to group Composite SOP Instances into distinct logical sets. Each series is associated with exactly one Study.

The following criteria group Composite SOP Instances into a specific series:

- a. All Composite SOP Instances within a series must be of the same modality
- 72 b. If a specific Composite Instance IOD specifies the support of a Frame of Reference IE, all Composite SOP Instances within the series shall be spatially or temporally related to each other; therefore, each series is associated with exactly one Frame of Reference IE
- 76 c. If a specific Composite Instance IOD specifies the support of the Equipment IE, all Composite SOP Instances within the series shall be created by the same equipment; therefore, each series is associated with exactly one Equipment IE
- d. All Composite SOP Instances within a series shall have the same series information

80 Overlays and Curves may be grouped into a Series with or without Images. The Equipment IE and Frame of Reference IE are irrelevant to the Overlay IE and Curve IE.

84 Presentation States shall be grouped into Series without Images (i.e. in a different Series from the Series containing the Images to which they refer). The Frame of Reference IE is irrelevant to the Presentation State IE.

Note: The Series containing Presentation States and the Series containing the Images to which they refer are both contained within the same Study.

88 Waveforms shall be grouped into Series without Images. A Frame of Reference IE may apply to both Waveform Series and Image Series.

SR Documents shall be grouped into Series without Images. The Frame of Reference IE does not apply to SR Document Series.

92 ...

A.1.2.13 SR DOCUMENT IE

96 The SR Document IE defines the Attributes which describe the content of an SR Document. These include semantic context as well as Attributes related to document completion, verification and other characteristics. An SR Document SOP Instance is related to a single Series within a single Study.

<i>Update the Composite Module Table to include SR IODs and Modules</i>

IODs Modules	<u>Basic Text SR</u>	<u>Enhanced SR</u>	<u>Comprehensive SR</u>
Patient	<u>M</u>	<u>M</u>	<u>M</u>
Patient Summary			
Specimen Identification	<u>C</u>	<u>C</u>	<u>C</u>
General Study	<u>M</u>	<u>M</u>	<u>M</u>
Patient Study	<u>U</u>	<u>U</u>	<u>U</u>
Study Content			
General Series			
CR Series			
NM/PET Patient Orientation			
PET Series			
PET Isotope			
PET Multi-gated Acquisition			
RT Series			
DX Series			
Mammo Series			
Intra-oral Series			
Presentation Series			
<u>SR Document Series</u>	<u>M</u>	<u>M</u>	<u>M</u>
Frame Of Reference			
U S Frame of Ref.			
General Equipment	<u>M</u>	<u>M</u>	<u>M</u>
SC Equipment			
General Image			
Image Plane			
Image Pixel			
NM Image Pixel			
PaletteColor Lookup Table			
Contrast/ Bolus			
Cine			
Multi-frame			

NM Multi-frame			
Frame Pointers			
Mask			
Display Shutter			
Bitmap Display Shutter			
Device			
Therapy			
CR Image			
CT Image			
MR Image			
NM Image			
NM Isotope			
NM Detector			
NM TOMO Acquisition			
NM Multi-Gated Acquisition			
NM Phase			
NM Reconstruction			
US Region Calibration			
US Image			
SC Image			
PET Image			
X-Ray Image			
X-Ray Acquisition			
X-Ray Collimator			
X-Ray Table			
XRF Positioner			
X-Ray Tomo Acquisition			
X-Ray Acquisition Dose			
X-Ray Generation			
X-Ray Filtration			
X-Ray Grid			

XA Positioner			
DX Anatomy Imaged			
DX Image			
DX Detector			
DX Positioning			
Mammo Image			
Intra-oral Image			
VL Image			
Slide Coordinates			
RT Image			
RT Dose			
RT DVH			
Structure Set			
ROI Contour			
RT Dose ROI			
RT ROI Observations			
RT General Treatment Record			
RT Treatment Machine Record			
Measured Dose Reference Record			
Calculated Dose Reference Record			
RT Beams Session Record			
RT Brachy Session Record			
RT Treatment Summary Record			
RT General Plan			
RT Prescription			
RT Tolerance Tables			
RT Patient Setup			
RT Fraction Scheme			
RT Beams			

RT Brachy Application Setups			
Approval			
SR Document General	<u>M</u>	<u>M</u>	<u>M</u>
SR Document Content	<u>M</u>	<u>M</u>	<u>M</u>
Overlay Identification			
Overlay Plane			
Multi-frame Overlay			
Curve Identification			
Curve			
PET Curve			
Audio			
Displayed Area			
Overlay/Curve Activation			
Graphic Annotation			
Spatial Transformation			
Graphic Layer			
Modality LUT			
VOI LUT			
Softcopy VOI LUT			
Softcopy Presentation LUT			
Image Histogram			
LUT Identification			
Presentation State			
Acquisition Context			
SOP Common	<u>M</u>	<u>M</u>	<u>M</u>

A.35 STRUCTURED REPORT DOCUMENT INFORMATION OBJECT DEFINITIONS

A.35.1 Basic Text SR Information Object Definition

104 A.35.1.1 Basic Text SR Information Object Description

108 The Basic Text Structured Report (SR) IOD is intended for the representation of reports with minimal usage of coded entries (typically used in Document Title and headings) and a hierarchical tree of headings under which may appear text and subheadings. Reference to SOP Instances (e.g. images or waveforms or other SR Documents) is restricted to appear at the level of the leaves of this primarily textual tree. This structure simplifies the encoding of conventional textual reports as SR Documents, as well as their rendering.

A.35.1.2 Basic Text SR IOD Entity-Relationship Model

112 The E-R Model in Section A.1.2 of this Part applies to the Basic Text SR IOD. The Frame of Reference IE, and the IEs at the level of the Image IE in Section A.1.2 are not components of the Basic Text SR IOD. Table A.35.1-1 specifies the Modules of the Basic Text SR IOD.

A.35.1.3 Basic Text SR IOD Module Table

116 Table A.35.3-1 specifies the Modules of the Basic Text SR IOD.

**Table A.35.1-1
BASIC TEXT SR IOD MODULES**

IE	Module	Reference	Usage
Patient	Patient	C.7.1.1	M
	Specimen Identification	C.7.1.2	C - Required if the Observation Subject is a Specimen
Study	General Study	C.7.2.1	M
	Patient Study	C.7.2.2	U
Series	SR Document Series	C.17.1	M
Equipment	General Equipment	C.7.5.1	M
Document	SR Document General	C.17.2	M
	SR Document Content	C.17.3	M
	SOP Common	C.12.1	M

120 A.35.1.3.1 Basic Text SR IOD Content Constraints

A.35.1.3.1.1 Value Type

Value Type (0040,A040) in the Content Sequence (0040,A730) of the SR Document Content Module is constrained to the following Enumerated Values (see Table C.17.3-1 for Value Type definitions):

124 TEXT
CODE
DATETIME
DATE
128 TIME
UIDREF
PNAME
COMPOSITE
132 IMAGE

WAVEFORM
CONTAINER

136 **A.35.1.3.1.2 Relationship Constraints**

Relationships between Content Items in the content of this IOD shall be conveyed in the by-value mode. See Table C.17.3-2 for Relationship Type definitions.

140 Note: Relationships by-reference are forbidden. Therefore, Referenced Content Item Identifier (0040,DB73) is not present in any of the Content Items within the SR Document Content Module.

Table A.35.1-2 specifies the relationship constraints of this IOD.

144 **Table A.35.1-2
RELATIONSHIP CONTENT CONSTRAINTS FOR BASIC TEXT SR IOD**

Source Value Type	Relationship Type (Enumerated Values)	Target Value Type
CONTAINER	CONTAINS	TEXT, CODE, DATETIME, DATE, TIME, UIDREF, PNAME, COMPOSITE ¹ , IMAGE ¹ , WAVEFORM ¹ , CONTAINER
CONTAINER	HAS OBS CONTEXT	TEXT, CODE, DATETIME, DATE, TIME, UIDREF, PNAME
CONTAINER, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹	HAS ACQ CONTEXT	TEXT, CODE, DATETIME, DATE, TIME, UIDREF, PNAME
any type	HAS CONCEPT MOD	TEXT, CODE ²
TEXT	HAS PROPERTIES	TEXT, CODE, DATETIME, DATE, TIME, UIDREF, PNAME, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹
TEXT	INFERRED FROM	TEXT, CODE, DATETIME, DATE, TIME, UIDREF, PNAME, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹

Note: 1. Which SOP Classes the IMAGE, WAVEFORM or COMPOSITE Value Type may refer to, is documented in the Conformance Statement for an application (see PS 3.2 and PS 3.4).
148 2. The HAS CONCEPT MOD relationship is used to modify the meaning of the Concept Name of a Source Content Item, for example to provide a more descriptive explanation, a different language translation, or to define a post-coordinated concept.

152 **A.35.2 Enhanced SR Information Object Definition**

A.35.2.1 Enhanced SR Information Object Description

The Enhanced Structured Report (SR) IOD is a superset of the Basic Text SR IOD. It is also intended for the representation of reports with minimal usage of coded entries (typically Document Title and headings) and a hierarchical tree of headings under which may appear text and subheadings. In addition, it supports the use of numeric measurements with coded measurement names and units. Reference to SOP Instances (e.g. images or waveforms or SR Documents) is restricted to appear at the level of the leaves of this primarily textual tree. It enhances references to SOP Instances with spatial regions of interest (points, lines, circle, ellipse, etc.) and temporal regions of interest .
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A.35.2.2 Enhanced SR IOD Entity-Relationship Model

The E-R Model in Section A.1.2 of this Part applies to the Enhanced SR IOD. The Frame of Reference IE, and the IEs at the level of the Image IE in Section A.1.2 are not components of the Enhanced SR IOD. Table A.35.2-1 specifies the Modules of the Enhanced SR IOD.

A.35.2.3 Enhanced SR IOD Module Table

**Table A.35.2-1
ENHANCED SR IOD MODULES**

IE	Module	Reference	Usage
Patient	Patient	C.7.1.1	M
	Specimen Identification	C.7.1.2	C - Required if the Observation Subject is a Specimen
Study	General Study	C.7.2.1	M
	Patient Study	C.7.2.2	U
Series	SR Document Series	C.17.1	M
Equipment	General Equipment	C.7.5.1	M
Document	SR Document General	C.17.2	M
	SR Document Content	C.17.3	M
	SOP Common	C.12.1	M

A.35.2.3.1 Enhanced SR IOD Content Constraints

A.35.2.3.1.1 Value Type

Value Type (0040,A040) in the Content Sequence (0040,A730) of the SR Document Content Module is constrained to the following Enumerated Values (see Table C.17.3-1 for Value Type definitions):

- TEXT
- CODE
- NUM
- DATETIME
- DATE
- TIME
- UIDREF
- PNAME
- SCOORD
- TCOORD
- COMPOSITE
- IMAGE
- WAVEFORM
- CONTAINER

A.35.2.3.1.2 Relationship Constraints

Relationships between Content Items in the content of this IOD shall be conveyed in the by-value mode. See Table C.17.3-2 for Relationship Type definitions.

Note: Relationships by-reference are forbidden. Therefore, Referenced Content Item Identifier (0040,DB73) is not present in any of the Content Items within the SR Document Content Module.

Table A.35.2-2 specifies the relationship constraints of this IOD.

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**Table A.35.2-2
RELATIONSHIP CONTENT CONSTRAINTS FOR ENHANCED SR IOD**

Source Value Type	Relationship Type (Enumerated Values)	Target Value Type
CONTAINER	CONTAINS	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME, SCOORD, TCOORD, COMPOSITE ¹ , IMAGE ¹ , WAVEFORM ¹ , CONTAINER
CONTAINER	HAS OBS CONTEXT	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME
CONTAINER, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹	HAS ACQ CONTEXT	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME
any type	HAS CONCEPT MOD	TEXT, CODE ²
TEXT	HAS PROPERTIES	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹ , SCOORD, TCOORD
TEXT	INFERRED FROM	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹ , SCOORD, TCOORD
SCOORD	SELECTED FROM	IMAGE ¹
TCOORD	SELECTED FROM	SCOORD, IMAGE ¹ , WAVEFORM ¹

Note: 1. Which SOP Classes the IMAGE, WAVEFORM or COMPOSITE Value Type may refer to, is documented in the Conformance Statement for an application (see PS 3.2 and PS 3.4).

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2. The HAS CONCEPT MOD relationship is used to modify the meaning of the Concept Name of a Source Content Item, for example to provide a more descriptive explanation, a different language translation, or to define a post-coordinated concept.

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A.35.3 Comprehensive SR Information Object Definition

A.35.3.1 Comprehensive SR Information Object Description

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The Comprehensive SR IOD is a superset of the Basic Text SR IOD and the Enhanced SR IOD, which specifies a class of documents, the content of which may include textual and a variety of coded information, numeric measurement values, references to the SOP Instances and spatial or temporal regions of interest within such SOP Instances. Relationships by-reference are enabled between Content Items.

