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**Digital Imaging and Communications in Medicine (DICOM)**

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*Supplement 196: Segmentation Creation Template*

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20 **DICOM Standards Committee, Working Group 07 Radiotherapy Objects**

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26 VERSION: Sup 196 – Revision 06  
Nov. 4, 2016 - post WG-7 review & cleanup

28 Developed pursuant to DICOM Work Item 2016-04B

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### Change History

Date	Re v	Author	Content
2015-06-18	01	Walter Bosch	Initial Outline
2015-09-27	02	Walter Bosch	Preparation for Work Item presentation
2016-06-01	03	Ulrich Busch	First draft after approval of Workitem and assignment of Supplement number. Format cleaned and updated to match the regular supplement format. Most Headers are renamed along current working title, other text is not updated yet. WG-06 comments are added to the Open Issue list for consideration.
2016-11-03	04	Walter Bosch	Prep for review by WG-07.
2016-11-03	05	Walter Bosch	Post WG-07 review 2016-11-03

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### Open Issues and Discussion Points

#	Owner	Item
2	W.Bosch	How should templates be identified? By template label? By protocol label? By protocol code? <ul style="list-style-type: none"> <li>Label, Description</li> <li>UID, Revision</li> <li>Protocol code(s)</li> <li>Disease site code(s)</li> <li>Indication code(s)</li> </ul>
3	W.Bosch	<b>What parameters for auto-