A.35.3.2 Comprehensive SR IOD Entity-Relationship Model

212

The E-R Model in Section A.1.2 of this Part applies to the Comprehensive SR IOD. The Frame of Reference IE, and the IEs at the level of the Image IE in Section A.1.2 are not components of the Comprehensive SR IOD. Table A.35.3-1 specifies the Modules of the Comprehensive SR IOD.

A.35.3.3 Comprehensive SR IOD Module Table

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**Table A.35.3-1
COMPREHENSIVE SR IOD MODULES**

IE	Module	Reference	Usage
Patient	Patient	C.7.1.1	M

	Specimen Identification	C.7.1.2	C - Required if the Observation Subject is a Specimen
Study	General Study	C.7.2.1	M
	Patient Study	C.7.2.2	U
Series	SR Document Series	C.17.1	M
Equipment	General Equipment	C.7.5.1	M
Document	SR Document General	C.17.2	M
	SR Document Content	C.17.3	M
	SOP Common	C.12.1	M

A.35.3.3.1 Comprehensive SR IOD Content Constraints

220 **A.35.3.3.1.1 Value Type**

Value Type (0040,A040) in the Content Sequence (0040,A730) of the SR Document Content Module is constrained to the following Enumerated Values (see Table C.17.3-1 for Value Type definitions):

- 224 TEXT
- CODE
- NUM
- DATETIME
- DATE
- 228 TIME
- UIDREF
- PNAME
- SCOORD
- 232 TCOORD
- COMPOSITE
- IMAGE
- WAVEFORM
- 236 CONTAINER

A.35.3.3.1.2 Relationship Constraints

240 Relationships between content items in the content of this IOD may be conveyed either by-value or by-reference. Table A.35.3-2 specifies the relationship constraints of this IOD. See Table C.17.3-2 for Relationship Type definitions.

**Table A.35.3-2
RELATIONSHIP CONTENT CONSTRAINTS FOR COMPREHENSIVE SR IOD**

Source Value Type	Relationship Type (Enumerated Values)	Target Value Type
CONTAINER	CONTAINS	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME, SCOORD, TCOORD, COMPOSITE ¹ , IMAGE ¹ , WAVEFORM ¹ , CONTAINER.
TEXT, CODE, NUM, CONTAINER	HAS OBS CONTEXT	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME
CONTAINER, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹	HAS ACQ CONTEXT	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME, CONTAINER (See below).
any type	HAS CONCEPT MOD	TEXT, CODE ²
TEXT, CODE, NUM	HAS PROPERTIES	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹ , SCOORD, TCOORD, CONTAINER (See below).
TEXT, CODE, NUM	INFERRED FROM	TEXT, CODE, NUM, DATETIME, DATE, TIME, UIDREF, PNAME, IMAGE ¹ , WAVEFORM ¹ , COMPOSITE ¹ , SCOORD, TCOORD, CONTAINER (See below).
SCOORD	SELECTED FROM	IMAGE ¹
TCOORD	SELECTED FROM	SCOORD, IMAGE ¹ , WAVEFORM ¹

244

Note: 1. Which SOP Classes the IMAGE, WAVEFORM or COMPOSITE Value Type may refer to, is documented in the Conformance Statement for an application (see PS 3.2 and PS 3.4).

248 2. The HAS CONCEPT MOD relationship is used to modify the meaning of the Concept Name of a Source Content Item, for example to provide a more descriptive explanation, a different language translation, or to define a post-coordinated concept.

252 Content Items with a Value Type of CONTAINER shall only be the target of relationships other than CONTAINS, if this relationship is conveyed by-reference.

Relationships by-reference to ancestor Content Items are forbidden in this IOD to prevent loops.

Part 3, Annex C Addendum

Add the following Modality type to Section C.7.3.1.1.1

256 **C.7.3.1 GENERAL SERIES MODULE (MODALITY TYPES)**

SR = SR Document

Add the SR Document Series Module

C.17 SR DOCUMENT MODULES

260 **C.17.1 SR Document Series Module**

Table C.17-1 defines the Attributes of the SR Document Series. A Series of SR Documents may contain any number of SR Documents.

264 Note: Series of SR Documents are separate from Series of Images or other Composite SOP Instances. SR Documents do not reside in a Series of Images or other Composite SOP Instances.

**Table C.17-1
SR DOCUMENT SERIES MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	Modality type. Enumerated Value: SR = SR Document
Series Instance UID	(0020,000E)	1	Unique identifier of the Series. Note: No SR-specific semantics are specified.
Series Number	(0020,0011)	1	A number that identifies the Series. Note: No SR-specific semantics are specified.
Referenced Study Component Sequence	(0008,1111)	2	Uniquely identifies the Performed Procedure Step SOP Instance for which the Series is created. Only a single Item shall be permitted in this sequence. Notes: 1. The Study Component referred to by this Attribute is the Performed Procedure Step during which this Document is generated. 2. If this Document is generated during the same Modality Performed Procedure Step as the evidence in the current interpretation procedure, this attribute may contain reference to that Modality Performed Procedure Step. 3. This Attribute is not used to convey reference to the evidence in the current interpretation procedure. See Current Requested Procedure Evidence Sequence (0040,A375). 4. This Sequence may be sent zero length if the Performed Procedure Step is unknown.

>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Study Component Sequence (0008,1111) is sent.
> Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Study Component Sequence (0008,1111) is sent.

268

Add the SR DOCUMENT GENERAL MODULE

C.17.2 SR DOCUMENT GENERAL MODULE

272 Table C.17-2 defines the general Attributes of an SR Document Instance. These Attributes identify the SR Document and provide context for the entire document.

**Table C.17-2
SR DOCUMENT GENERAL MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Instance Number	(0020,0013)	1	A number that identifies the SR Document.
Completion Flag	(0040,A491)	1	The estimated degree of completeness of this SR Document with respect to externally defined criteria in a manner specified in the Conformance Statement. Note: It may be desirable to make these criteria adaptable to local policies or user decisions. Enumerated Values: PARTIAL = Partial content. COMPLETE = Complete content.
Completion Flag Description	(0040,A492)	3	Explanation of the value sent in Completion Flag (0040,A491).
Verification Flag	(0040,A493)	1	Indicates whether this SR Document is Verified. Enumerated Values: UNVERIFIED = Not attested to. VERIFIED = Attested to by a Verifying Observer Name (0040,A075) who is accountable for its content. Note: The intent of this specification is that the "prevailing final version" of an SR Document is the version having the most recent Verification DateTime (0040,A030), Completion Flag (0040,A491) of COMPLETE and Verification Flag (0040,A493) of VERIFIED.
Content Date	(0008,0023)	1	The date the document content creation started.
Content Time	(0008,0033)	1	The time the document content creation started.

Verifying Observer Sequence	(0040,A073)	1C	The person or persons authorized to verify documents of this type and accept responsibility for the content of this document. One or more Items may be included in this sequence. Required if Verification Flag (0040,A493) is VERIFIED.
>Verifying Observer Name	(0040,A075)	1	The person authorized by the Verifying Organization (0040,A027) to verify documents of this type and who accepts responsibility for the content of this document. a
>Verifying Observer Identification Code Sequence	(0040,A088)	2	Coded identifier of Verifying Observer. Zero or one Items shall be permitted in this sequence.
<i>>>Include 'Code Sequence Macro' Table 8.8-1</i>			
>Verifying Organization	(0040,A027)	1	Organization to which the Verifying Observer Name (0040,A075) is accountable for this document in the current interpretation procedure.
>Verification DateTime	(0040,A030)	1	Date and Time of verification by the Verifying Observer Name (0040,A075).
Predecessor Documents Sequence	(0040,A360)	1C	Shall refer to SR SOP Instances (e.g. prior or provisional reports) whose content has been wholly or partially included in this document with or without modification. One or more Items may be included in this sequence. Required if this document includes content from other documents. Note: The amendment process of an existing SR Document is not explicitly described, but several approaches may be considered. One may choose, for example, to create a new SR Document that includes the original content with any amendments applied or included. The structure of this amended SR Document may or may not reflect what was amended. However, the use of the Predecessor Document Sequence allows tracing back to the input SR Document, which in this case is the previous version.
<i>>Include 'SOP Instance Reference Macro' Table C.17-3</i>			

Identical Documents Sequence	(0040,A525)	1C	Duplicates of this document, stored with different SOP Instance UIDs. One or more Items may be included in this sequence. Required if this document is stored with different SOP Instance UIDs in one or more other Studies. See C.17.2.2 for further explanation.
<i>>Include 'SOP Instance Reference Macro' Table C.17-3</i>			
Referenced Request Sequence	(0040,A370)	1C	Identifies Requested Procedures which are being fulfilled (completely or partially) by creation of this Document. One or more Items may be included in this sequence. Required if this Document fulfills at least one Requested Procedure.
>Study Instance UID	(0020,000D)	1	Unique identifier for the Study.
>Referenced Study Sequence	(0008,1110)	2	Uniquely identifies the Study SOP Instance. Only a single Item shall be permitted in this sequence.
>>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the SOP Class
>>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the SOP Instance.
>Accession Number	(0008,0050)	2	A departmental IS generated number which identifies the order for the Study.
>Placer Order Number/Imaging Service Request	(0040,2016)	2	The order number assigned to the Imaging Service Request by the party placing the order.
>Filler Order Number/Imaging Service Request	(0040,2017)	2	The order number assigned to the Imaging Service Request by the party filling the order.
>Requested Procedure ID	(0040,1001)	2	Identifier of the related Requested Procedure
>Requested Procedure Description	(0032,1060)	2	Institution-generated administrative description or classification of Requested Procedure.
>Requested Procedure Code Sequence	(0032,1064)	2	A sequence that conveys the requested procedure. Zero or one Item may be included in this sequence.
<i>>>Include 'Code Sequence Macro' Table 8.8-1</i>		<i>No Baseline Context ID Number is specified.</i>	
Performed Procedure Code Sequence	(0040,A372)	2	A Sequence that conveys the codes of the performed procedures pertaining to this SOP Instance. Zero or more Items may be included in this sequence.
<i>>Include 'Code Sequence Macro' Table 8.8-1</i>		<i>No Baseline Context ID Number is specified.</i>	

Current Requested Procedure Evidence Sequence	(0040,A375)	1C	Full set of Composite SOP Instances created to satisfy the current Requested Procedure(s) for which this SR Document is generated. One or more Items may be included in this sequence. Required if Composite Objects were acquired in order to satisfy the Requested Procedure(s) for which the SR Document is generated. See C.17.2.3 for further explanation.
<i>>Include 'SOP Instance Reference Macro' Table C.17-3</i>			
Pertinent Other Evidence Sequence	(0040,A385)	1C	Other Composite SOP Instances that are considered to be pertinent evidence by the creator of this SR Document. This evidence must have been acquired in order to satisfy Requested Procedures other than the one(s) for which this SR Document is generated. One or more Items may be included in this sequence. Required if pertinent evidence from other Requested Procedures needs to be recorded. See C.17.2.3 for further explanation.
<i>>Include 'SOP Instance Reference Macro' Table C.17-3</i>			

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C.17.2.1 SOP Instance Reference Macro

Table C.17-3 specifies the Attributes that reference a SOP Instance.

Table C.17-3
SOP INSTANCE REFERENCE MACRO ATTRIBUTES

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Attribute Name	Tag	Type	Attribute Description
Study Instance UID	(0020,000D)	1	Unique identifier for the Study
Referenced Series Sequence	(0008,1115)	1	Sequence of Repeating Items where each Item includes the Attributes of a Series containing referenced Composite Object(s). One or more Items may be included in this sequence
>Series Instance UID	(0020,000E)	1	Unique identifier of a Series that is part of this Study and contains the referenced Composite Object(s).
>Retrieve AE Title	(0008,0054)	3	Title of the DICOM Application Entity where the Composite Object(s) may be retrieved on the network.
>Storage Media File-Set ID	(0088,0130)	3	The user or implementation specific human readable identifier that identifies the Storage Media on which the Composite Object (s) reside.
>Storage Media File-Set UID	(0088,0140)	3	Uniquely identifies the Storage Media on which the Composite Object (s) reside.

>Referenced SOP Sequence	(0008,1199)	1	References to Composite Object SOP Class/SOP Instance pairs that are part of the Study defined by Study Instance UID and the Series defined by Series Instance UID (0020,000E). One or more Items may be included in this sequence
>>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.
>>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.

C.17.2.2 Identical Documents Sequence

284 If identical copies of an SR Document are to be included in multiple Studies then the entire SR Document shall be duplicated with appropriate changes for inclusion into the different Studies (i.e. Study Instance UID, Series Instance UID, SOP Instance UID, Identical Documents Sequence etc.). The Identical Documents Sequence Attribute in each SOP Instance shall contain references to all other duplicate SOP Instances.

288 Note: If an SR Document contains an Identical Documents Sequence then it will not be further duplicated without producing a new complete set of duplicate SOP Instances with re-generated Identical Documents Sequences. This is a consequence of the rules for modification of SR Document content in PS3.4. For example, if there are two identical reports and an application is creating a third identical report, then the
292 first two reports must be re-generated in order that their Identical Documents Sequence will reference the new duplicate document and all other identical documents.

296 If a new SR Document is created using content from an SR Document that contains an Identical Documents Sequence and is part of the same Requested Procedure, then the new SR Document shall only contain a new Identical Documents Sequence if the new SR Document is duplicated. The Predecessor Documents Sequence in all the new SR Documents shall contain references to the original SR Document and all its duplicates as well as any other documents from which content is included.

300 Note: It is up to an implementation to decide whether a new SR Document is duplicated across multiple Studies. This may require user input to make the decision.

C.17.2.3 Current Requested Procedure Evidence Sequence and Pertinent Other Evidence Sequence

304 The intent of the Current Requested Procedure Evidence Sequence is to reference all evidence created in order to satisfy the current Requested Procedure(s) for this SR Document. This shall include, but is not limited to, all current evidence referenced in the content tree.

308 The Pertinent Other Evidence Sequence attribute is used to reference all other evidence considered pertinent for this SR Document that is not listed in the Current Requested Procedure Evidence Sequence. This requires that the same SOP Instance shall not be referenced in both of these Sequences.

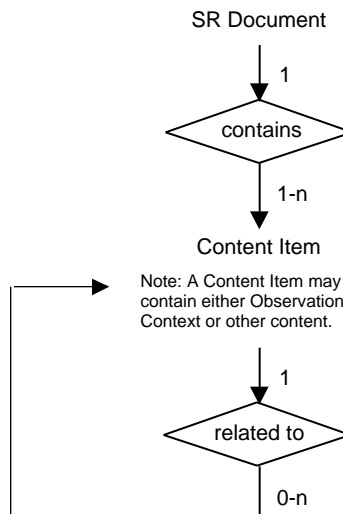
312 *Add the SR Document Content Module*

C.17.3 SR Document Content Module

This section specifies the Attributes contained in the SR Document Content Module. The Attributes in this Module convey the content of an SR Document.

316 The Module consists of a single root Content Item that is the root of the SR Document tree. The root
Content Item is of type CONTAINER, and its Content Sequence conveys either directly or indirectly
through further nested Content Sequences, all of the other Content Items in the document. This root
320 Content Item shall have a heading in the Concept Name Code Sequence (0040,A043) that conveys the
title of the SR Document, i.e. the Document Title.

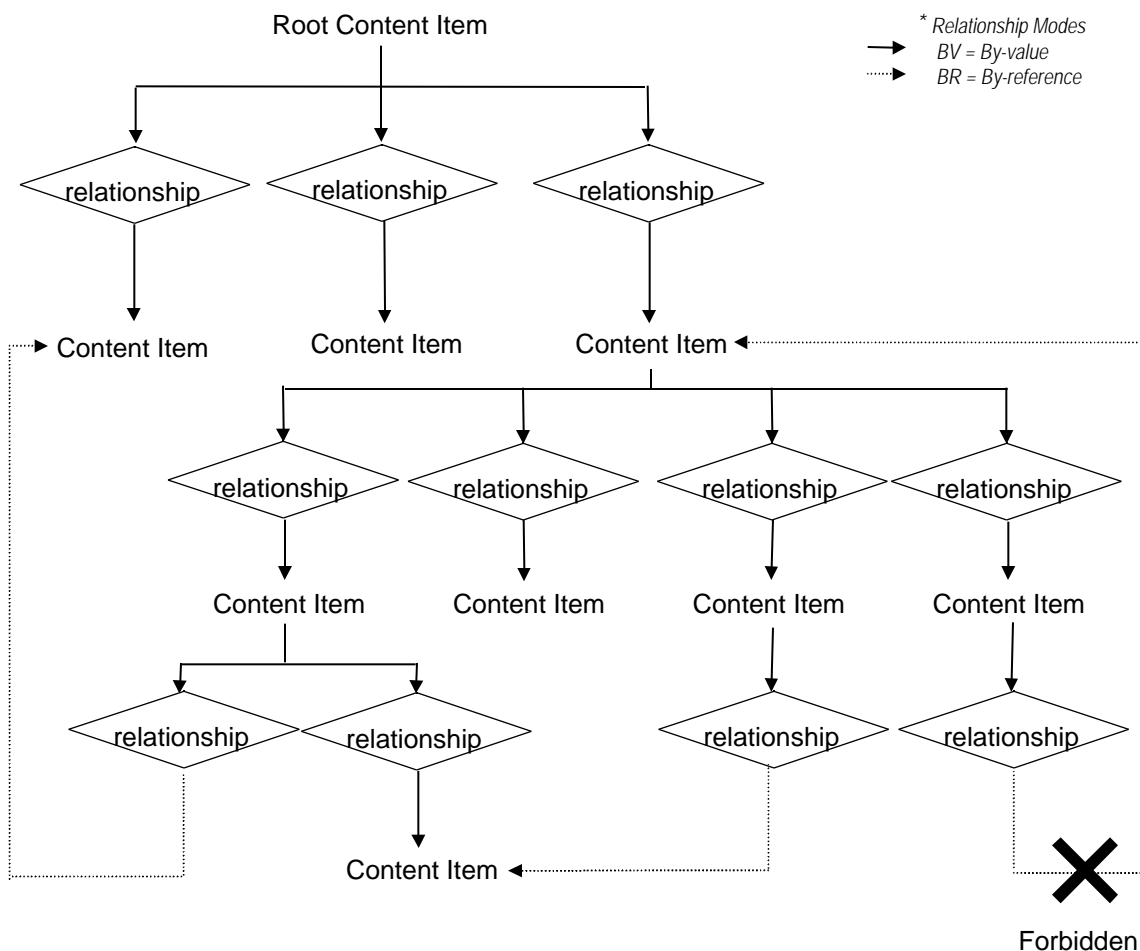
Figure C.17.3-1 depicts the relationship of SR Documents to Content Items and the relationships of
Content Items to other Content Items and to Observation Context.



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Figure C.17.3-1
SR Information Model

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Note: Whether or not relationships by-reference are allowed to ancestor Content Items, is specified in the IOD.

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Figure C.17.3-2 – Example of an SR Content Tree (Informative)

Each Content Item contains:

- a name/value pair, consisting of
 - a single Concept Name Code Sequence (0040,A043) that is the name of a name/value pair or a heading,
 - a value (text, codes, etc.),
- references to images, waveforms or other composite objects, with or without coordinates,
- relationships to other Items, either
 - by-value through nested Content Sequences, or
 - by-reference.

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The value of the name/value pair is encoded with one of the Value Types defined in Table C.17.3-1 (the choice of which may be constrained by the IOD in which this Module is contained).

348 Content Items are identified by their position in the Content Item tree. They have an implicit order as defined by the order of the Sequence Items. See the definition of Referenced Content Item Identifier (0040,DB73). Table C.17.3-1 describes Value Types defined for Content Items.

**Table C.17.3-1
VALUE TYPE DEFINITIONS**

352

Value Type	Concept Name	Concept Value	Description
TEXT	Type of text, e.g. "Findings"	Textual expression of the concept	Free text, narrative description of unlimited length.
NUM	Type of numeric value or measurement, e.g. "BPD"	Numeric value and associated Unit of Measurement	Numeric value fully qualified by coded representation of the measurement name and unit of measurement.
CODE	Type of code, e.g. "Findings"	Coded expression of the concept	Categorical coded value. Representation of nominal or non-numeric ordinal values.
DATETIME	Type of DateTime, e.g. "Date/Time of onset"	Concatenated date and time	Date and time of occurrence of the type of event denoted by the Concept Name.
DATE	Type of Date, e.g. "Birth Date"	Calendar date	Date of occurrence of the type of event denoted by the Concept Name.
TIME	Type of Time, e.g. "Start Time"	Time of day	Time of occurrence of the type of event denoted by the Concept Name.
UIDREF	Type of UID, e.g. "Study Instance UID"	Unique Identifier	Unique Identifier (UID) of the entity identified by the Concept Name.
PNAME	Role of person, e.g., "Recording Observer"	Name of person	Person name of the person whose role is described by the Concept Name.
COMPOSITE	Purpose of Reference	Reference to UIDs of Composite SOP Instances	A reference to one or more Composite SOP Instances which are not Images or Waveforms.
IMAGE	Purpose of Reference	Reference to UIDs of Image Composite SOP Instances	A reference to one or more Image(s). IMAGE Content Item may convey a reference to a Softcopy Presentation State associated with the Image.
WAVEFORM	Purpose of Reference	Reference to UIDs of Waveform Composite SOP Instances	A reference to one or more Waveform(s).
SCoord	Purpose of Reference	Listing of spatial coordinates	Spatial coordinates of a geometric region of interest in the DICOM image coordinate system. The IMAGE Content Item from which spatial coordinates are selected is denoted by a SELECTED FROM relationship.

TCOORD	Purpose of Reference	Listing of temporal coordinates	Temporal Coordinates (i.e. time or event-based coordinates) of a region of interest in the DICOM waveform coordinate system. The WAVEFORM or IMAGE or SCOORD Content Item from which Temporal Coordinates are selected is denoted by a SELECTED FROM relationship.
CONTAINER	Document Title or document section heading. Concept Name conveys the Document Title (if the CONTAINER is the Document Root Content Item) or the category of observation.	The content of the CONTAINER. The value of a CONTAINER Content Item is the collection of Content Items that it contains.	CONTAINER groups Content Items and defines the heading or category of observation that applies to that content. The heading describes the content of the CONTAINER Content Item and may map to a document section heading in a printed or displayed document.

Note: It is recommended that drawings and sketches, sometimes used in reports, be represented by: IMAGE Content Items (8-bit, MONOCHROME2, Secondary Capture) or COMPOSITE Content Items (Stand-Alone Overlay).

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Table C.17.3-2 describes the Relationship Types between Source Content Items and the Target Content Items.

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Table C.17.3-2
RELATIONSHIP TYPE DEFINITIONS

Relationship Type	Description	Definition and Example
CONTAINS	Contains	Source Item contains Target Content Item. E.g.: CONTAINER "History" {CONTAINS: TEXT: "mother had breast cancer"; CONTAINS IMAGE 36}
HAS OBS CONTEXT	Has Observation Context	Target Content Items shall convey any specialization of Observation Context needed for unambiguous documentation of the Source Content Item. E.g: CONTAINER: "Report" {HAS OBS CONTEXT: PNAME: "Recording Observer" = "Smith^John^Dr^"}
HAS CONCEPT MOD	Has Concept Modifier	Used to qualify or describe the Concept Name of the Source Content item, such as to create a post-coordinated description of a concept, or to further describe a concept. E.g. CODE "Chest X-Ray" {HAS CONCEPT MOD: CODE "View = PA and Lateral"} E.g. CODE "Breast" {HAS CONCEPT MOD: TEXT "French Translation" = "Sein"} E.g. CODE "2VCXRPALAT" {HAS CONCEPT MOD: TEXT "Further Explanation" = "Chest X-ray, Two Views, Postero-anterior and Lateral"}

HAS PROPERTIES	Has Properties	Description of properties of the Source Content Item. E.g: CODE "Mass" {HAS PROPERTIES: CODE "anatomic location", HAS PROPERTIES: CODE "diameter", HAS PROPERTIES: CODE "margin", ...}.
HAS ACQ CONTEXT	Has Acquisition Context	The Target Content Item describes the conditions present during data acquisition of the Source Content Item. E.g: IMAGE 36 {HAS ACQ CONTEXT: CODE "contrast agent", HAS ACQ CONTEXT: CODE "position of imaging subject", ...}.
INFERRED FROM	Inferred From	Source Content Item conveys a measurement or other inference made from the Target Content Items. Denotes the supporting evidence for a measurement or judgment. E.g: CODE "Malignancy" {INFERRED FROM: CODE "Mass", INFERRED FROM: CODE "Lymphadenopathy",...}. E.g: NUM: "BPD = 5mm" {INFERRED FROM: SCOORD}.
SELECTED FROM	Selected From	Source Content Item conveys spatial or temporal coordinates selected from the Target Content Item(s). E.g: SCOORD: "CLOSED 1,1 5,10" {SELECTED FROM: IMAGE 36}. E.g: TCOORD: "SEGMENT 60-200mS" {SELECTED FROM: WAVEFORM}.

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Table C.17.3-3
SR DOCUMENT CONTENT MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
<i>Include Document Relationship Macro Table C.17.3-4.</i>			
<i>Include Document Content Macro Table C.17.3-5. with a Value Type (0040,A040) of CONTAINER</i>			

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Table C.17.3-4
DOCUMENT RELATIONSHIP MACRO ATTRIBUTES

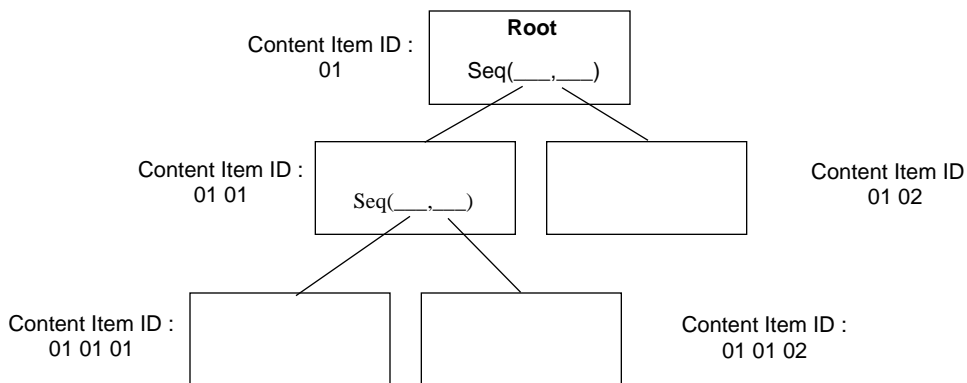
Attribute Name	Tag	Type	Attribute Description
Observation DateTime	(0040,A032)	1C	<p>The date and time on which this Content Item was completed.</p> <p>Required if the date and time are different from the Content Date (0008,0023) and Content Time (0008,0033) or the Observation DateTime (0040,A032) defined in higher items.</p> <p>Note: When Content Items are copied into successor reports, the Content Date (0008,0023) and Content Time (0008,0033) of the new report are likely to be different than the date and time of the original observation. Therefore this attribute may need to be included in any copied Content Items to satisfy the condition.</p>
Content Template Sequence	(0040,A504)	1C	<p>Template that describes the content of this Content Item.</p> <p>Only a single Item shall be permitted in this sequence.</p> <p>Required if a template was used to define the content of this Item.</p>
<i>>Include 'Template Identification Macro' Table 9-1</i>		<i>No Baseline Template ID is defined.</i>	

Content Sequence	(0040,A730)	1C	<p>A potentially recursively nested Sequence of Items that conveys content that is the Target of Relationships with the enclosing Source Content Item.</p> <p>One or more Items may be included in this sequence.</p> <p>Required if the enclosing Content Item has relationships.</p> <p>Notes: 1. If this Attribute is not present then the enclosing Item is a leaf. 2. The order of Items within this Sequence is semantically significant for presentation.</p>
>Relationship Type	(0040,A010)	1	<p>The type of relationship between the (enclosing) Source Content Item and the Target Content Item.</p> <p>IODs specify additional constraints on Relationships (including lists of Enumerated Values).</p> <p>Defined Terms:</p> <p>CONTAINS HAS PROPERTIES HAS OBS CONTEXT HAS ACQ CONTEXT INFERRED FROM SELECTED FROM HAS CONCEPT MOD</p>
<p>>Include Document Relationship Macro Table C.17.3-4 if the Target Content Item is included by-value in the Source Content Item. The Macro shall not be present if the relationship is by-reference.</p>			
<p>>Include Document Content Macro Table C.17.3-5 if the Target Content Item is included by-value in the Source Content Item. The Macro shall not be present if the relationship is by-reference.</p>			

<p>>Referenced Content Item Identifier</p>	<p>(0040,DB73)</p>	<p>1C</p>	<p>An ordered set of one or more integers that uniquely identifies the Target Content Item of the relationship.</p> <p>The root Content Item is referenced by a single value of 1.</p> <p>Each subsequent integer represents an ordinal position of a Content Item in the Content Sequence (0040,A730) in which it belongs. The Referenced Content Item Identifier is the set of these ordinal positions along the by-value relationship path. The number of values in this Multi-Value Attribute is exactly the number of relationships traversed in the SR content tree plus one.</p> <p>Note: 1. See example in note below table. 2. Content Items are ordered in a Content Sequence starting from 1 as defined in VR of SQ (See PS 3.5).</p> <p>Required if the Target Content Item is denoted by-reference, i.e. the Document Relationship Macro and Document Content Macro are not included.</p> <p>Shall not be present if Relationship Type (0040,A010) is CONTAINS.</p>
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Note: This example illustrates an SR content tree and identifiers associated with each Content Item:

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**Table C.17.3-5
DOCUMENT CONTENT MACRO ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Value Type	(0040,A040)	1	<p>The type of the value encoded in this Content Item.</p> <p>Defined Terms:</p> <p>TEXT NUM CODE DATETIME DATE TIME UIDREF PNAME COMPOSITE IMAGE WAVEFORM SCOORD TCOORD CONTAINER</p>
Concept Name Code Sequence	(0040,A043)	1C	<p>Code describing the concept represented by this Content Item. Also conveys the value of Document Title and section headings in documents. Only a single Item shall be permitted in this sequence.</p> <p>Required if Value Type (0040,A040) is TEXT or NUM or CODE or DATETIME or DATE or TIME or UIDREF or PNAME.</p> <p>Required if Value Type (0040,A040) is CONTAINER and a heading is present, or this is the Root Content Item.</p> <p>Note: That is, containers without headings do not require Concept Name Code Sequence</p> <p>Required if Value Type (0040,A040) is COMPOSITE, IMAGE, WAVEFORM, SCOORD or TCOORD, and the Purpose of Reference is conveyed in the Concept Name.</p> <p>See C.17.3.1 for further explanation.</p>
>Include 'Code Sequence Macro' Table 8.8-1		<p>Defined Context IDs to convey the Purpose of Reference are:</p> <p>99 "Purpose of Reference"</p> <p>178 "Spatial Extent of Finding"</p>	

Continuity of Content	(0040,A050)	1C	<p>This flag specifies for a CONTAINER whether or not its contained Content Items are logically linked in a continuous textual flow, or are separate items.</p> <p>Required if Value Type (0040,A040) is CONTAINER.</p> <p>Enumerated Values: SEPARATE CONTINUOUS</p> <p>See C.17.3.2 for further explanation.</p>
Text Value	(0040,A160)	1C	<p>This is the value of the Content Item.</p> <p>Required if Value Type (0040,A040) is TEXT.</p> <p>Text data which is unformatted and whose manner of display is implementation dependent.</p> <p>The text value may contain spaces, as well as multiple lines separated by either LF, CR, CR LF or LF CR, but otherwise no format control characters (such as horizontal or vertical tab and form feed) shall be present, even if permitted by the Value Representation of UT.</p> <p>The text shall be interpreted as specified by Specific Character Set (0008,0005) if present in the SOP Common Module.</p> <p>Note: The text may contain single or multi-byte characters and use code extension techniques as described in PS 3.5 if permitted by the values of Specific Character Set (0008,0005).</p>
DateTime	(0040,A120)	1C	<p>This is the value of the Content Item.</p> <p>Required if Value Type (0040,A040) is DATETIME.</p>
Date	(0040,A121)	1C	<p>This is the value of the Content Item.</p> <p>Required if Value Type (0040,A040) is DATE.</p>
Time	(0040,A122)	1C	<p>This is the value of the Content Item.</p> <p>Required if Value Type (0040,A040) is TIME.</p>
Person Name	(0040,A123)	1C	<p>This is the value of the Content Item.</p> <p>Required if Value Type (0040,A040) is PNAME.</p>
UID	(0040,A124)	1C	<p>This is the value of the Content Item.</p> <p>Required if Value Type (0040,A040) is UIDREF.</p>
<p><i>Include 'Numeric Measurement Macro' Table C.18.1-1 if and only if Value Type (0040,A040) is NUM.</i></p>			

<i>Include 'Code Macro' Table C.18.2-1 if and only if Value Type (0040,A040) is CODE.</i>
<i>Include 'Composite Object Reference Macro' Table C.18.3-1 if and only if Value Type (0040,A040) is COMPOSITE.</i>
<i>Include 'Image Reference Macro' Table C.18.4-1 if and only if Value Type (0040,A040) is IMAGE.</i>
<i>Include 'Waveform Reference Macro' Table C.18.5-1 if and only if Value Type (0040,A040) is WAVEFORM.</i>
<i>Include 'Spatial Coordinates Macro' Table C.18.6-1 if and only if Value Type (0040,A040) is SCOORD.</i>
<i>Include 'Temporal Coordinates Macro' Table C.18.7-1 if and only if Value Type (0040,A040) is TCOORD.</i>

C.17.3.1 Concept Name Code Sequence

380 The Concept Name Code Sequence (0040,A043) conveys the name of the concept whose value is expressed by the value attribute or set of attributes. Depending on the Value Type (0040,A040), the meaning of the Concept Name Code Sequence may reflect specifics of the use of the particular data type (see Table C.17.3-1).

C.17.3.2 Continuity of Content

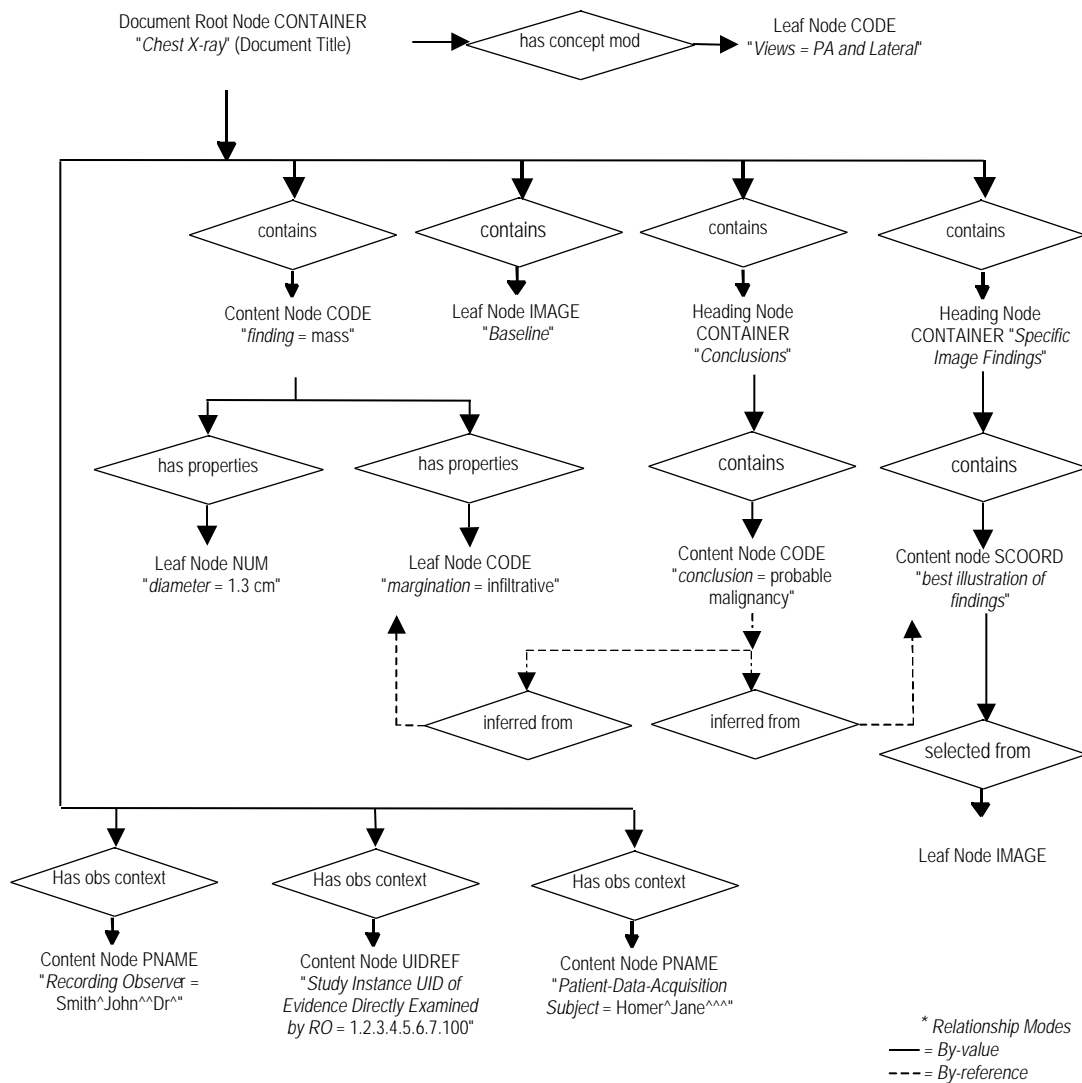
384 Continuity of Content (0040,A050) specifies whether or not all the Content Items contained in a CONTAINER are logically linked in a continuous textual flow, or are separate entities. It only applies to the children contained in the container, and not their children (which if containers themselves, will have the attribute specified explicitly).

388 Note: This allows the interspersing of measurements, codes, and image references, amongst text. For example, the following: "A mass of diameter = 3 cm was detected." can be represented by the following Content Items in a CONTAINER with a Continuity of Content (0040,A050) of CONTINUOUS:

392	TEXT	"A mass of"
	NUM	"Diameter"="3" "cm"
	TEXT	"was detected."

396 **C.17.4 SR Content Tree Example (Informative)**

Figure C.17.4-1 depicts the content of an example diagnostic interpretation.



400

Notes: 1. For nodes of type CONTAINER, the contents of the Concept Name Code Sequence are shown in quotes and italicized.

404

2. For nodes of Value Type CODE, PNAME, NUM the contents are shown as "Concept Name Code Sequence = Value".

3. For the nodes of Value Type IMAGE and SCOOD, the contents of the Concept Name Code Sequence indicating the purpose of reference are shown in quotes and italicized.

- 408 4. The root node containing the Document Type is illustrated using a post-coordinated node of "Chest X-ray", qualified using a HAS CONCEPT MOD relationship by a child with a CODE meaning "Views = PA and Lateral". An alternative would be to use a single pre-coordinated code in one node that applies to the entire concept of a "Two-view (PA and Lateral) Chest X-ray". However, the use of pre-coordinated terms to describe complex concepts rapidly becomes unwieldy and difficult to search on (in the sense that more specific pre-coordinated codes do not have a visible relationship with more general codes). If it were necessary to include a longer textual description of Document Type, then this could be achieved with a HAS CONCEPT MOD relationship with one or more TEXT nodes, perhaps in different languages.
- 412
- 416 5. The Document Type is only a title, and is not being used to convey the Procedure Context, although in this example it does appear to contain a description of some aspects of Procedure Context.

Figure C.17.4-1 (Informative)
SR Content Tree for an Example Diagnostic Interpretation

420 **C.17.5 OBSERVATION CONTEXT ENCODING**

Observation Context describes who or what is performing the interpretation, whether the examination of evidence is direct or quoted, what procedure generated the evidence that is being interpreted, and who or what is the subject of the evidence that is being interpreted.

- 424 Initial Observation Context is defined outside the SR Document Content tree by other modules in the SR IOD (i.e., Patient Module, Specimen Identification, General Study, Patient Study, SR Document Series, General Equipment and SR Document General modules). Observation Context defined by attributes in these modules applies to all Content Items in the SR Document Content tree and need not be explicitly coded in the tree. The initial Observation Context from outside the tree can be explicitly replaced rather than inherited if it is ambiguous.
- 428

- If a Content Item in the SR Document Content tree has Observation Context above and beyond the context already encoded elsewhere in the IOD, the context information applying to that Content Item shall be encoded as child nodes of the Content Item in the tree using the HAS OBS CONTEXT relationship. That is, Observation Context is a property of its parent Content Item.
- 432

- The context information specified in the Observation Context child nodes (i.e. target of the HAS OBS CONTEXT relationship) adds to the Observation Context of their parent node Content item, and is inherited by all the by-value descendant nodes of that parent node regardless of the relationship type between the parent and the descendant nodes. Observation Context is encoded in the same manner as any other Content Item. See the example in Figure C.17.5-1. A Content Item inherits the accumulated Observation Context of its parent. Observation Context is never replaced as the tree of Content Items is traversed top down from the root, only extended, and shall not be ambiguous or contradictory. Observation Context shall not be inherited across by-reference relationships.
- 436
- 440

- Observation DateTime is not included as part of the HAS OBS CONTEXT relationship, and therefore is not inherited along with other Observation Context. The Observation DateTime Attribute is included in each Content Item which allows different observation dates and times to be attached to different Content Items without the issue of contradictory Observation Context being inherited by descendant nodes.
- 444

The IOD may specify restrictions on Content Items and Relationship Types that also constrain the flexibility with which Observation Context may be described.

- 448 The IOD may specify Templates that offer or restrict patterns and content in Observation Content.

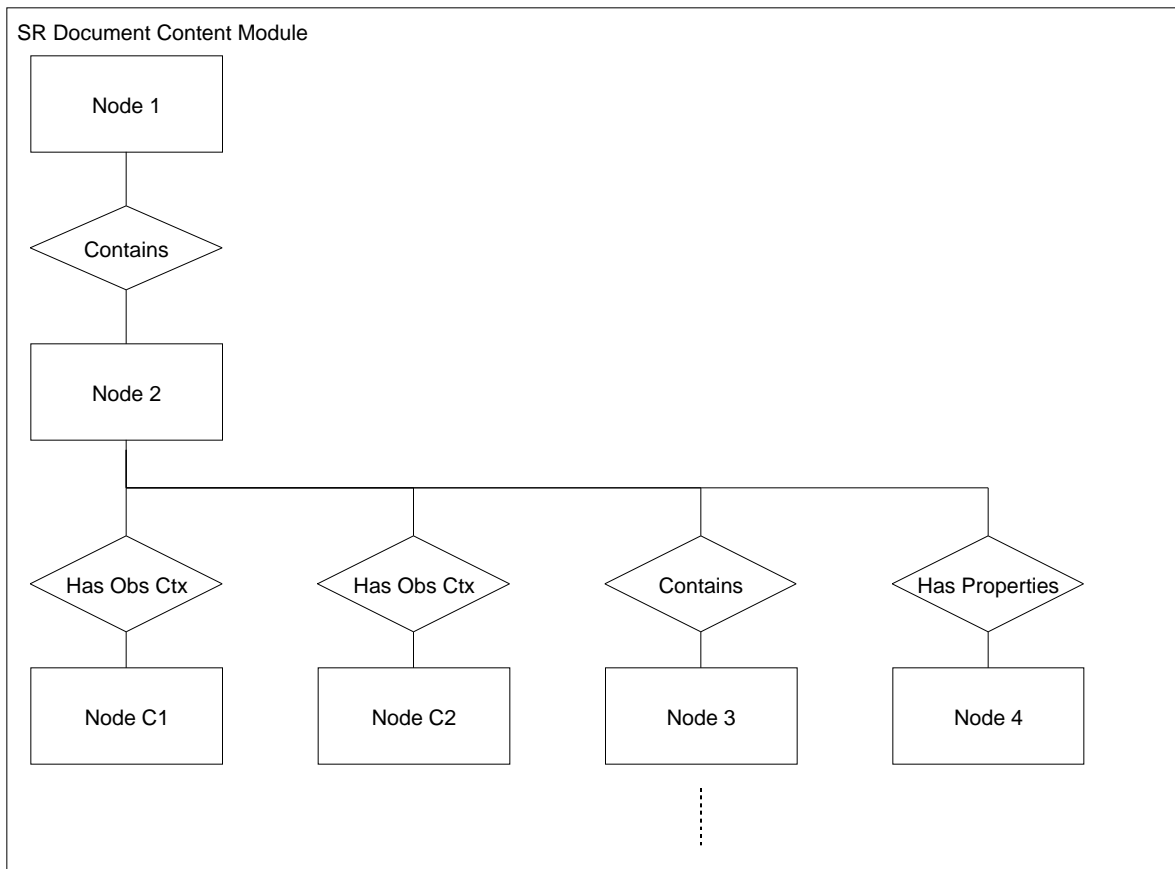
Note: Template IDs 24 "Direct Observation Context", 25 "Quoted Document Observation Context" and 26 "Quoted Verbal Observation Context" are defined.

Patient Module
 Patient Name
 Patient ID
 Patient Sex
 Patient Date Of Birth

General Study Module
 Study Instance UID
 Accession Number

SR Document Series Module
 Modality

SR Document General Module
 Referenced Request Sequence
 >Requested Procedure ID
 >Requested Procedure Description



452

- Notes:
1. Node 2 inherits any Observation Context of Node 1, which is then extended by the additional Observation Context defined in Nodes C1 and C2 (that is C1 and C2 are properties of 2).
 2. Node 3 and its descendents inherit the Observation Context of Node 2, which includes C1 and C2.
 3. Node 4 inherits the Observation Context of Node 2, which includes C1 and C2.

456

Figure C.17.5-1 (Informative)
Definition and Inheritance of Observation Context

460

C.18 CONTENT MACROS

C.18.1 Numeric Measurement Macro

Table C.18.1-1 specifies the Attributes that convey a NUM (numeric measurement) value.

464 Note: The Measured Value Sequence (0040,A300) may be empty to convey the concept of a measurement whose value is unknown or missing.

Table C.18.1-1
NUMERIC MEASUREMENT MACRO ATTRIBUTES

468

Attribute Name	Tag	Type	Attribute Description
Measured Value Sequence	(0040,A300)	2	This is the value of the Content Item. Shall consist of a Sequence of Items conveying the measured value(s), which represent integers or real numbers and units of measurement. Zero or one Items shall be permitted in this sequence.
>Numeric Value	(0040,A30A)	1	Numeric measurement value. Only a single value shall be present.
>Measurement Units Code Sequence	(0040,08EA)	1	Units of measurement. Only a single Item shall be permitted in this sequence.
>>Include 'Code Sequence Macro' Table 8.8-1			Defined Context ID is 82.

C.18.2 Code Macro

Table C.18.2-1 specifies the Attributes that convey a CODE value.

472

Table C.18.2-1
CODE MACRO ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Concept Code Sequence	(0040,A168)	1	This is the value of the Content Item. Only a single Item shall be permitted in this sequence.
>Include 'Code Sequence Macro' Table 8.8-1			No Baseline Context ID is specified.

C.18.3 Composite Object Reference Macro

476 Table C.18.3-1 specifies the Attributes that convey a reference to a DICOM Composite Object that is not a DICOM Image or Waveform (such as an SR Document).

Notes: 1. If a Softcopy Presentation State is to be applied to an Image, it should be referenced by an Image Reference Macro.

480 2. Other SR Documents may be referenced by this macro, but there is no facility to reference individual Content Items within those reports.

Table C.18.3-1
COMPOSITE OBJECT REFERENCE MACRO ATTRIBUTES

484

Attribute Name	Tag	Type	Attribute Description
-----------------------	------------	-------------	------------------------------

Referenced SOP Sequence	(0008,1199)	1	References to Composite Object SOP Class/SOP Instance pairs. One or more items may be included in this sequence.
>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class..
>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.

C.18.4 Image Reference Macro

Table C.18.4-1 specifies the Attributes that convey a reference to a DICOM image.

488

**Table C.18.4-1
IMAGE REFERENCE MACRO ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
<i>Include 'Composite Object Reference Macro' Table C.18.3-1</i>			
>Referenced Frame Number	(0008,1160)	1C	Identifies the frame numbers within the Referenced SOP Instance to which the reference applies. The first frame shall be denoted as frame number 1. Note: This Attribute may be multi-valued. Required if the Referenced SOP Instance is a multi-frame image and the reference does not apply to all frames.
>Referenced SOP Sequence	(0008,1199)	3	Reference to a Softcopy Presentation State SOP Class/SOP Instance pair. Only a single Item shall be permitted in this sequence.
>>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class. Shall be the same for all Images referenced by this presentation state.
>>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.

C.18.5 Waveform Reference Macro

492 Table C.18.5-1 specifies the Attributes that convey a reference to a DICOM waveform.

**Table C.18.5-1
WAVEFORM REFERENCE MACRO ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
<i>Include 'Composite Object Reference Macro' Table C.18.3-1</i>			
>Referenced Waveform Channels	(0040,A0B0)	1C	List of channels in Waveform to which the reference applies. See C.18.5.1.1 Required if the Referenced SOP Instance is a Waveform that contains multiple Channels and not all Channels in the Waveform are referenced.

496 **C.18.5.1 Waveform Reference Macro Attribute Descriptions**

C.18.5.1.1 Referenced Waveform Channels

500 Referenced Waveform Channels (0040,A0B0) is a multi-value attribute which lists the channels referenced. Each channel is specified as a pair of values (M,C), where the first value is the sequence item number of the Waveform Sequence (5400,0100) attribute in the referenced object (i.e. the Multiplex Group Number), and the second value is the sequence item number of the Channel Definition Sequence (003A,0200) attribute (i.e., the Channel Number) within the multiplex group.

If the specified channel number is 0, the annotation applies to all channels in the multiplex group.

504 Note: As an example, an annotation which applies to the entire first multiplex group and channels 2 and 3 of the third multiplex group would have Referenced Waveform Channels (0040,A0B0) value 0001 0000 0003 0002 0003 0003.

508 **C.18.6 Spatial Coordinates Macro**

Table C.18.6-1 specifies the Attributes that convey SCOORD Content Items. An SCOORD Content Item shall always be the Source Content Item of one or more SELECTED FROM Relationships with IMAGE Target Content Items. The IMAGE Target Content Item shall contain a reference to one or more Images.

512 Note: The same set of spatial coordinates may be selected from more than one single-frame image, or more than one frame of a multi-frame image when the purpose of reference is applicable to multiple images. For example, the outline of a sampling region at the same spatial location on multiple images acquired over time.

516

**Table C.18.6-1
SPATIAL COORDINATES MACRO ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Graphic Data	(0070,0022)	1	An ordered set of (column,row) pairs that denote positions in an image specified with sub-pixel resolution such that the origin at the TLHC of the TLHC pixel is 0.0\0.0, the BRHC of the TLHC pixel is 1.0\1.0, and the BRHC of the BRHC pixel is Columns\Rows. The values must be within the range 0\0 to Columns\Rows. The values Columns (0028,0011) and Rows (0028,0010) are those contained in the referenced image. See C.18.6.1.1 for further explanation.
Graphic Type	(0070,0023)	1	See C.18.6.1.2 for Enumerated Values.

520 **C.18.6.1 Spatial Coordinates Macro Attribute Descriptions**

C.18.6.1.1 Graphic Data

524 Graphic Data may be used to associate an anatomic or spatial Concept with a defined subset of one or more images. Graphic Data may be explicitly defined as a single point (i.e. to denote the epicenter of an anatomic site or lesion) or more than one point (i.e. representing a set of points or an open or closed polygon).

Note: Spatial coordinates may be used to associate observational data with a set of Image features. Spatial coordinates also may be used to convey coordinates that are input data for a measurement.

528

C.18.6.1.2 Graphic Type

When annotation applies to an image, this attribute defines the type of geometry of the annotated region of interest. The following Enumerated Values are specified for image spatial coordinate geometries:

- 532 POINT = a single pixel denoted by a single (column,row) pair
MULTIPOINT = multiple pixels each denoted by an (column,row) pair
POLYLINE = a closed polygon with vertices denoted by (column,row) pairs
536 CIRCLE = a circle defined by two (column,row) pairs. The first point is the central pixel. The second point is a pixel on the perimeter of the circle.
ELLIPSE = an ellipse defined by four pixel (column,row) pairs, the first two points specifying the endpoints of the major axis and the second two points specifying the endpoints of the minor axis of an ellipse

540

C.18.7 Temporal Coordinates Macro

544 Table C.18.7-1 specifies the Attributes that convey TCOORD Content Items. A TCOORD Content Item shall be the Source Content Item of one or more SELECTED FROM relationships with one or more SCOORD Content Items, one or more IMAGE Content Items, or one or more WAVEFORM Content Items.

- 548 Notes:
1. The same set of temporal coordinates may be selected from more than one single-frame image, or more than one frame of a multi-frame image, or from images and waveforms when the purpose of reference is applicable to multiple objects. For example, the definition of a sampling period at different spatial locations on multiple images and a synchronously acquired waveform.
 2. Temporal coordinates may refer to spatial coordinates which in turn refer to one or more frames or images, for example to indicate a region localized in both time and space.

552

Table C.18.7-1
TEMPORAL COORDINATES MACRO ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Temporal Range Type	(0040,A130)	1	See C.18.7.1.1 for Enumerated Values.
Referenced Sample Positions	(0040,A132)	1C	List of samples within a multiplex group specifying temporal points of the referenced data. Position of first sample is 1. Required if the Referenced SOP Instance is a Waveform and Referenced Time Offsets (0040,A138) and Referenced Datetime (0040,A13A) are not present. May be used only if Referenced Channels (0040,A0B0) refers to channels within a single multiplex group.
Referenced Time Offsets	(0040,A138)	1C	Specifies temporal points for reference by number of seconds after start of data. Required if Referenced Sample Positions (0040,A132) and Referenced Datetime (0040,A13A) are not present.
Referenced Datetime	(0040,A13A)	1C	Specifies temporal points for reference by absolute time. Required if Referenced Sample Positions (0040,A132) and Referenced Time Offsets (0040,A138) are not present.

556 **C.18.7.1 Temporal Range Type**

This Attribute defines the type of temporal extent of the region of interest. A temporal point (or instant of time) may be defined by a waveform sample offset (for a single waveform multiplex group only), time offset, or absolute time.

560 The following Enumerated Values are specified for Temporal Range Type:

POINT = a single temporal point

MULTIPOINT = multiple temporal points

SEGMENT = a range between two temporal points

564 MULTISEGMENT = multiple segments, each denoted by two temporal points

BEGIN = a range beginning at one temporal point, and extending beyond the end of the acquired data

568 END = a range beginning before the start of the acquired data, and extending to (and including) the identified temporal point

Add the new Section 9 to PS3.3

572

9 TEMPLATE IDENTIFICATION MACRO

A Template for SR Documents defines a set of constraints on the relationships and content (Value Types, Codes, etc.) of Content Items that reference such a Template. Specific Templates for SR Documents are defined either by the DICOM Standard or by users of the Standard for particular purposes.

576 The presence of a referenced Template reflects that the referenced Template was used in the creation of
the associated Content Item. The use by the SR Storage SCP of Templates is beyond the scope of the
DICOM Standard. Usage of Templates for SR Documents may improve comparability of essential data,
facilitate data-entry and revisions, enable automatic processing and simplify presentation of information to
580 the user.

Table 9-1 specifies the set of Attributes that identify Templates. These Attributes comprise the Template
Macro. Attribute Descriptions in Table 9-1 refer to similar attributes of the Code Sequence Macro in
Section 8.8 of this Part.

584

Table 9-1
Template Identification Macro Attributes Description

Attribute Name	Tag	Type	Attribute Description
Template Identifier	(0040,DB00)	1	Template identifier.
Mapping Resource	(0008,0105)	1	Mapping Resource that defines the template. See Section 8.4.
Template Version	(0040,DB06)	1C	Version of the Template. See Section 8.5. Required if the Template Identifier (0040,DB00) and Mapping Resource (0008,0105) are not sufficient to identify the template unambiguously.
Template Local Version	(0040,DB07)	1C	Local version number assigned to a template that contains private extensions. See Section 8.7. Required if the value of Template Extension Flag (0040,DB0B) is "Y".
Template Extension Flag	(0040,DB0B)	1C	Indicates that the template is a private extension of the template denoted by Template Identifier (0040,DB00), Mapping Resource (0008,0105) and Template Version (0040,DB06). See Section 8.7 of this Part. Enumerated Values: Y, N "Y" shall mean the template is a private extension of the template designated by Template Identifier (0040,DB00), Mapping Resource (0008,0105) and Template Version (0040,DB06). Required if the template is a private extension of the template designated by Template Identifier (0040,DB00), Mapping Resource (0008,0105) and Template Version (0040,DB06).

Template Extension Organization UID	(0040,DB0C)	2C	Identifies the organization that created and/or maintains an extension to a template, if defined. See Section 8.7. Required if the value of Template Extension Flag (0040,DB0B) is "Y".
Template Extension Creator UID	(0040,DB0D)	2C	Identifies the person who created and/or maintains an extension to a template. See Section 8.7. Required if the value of Template Extension Flag (0040,DB0B) is "Y".

587

Part 3, Annex X Addendum

588 *Add the following encoding example*

589 **ANNEX X (INFORMATIVE)**

590 The following is a simple and non-comprehensive illustration of the encoding of the Informative SR
591 Content Tree Example of Figure C.17.4-1.

SR Tree Depth	Nesting	Attribute	Tag	VR	VL (hex)	Value
		SOP Class UID	(0008,0016)	UI	001e	1.2.840.10008.5.1.4.1.1.88.33
		SOP Instance UID	(0008,0018)	UI	0012	1.2.3.4.5.6.7.300
		Study Date	(0008,0020)	DA	0008	19991029
		Content Date	(0008,0023)	DA	0008	19991029
		Study Time	(0008,0030)	TM	0006	154500
		Content Time	(0008,0033)	TM	0006	154510
		Accession Number	(0008,0050)	SH	0006	123456
		Modality	(0008,0060)	CS	0002	SR
		Manufacturer	(0008,0070)	LO	0004	WG6
		Referring Physician's Name	(0008,0090)	PN	0014	Luke^Will^Dr.^M.D.
		Referenced Study Component Sequence	(0008,1111)	SQ	ffffff	
	%endseq					
		Patient's Name	(0010,0010)	PN	000e	Homer^Jane^^
		Patient's ID	(0010,0020)	LO	0006	234567
		Patient's Birth Date	(0010,0030)	DA	0008	19991109
		Patient's Sex	(0010,0040)	CS	0002	F
		Study Instance UID	(0020,000D)	UI	0012	1.2.3.4.5.6.7.100
		Series Instance UID	(0020,000E)	UI	0012	1.2.3.4.5.6.7.200
		Study ID	(0020,0010)	SH	0006	345678
		Series Number	(0020,0011)	IS	0002	1
		Instance (formerly Image) Number	(0020,0013)	IS	0002	1
1		Value Type	(0040,a040)	CS	000a	CONTAINER
1		Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1	%item					
1	>	Code Value	(0008,0100)	SH	0006	333300
1	>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1	>	Code Meaning	(0008,0104)	LO	000c	Chest X-Ray
1	%enditem					
	%endseq					
1		Continuity Of Content	(0040,a050)	CS	0008	SEPARATE
		Verifying Observer Sequence	(0040,a073)	SQ	ffffff	
	%item					
	>	Verifying Organization	(0040,a027)	LO	0004	WG6

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	>	Verification DateTime	(0040,a030)	DT	000e	19991029154510
	>	Verifying Observer Name	(0040,a075)	PN	000e	Jones^Joe^Dr^
	>	Verifying Observer Identification Code Sequence	(0040,a088)	SQ	ffffff	
	%item					
	>>	Code Value	(0008,0100)	SH	0006	369842
	>>	Coding Scheme Designator	(0008,0102)	SH	000e	99STElsewhere
	>>	Code Meaning	(0008,0104)	LO	0006	369842
	>>	Private Coding Scheme Creator UID	(0008,010c)	UI	0010	1.2.3.4.6.7.8.91
	%enditem					
	%endseq					
	%enditem					
	%endseq					
		Referenced Request Sequence	(0040,a370)	SQ	ffffff	
	%item					
	>	Accession Number	(0008,0050)	SH	0006	123456
	>	Referenced Study Sequence	(0008,1110)	SQ	ffffff	
	%endseq					
	>	Study Instance UID	(0020,000D)	UI	0012	1.2.3.4.5.6.7.100
	>	Requested Procedure Description	(0032,1060)	LO	000a	Chest Xray
	>	Requested Procedure Code Sequence	(0032,1064)	SQ	ffffff	
	%item					
	>>	Code Value	(0008,0100)	SH	0006	369475
	>>	Coding Scheme Designator	(0008,0102)	SH	000e	99STElsewhere
	>>	Code Meaning	(0008,0104)	LO	000a	Chest XRay
	>>	Private Coding Scheme Creator UID	(0008,010c)	UI	0010	1.2.3.4.6.7.8.91
	%enditem					
	%endseq					
	>	Requested Procedure ID	(0040,1001)	SH	0006	012340
	>	Placer Order Number/Imaging Service Request	(0040,2016)	LO	0	
	>	Filler Order Number/Imaging Service Request	(0040,2017)	LO	0	
	%enditem					
	%endseq					
		Performed Procedure Code Sequence	(0040,a372)	SQ	ffffff	
	%item					
	>	Code Value	(0008,0100)	SH	0006	369475
	>	Coding Scheme Designator	(0008,0102)	SH	000e	99STElsewhere
	>	Code Meaning	(0008,0104)	LO	000a	Chest XRay
	>	Private Coding Scheme Creator UID	(0008,010c)	UI	0010	1.2.3.4.6.7.8.91
	%enditem					
	%endseq					
		Current Requested Procedure Evidence Sequence	(0040,a375)	SQ	ffffff	
	%item					
	>	Referenced Series Sequence	(0008,1115)	SQ	ffffff	
	%item					

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	>>	Referenced SOP Sequence	(0008,1199)	SQ	ffffff	
	%item					
	>>>	Referenced SOP Class UID	(0008,1150)	UI	0008	1.2.3.4
	>>>	Referenced SOP Instance UID	(0008,1155)	UI	000a	1.2.3.4.5
	%enditem					
	%endseq					
	>>	Series Instance UID	(0020,000E)	UI	0012	1.2.3.4.5.6.7.200
	%enditem					
	%endseq					
	>	Study Instance UID	(0020,000D)	UI	0012	1.2.3.4.5.6.7.100
	%enditem					
	%endseq					
		Completion Flag	(0040,a491)	CS	0008	COMPLETE
		Verification Flag	(0040,a493)	CS	0008	VERIFIED
1		Content Sequence	(0040,a730)	SQ	ffffff	
1.1	%item					
1.1	>	Relationship Type	(0040,a010)	CS	0010	HAS OBS CONTEXT
1.1	>	Value Type	(0040,a040)	CS	0006	PNAME
1.1	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.1	%item					
1.1	>>	Code Value	(0008,0100)	SH	0006	000555
1.1	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.1	>>	Code Meaning	(0008,0104)	LO	0012	Recording Observer
1.1	%enditem					
1.1	%endseq					
1.1	>	Person Name	(0040,a123)	PN	0010	Smith^John^^Dr^
1.1	%enditem					
1.2	%item					
1.2	>	Relationship Type	(0040,a010)	CS	0010	HAS OBS CONTEXT
1.2	>	Value Type	(0040,a040)	CS	0006	UIDREF
1.2	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.2	%item					
1.2	>>	Code Value	(0008,0100)	SH	0006	000599
1.2	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.2	>>	Code Meaning	(0008,0104)	LO	0036	Study Instance UID of Evidence Directly Examined by RO
1.2	%enditem					
1.2	%endseq					
1.2	>	UID	(0040,a124)	UI	0012	1.2.3.4.5.6.7.100
1.2	%enditem					
1.3	%item					
1.3	>	Relationship Type	(0040,a010)	CS	0010	HAS OBS CONTEXT
1.3	>	Value Type	(0040,a040)	CS	0006	PNAME
1.3	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	

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1.3	%item					
1.3	>>	Code Value	(0008,0100)	SH	0006	000579
1.3	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.3	>>	Code Meaning	(0008,0104)	LO	0020	Patient-Data- Acquisition Subject
1.3	%enditem					
1.3	%endseq					
1.3	>	Person Name	(0040,a123)	PN	000e	Homer^Jane^^
1.3	%enditem					
1.4	%item					
1.4	>	Relationship Type	(0040,a010)	CS	0008	CONTAINS
1.4	>	Value Type	(0040,a040)	CS	0004	CODE
1.4	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.4	%item					
1.4	>>	Code Value	(0008,0100)	SH	0006	000444
1.4	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.4	>>	Code Meaning	(0008,0104)	LO	0008	Finding
1.4	%enditem					
1.4	%endseq					
1.4	>	Concept Code Sequence	(0040,a168)	SQ	ffffff	
1.4	%item					
1.4	>>	Code Value	(0008,0100)	SH	0006	000333
1.4	>>	Coding Scheme Designator	(0008,0102)	SH	000e	99STElsewhere
1.4	>>	Code Meaning	(0008,0104)	LO	0004	Mass
1.4	>>	Private Coding Scheme Creator UID	(0008,010c)	UI	0010	1.2.3.4.6.7.8.91
1.4	%enditem					
1.4	%endseq					
1.4	>	Content Sequence	(0040,a730)	SQ	ffffff	
1.4.1	%item					
1.4.1	>>	Relationship Type	(0040,a010)	CS	000e	HAS PROPERTIES
1.4.1	>>	Value Type	(0040,a040)	CS	0004	NUM
1.4.1	>>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.4.1	%item					
1.4.1	>>>	Code Value	(0008,0100)	SH	0006	000222
1.4.1	>>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.4.1	>>>	Code Meaning	(0008,0104)	LO	0008	Diameter
1.4.1	%enditem					
1.4.1	%endseq					
1.4.1	>>	Measured Value Sequence	(0040,a300)	SQ	ffffff	
1.4.1	%item					
1.4.1	>>>	Measurement Units Code Sequence	(0040,08ea)	SQ	ffffff	
1.4.1	%item					
1.4.1	>>>>	Code Value	(0008,0100)	SH	0006	000111
1.4.1	>>>>	Coding Scheme Designator	(0008,0102)	SH	0008	SNMdemo
1.4.1	>>>>	Code Meaning	(0008,0104)	LO	0002	cm
1.4.1	%enditem					
1.4.1	%endseq					

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1.4.1	>>>	Numeric Value	(0040,a30a)	DS	0004	1.3
1.4.1	%enditem					
1.4.1	%endseq					
1.4.1	%enditem					
1.4.2	%item					
1.4.2	>>	Relationship Type	(0040,a010)	CS	000e	HAS PROPERTIES
1.4.2	>>	Value Type	(0040,a040)	CS	0004	CODE
1.4.2	>>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.4.2	%item					
1.4.2	>>>	Code Value	(0008,0100)	SH	0006	111000
1.4.2	>>>	Coding Scheme Designator	(0008,0102)	SH	0008	SNMdemo
1.4.2	>>>	Code Meaning	(0008,0104)	LO	000c	Margination
1.4.2	%enditem					
1.4.2	%endseq					
1.4.2	>>	Concept Code Sequence	(0040,a168)	SQ	ffffff	
1.4.2	%item					
1.4.2	>>>	Code Value	(0008,0100)	SH	0006	222000
1.4.2	>>>	Coding Scheme Designator	(0008,0102)	SH	0008	SNMdemo
1.4.2	>>>	Code Meaning	(0008,0104)	LO	000c	Infiltrative
1.4.2	%enditem					
1.4.2	%endseq					
1.4.2	%enditem					
1.4	%endseq					
1.4	%enditem					
1.5	%item					
1.5	>	Referenced SOP Sequence	(0008,1199)	SQ	ffffff	
1.5	%item					
1.5	>>	Referenced SOP Class UID	(0008,1150)	UI	0008	1.2.3.4
1.5	>>	Referenced SOP Instance UID	(0008,1155)	UI	000a	1.2.3.4.5
1.5	%enditem					
1.5	%endseq					
1.5	>	Relationship Type	(0040,a010)	CS	0008	CONTAINS
1.5	>	Value Type	(0040,a040)	CS	0006	IMAGE
1.5	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.5	%item					
1.5	>>	Code Value	(0008,0100)	SH	0006	333000
1.5	>>	Coding Scheme Designator	(0008,0102)	SH	0008	SNMdemo
1.5	>>	Code Meaning	(0008,0104)	LO	0008	Baseline
1.5	%enditem					
1.5	%endseq					
1.5	%enditem					
1.6	%item					
1.6	>	Relationship Type	(0040,a010)	CS	0008	CONTAINS
1.6	>	Value Type	(0040,a040)	CS	000a	CONTAINER
1.6	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.6	%item					
1.6	>>	Code Value	(0008,0100)	SH	0006	555000

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1.6	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.6	>>	Code Meaning	(0008,0104)	LO	000c	Conclusions
1.6	%enditem					
1.6	%endseq					
1.6		Continuity Of Content	(0040,a050)	CS	0008	SEPARATE
1.6	>	Content Sequence	(0040,a730)	SQ	ffffff	
1.6.1	%item					
1.6.1	>>	Relationship Type	(0040,a010)	CS	0008	CONTAINS
1.6.1	>>	Value Type	(0040,a040)	CS	0004	CODE
1.6.1	>>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.6.1	%item					
1.6.1	>>>	Code Value	(0008,0100)	SH	0006	777000
1.6.1	>>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.6.1	>>>	Code Meaning	(0008,0104)	LO	000a	Conclusion
1.6.1	%enditem					
1.6.1	%endseq					
1.6.1	>>	Concept Code Sequence	(0040,a168)	SQ	ffffff	
1.6.1	%item					
1.6.1	>>>	Code Value	(0008,0100)	SH	0006	888000
1.6.1	>>>	Coding Scheme Designator	(0008,0102)	SH	000e	99STElsewhere
1.6.1	>>>	Code Meaning	(0008,0104)	LO	0014	Probable malignancy
1.6.1	>>	Private Coding Scheme Creator UID	(0008,010c)	UI	0010	1.2.3.4.6.7.8.91
1.6.1	%enditem					
1.6.1	%endseq					
1.6.1	>>	Content Sequence	(0040,a730)	SQ	ffffff	
1.6.1.1	%item					
1.6.1.1	>>>	Relationship Type	(0040,a010)	CS	000e	INFERRED FROM
1.6.1.1	>>>	Referenced Content Item Identifier	(0040,db73)	UL	000c	0001,0004,0002
1.6.1.1	%enditem					
1.6.1.2	%item					
1.6.1.2	>>>	Relationship Type	(0040,a010)	CS	000e	INFERRED FROM
1.6.1.2	>>>	Referenced Content Item Identifier	(0040,db73)	UL	000c	0001,0007,0001
1.6.1.2	%enditem					
1.6.1	%endseq					
1.6.1	%enditem					
1.6	%endseq					
1.6	%enditem					
1.7	%item					
1.7	>	Relationship Type	(0040,a010)	CS	0008	CONTAINS
1.7	>	Value Type	(0040,a040)	CS	000a	CONTAINER
1.7	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.7	%item					
1.7	>>	Code Value	(0008,0100)	SH	0006	999000
1.7	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.7	>>	Code Meaning	(0008,0104)	LO	0018	Specific Image Findings
1.7	%enditem					

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1.7	%endseq					
1.7		Continuity Of Content	(0040,a050)	CS	0008	SEPARATE
1.7	>	Content Sequence	(0040,a730)	SQ	ffffff	
1.7.1	%item					
1.7.1	>>	Relationship Type	(0040,a010)	CS	0008	CONTAINS
1.7.1	>>	Value Type	(0040,a040)	CS	0006	SCOORD
1.7.1	>>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.7.1	%item					
1.7.1	>>>	Code Value	(0008,0100)	SH	0006	333001
1.7.1	>>>	Coding Scheme Designator	(0008,0102)	SH	0008	SNMdemo
1.7.1	>>>	Code Meaning	(0008,0104)	LO	001e	Best illustration of findings
1.7.1	%enditem					
1.7.1	%endseq					
1.7.1	>>	Content Sequence	(0040,a730)	SQ	ffffff	
1.7.1.1	%item					
1.7.1.1	>>>	Referenced SOP Sequence	(0008,1199)	SQ	ffffff	
1.7.1.1	%item					
1.7.1.1	>>>>	Referenced SOP Class UID	(0008,1150)	UI	0008	1.2.3.4
1.7.1.1	>>>>	Referenced SOP Instance UID	(0008,1155)	UI	000a	1.2.3.4.6
1.7.1.1	%enditem					
1.7.1.1	%endseq					
1.7.1.1	>>>	Relationship Type	(0040,a010)	CS	000e	SELECTED FROM
1.7.1.1	>>>	Value Type	(0040,a040)	CS	0006	IMAGE
1.7.1.1	%enditem					
1.7.1	%endseq					
1.7.1	>>	Graphic Data	(0070,0022)	FL	0020	0,0,0,0,0,0,0
1.7.1	>>	Graphic Type	(0070,0023)	CS	0008	POLYLINE
1.7.1	%enditem					
1.7	%endseq					
1.7	%enditem					
1.8	%item					
1.8	>	Relationship Type	(0040,a010)	CS	0010	HAS CONCEPT MOD
1.8	>	Value Type	(0040,a040)	CS	0004	CODE
1.8	>	Concept Name Code Sequence	(0040,a043)	SQ	ffffff	
1.8	%item					
1.8	>>	Code Value	(0008,0100)	SH	0006	123456
1.8	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.8	>>	Code Meaning	(0008,0104)	LO	0006	Views
1.8	%enditem					
1.8	%endseq					
1.8	>	Concept Code Sequence	(0040,a168)	SQ	ffffff	
1.8	%item					
1.8	>>	Code Value	(0008,0100)	SH	0006	123457
1.8	>>	Coding Scheme Designator	(0008,0102)	SH	0006	LNdemo
1.8	>>	Code Meaning	(0008,0104)	LO	000e	PA and Lateral

1.8	%enditem					
1.8	%endseq					
1.8	%enditem					
1	%endseq					

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596

DICOM DIRECTORY

Update Table B.15.3-3: DICOM Directory Record Types

F.15.3 Update of DICOM Directory Record Types

600 Table F.15.3-3 (continued)

Attribute Name	Tag	Type	Attribute Description
>Directory Record Type	(0004,1430)	1C	<p>Defines a specialized type of Directory Record by reference to its position in the Media Storage Directory Information Model (see Section F.15.4). Required if the Directory Record Sequence (0004,1220) is not zero length.</p> <p>Enumerated Values (see Section F.15.5): PATIENT STUDY SERIES IMAGE OVERLAY MODALITY LUT VOI LUT CURVE TOPIC VISIT RESULTS INTERPRETATION STUDY COMPONENT STORED PRINT RT DOSE RT STRUCTURE SET RT PLAN RT TREAT RECORD PRESENTATION SR DOCUMENT</p> <p>PRIVATE = Privately defined record hierarchy position. Type shall be defined by Private Record UID (0004,1432). MRDR = Special Directory Record which allows indirect reference to a File by multiple Directory Records. Instead of directly referencing a File by its Referenced File ID (0004,1500), a Directory Record of any of the Types define above (except MRDR) may reference a Multi-Referenced File Directory Record which in turn will reference the File by its File ID.</p>

Add SR Document Directory Record (in bold) to Table F.15.4-2

F.15.4 Update of DICOM Directory Record Relationships

604 Table F.15.4-2 - RELATIONSHIP BETWEEN DIRECTORY RECORDS

Directory Record Type	Section	Directory Record Types which may be included in the next lower-level directory Entity
(Root Directory Entity)		PATIENT, TOPIC, PRIVATE
PATIENT	F.5.1	STUDY, PRIVATE
STUDY	F.5.2	SERIES, VISIT, RESULTS, STUDY COMPONENT

		PRIVATE
SERIES	F.5.3	IMAGE, OVERLAY, MODALITY LUT, VOI LUT, CURVE, STORED PRINT, RT DOSE, RT STRUCTURE SET, RT PLAN, RT TREAT RECORD, PRESENTATION, <u>SR DOCUMENT</u> , PRIVATE
IMAGE	F.5.4	PRIVATE
OVERLAY	F.5.5	PRIVATE
MODALITY LUT	F.5.6	PRIVATE
VOI LUT	F.5.7	PRIVATE
CURVE	F.5.8	PRIVATE
STORED PRINT	F.5.18	PRIVATE
RT DOSE	F.5.19	PRIVATE
RT STRUCTURE SET	F.5.20	PRIVATE
RT PLAN	F.5.21	PRIVATE
RT TREAT RECORD	F.5.22	PRIVATE
PRESENTATION	F.5.23	PRIVATE
<u>SR DOCUMENT</u>	<u>F.5.25</u>	<u>PRIVATE</u>
TOPIC	F.5.9	STUDY, SERIES, IMAGE, OVERLAY, MODALITY LUT, VOI LUT, CURVE, STORED PRINT, RT DOSE, RT STRUCTURE SET, RT PLAN, RT TREAT RECORD, PRESENTATION, <u>SR DOCUMENT</u> , PRIVATE
VISIT	F.5.10	PRIVATE
RESULTS	F.5.11	INTERPRETATION, PRIVATE
INTERPRETATION	F.5.12	PRIVATE
STUDY COMPONENT	F.5.13	PRIVATE
PRIVATE	F.6.1	PRIVATE, (any of the above as privately defined)
MRDR	F.6.2	(Not applicable)

Add SR Document Directory Record to Figure F.4-1 under Series DR

608

Add SR Document Directory Record

F.5.25 Update of SR Document Directory Record Definition

612 The Directory Record is based on the specification of Section F.15.3. It is identified by a Directory Record
Type of Value "SR DOCUMENT". Table F.5-25 lists the set of keys with their associated Types for such
a Directory Record Type. The description of these keys may be found in the Modules related to the
Observation IE of Structured Report IOD. This Directory Record shall be used to reference an SR
616 Document. This type of Directory Record may reference a Lower-Level Directory Entity which includes
one or more Directory Records as defined in Table F.15.4-2.

**Table F.5-25
SR DOCUMENT KEYS**

Key	Tag	Type	Type
Specific Character Set	(0008,0005)	1C	Required if an extended or replacement character set is used in one of the keys.
Instance Number	(0020,0013)	1	
Completion Flag	(0040,A491)	1	
Verification Flag	(0040,A493)	1	
Content Date	(0008,0023)	1	
Content Time	(0008,0033)	1	
Verification DateTime	(0040,A030)	1C	Most recent Date and Time of verification among those defined in the Verifying Observer Sequence (0040,A073). Required if Verification Flag (0040,A493) is VERIFIED.
Concept Name Code Sequence	(0040,A043)	1	Code describing the concept represented by the root Content Item (Document Title). This sequence shall contain exactly one Item.
Content Sequence	(0040,A730)	1C	Contains the Target Content Items that modify the Concept Name Code Sequence of the root Content Item (Document Title). Required if the root Content Item is the Source Content Item of HAS CONCEPT MOD relationships.
Any Attribute of the Document IE Modules		3	

620

Note: Because (0004,1511) Referenced SOP Instance UID in File may be used as a "pseudo" Directory Record Key (See Table F.15.3-3), it is not duplicated in this list of keys.

Part 4 Addendum

Add Structured Report Storage SOP Classes to Table B.5-1

624 B.5 STANDARD SOP CLASSES

SOP Class Name	SOP Class UID	IOD (See PS 3.3)
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Basic Text SR
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Enhanced SR
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Comprehensive SR

B.5.1 Specialization for Standard SOP Classes

B.5.1.4 Grayscale Softcopy Presentation State Storage SOP Class

628 See Annex N.

B.5.1.5 Structured Reporting Storage SOP Classes

See Annex O.

Add Structured Report Storage Media Storage SOP Classes to Table I.4-1

632

I.4 MEDIA STANDARD STORAGE SOP CLASSES

SOP Class Name	SOP Class UID	IOD (See PS 3.3)
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Basic Text SR
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Enhanced SR
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Comprehensive SR

I.4.1 Specialization for Standard SOP Classes

I.4.1.1 Grayscale Softcopy Presentation State Storage SOP Class

636

See Annex N.

I.4.1.2 Structured Reporting Storage SOP Classes

See Annex O.

640 Add Annex O Structured Report Storage SOP Classes

Annex O STRUCTURED REPORTING STORAGE SOP CLASSES (Normative)

O.1 OVERVIEW

644 The Structured Reporting Storage SOP Classes extend the functionality of the Storage Service class (defined in Annex B) to extend the SCP behavior and conformance requirements.

O.2 BEHAVIOR OF AN SCP

648 An SCP intending to display or otherwise render a Structured Report shall convey its full meaning in an unambiguous manner.

For a device, that is both an SCU and an SCP of these Storage SOP Classes, in addition to the behavior for the Storage Service Class specified in B.2.2, the following additional requirements are specified for Structured Reporting Storage SOP Classes:

652 — an SCP of this SOP Class shall support Level 2 Conformance as defined in Section B.4.1.

Note: This requirement means that all Type 1, Type 2, and Type 3 Attributes defined in the Information Object Definition associated with the SOP Class will be stored and may be accessed.

656

O.3 MODIFICATION OF SR DOCUMENT CONTENT

660 A device that is an SR Storage SOP Class SCU may modify information in a SOP Instance which it has previously sent or received. When this SOP Instance is modified and sent to an SCP, it shall be assigned a new SOP Instance UID if any of the following conditions are met:

- addition, removal or update of any attribute within the SR Document General Module or SR Document Content Module;
- modification of the Series Instance UID (0020,000E);
- 664 - modification of the Study Instance UID (0020,000D).

O.4 CONFORMANCE

668 In addition to the Conformance Statement requirements for the Storage Service Class specified in B.4.3, the following additional requirements are specified for Structured Reporting Storage SOP Classes:

O.4.1 Conformance Statement for an SCU

The following shall be documented in the Conformance Statement of any implementation claiming conformance to the Structured Reporting Storage SOP Classes as an SCU:

- 672 — The Image or other composite object Storage SOP Classes that are also supported by the SCU and which may be referenced by instances of Structured Reporting Storage SOP Class.
- The range of Value Types and Relationship Types that are supported by the SCU.
- The conditions under which a new SOP Instance UID is generated for an existing SR Document.

676

O.4.2 Conformance Statement for an SCP

The following shall be documented in the Conformance Statement of any implementation claiming conformance to the Structured Reporting Storage SOP Class as an SCP:

- 680 — For an SCP of a Structured Reporting Storage SOP Class that is displaying or otherwise rendering the structured report contained in a SOP Instance of the Class, the general form in which the structured report related attributes are rendered.
- 684 — For an SCP of a Structured Reporting Storage SOP Class, the Image or other composite object Storage SOP Classes that are also supported by the SCP and which may be referenced by instances of the Structured Reporting Storage SOP Class, and whether or not they will be displayed or otherwise rendered.
- 688 — For an SCP of a Structured Reporting Storage SOP Class that is displaying or otherwise rendering an image or other composite object referred to by a SOP Instance of the Class, the manner in which the structured report related attributes (such as spatial coordinates and referenced presentation states) are used to influence the display of the image or object.

692

Part 5 Addendum

7.5 NESTING OF DATA SETS

696 The VR identified "SQ" shall be used for Data Elements with a Value consisting of a Sequence of zero or more Items, where each Item contains a set of Data Elements. SQ provides a flexible encoding scheme that may be used for simple structures of repeating sets of Data Elements, or the encoding of more complex Information Object Definitions often called folders. SQ Data Elements can also be used recursively to contain multi-level nested structures.

700 **Items present in an SQ Data Element shall be an ordered set where each Item may be referenced by its ordinal position. Each Item shall be implicitly assigned an ordinal position starting with the value 1 for the first Item in the Sequence, and incremented by 1 with each subsequent Item. The last Item in the Sequence shall have an ordinal position equal to the number of Items in the Sequence.**

704 **Notes:** 1. **This clause implies that item ordering is preserved during transfer and storage.**
2. **An IOD or Module Definition may choose not to use this ordering property of a Data Element with VR of SQ. This is simply done by not specifying any specific semantics to the ordering of Items or by not specifying usage of the referencing of Items by ordinal position.**

708

712 The definition of the Data Elements encapsulated in each Item is provided by the specification of the Data Element (or associated Attribute) of Value Representation SQ. Items in a sequence of Items may or may not contain the same set of Data Elements. Data Elements with a VR of SQ may contain multiple Items but shall always have a Value Multiplicity of one (ie. a single Sequence).

716 There are three special SQ related Data Elements that are not ruled by the VR encoding rules conveyed by the Transfer Syntax. They shall be encoded as Implicit VR. These special Data Elements are Item (FFFE,E000), Item Delimitation Item (FFFE,E00D), and Sequence Delimitation Item (FFFE,E0DD). However, the Data Set within the Value Field of the Data Element Item (FFFE,E000) shall be encoded according to the rules conveyed by the Transfer Syntax.

Part 6 Addendum

720 6. REGISTRY OF DICOM DATA ELEMENTS

Add the following Data Elements to PS 3.6, Section 6.

Tag	Name	VR	VM
(0040,A010)	Relationship Type	CS	1
(0040,A027)	Verifying Organization	LO	1
(0040,A030)	Verification DateTime	DT	1
(0040,A032)	Observation DateTime	DT	1
(0040,A040)	Value Type	CS	1
(0040,A043)	Concept Name Code Sequence	SQ	1
(0040,A050)	Continuity Of Content	CS	1
(0040,A073)	Verifying Observer Sequence	SQ	1
(0040,A075)	Verifying Observer Name	PN	1
(0040,A088)	Verifying Observer Identification Code Sequence	SQ	1
(0040,A120)	DateTime	DT	1
(0040,A124)	UID	UI	1
(0040,A300)	Measured Value Sequence	SQ	1
(0040,A360)	Predecessor Documents Sequence	SQ	1
(0040,A370)	Referenced Request Sequence	SQ	1
(0040,A372)	Performed Procedure Code Sequence	SQ	1
(0040,A375)	Current Requested Procedure Evidence Sequence	SQ	1
(0040,A385)	Pertinent Other Evidence Sequence	SQ	1
(0040,A491)	Completion Flag	CS	1
(0040,A492)	Completion Flag Description	LO	1
(0040,A493)	Verification Flag	CS	1
(0040,A504)	Content Template Sequence	SQ	1
(0040,A525)	Identical Documents Sequence	SQ	1
(0040,A730)	Content Sequence	SQ	1
(0040,DB00)	Template Identifier	CS	1
(0040,DB06)	Template Version	DT	1
(0040,DB07)	Template Local Version	DT	1
(0040,DB0B)	Template Extension Flag	CS	1
(0040,DB0C)	Template Extension Organization UID	UI	1
(0040,DB0D)	Template Extension Creator UID	UI	1
(0040,DB73)	Referenced Content Item Identifier	UL	1-n

724 **ANNEX A (NORMATIVE): REGISTRY OF DICOM UNIQUE IDENTIFIERS (UID)**

Add the following UIDs to Part 6 Annex A:

UID Value	UID NAME	UID TYPE	Part
1.2.840.10008.5.1.4.1.1.88.11	Basic Text SR	SOP Class	3.4
1.2.840.10008.5.1.4.1.1.88.22	Enhanced SR	SOP Class	3.4
1.2.840.10008.5.1.4.1.1.88.33	Comprehensive SR	SOP Class	3.4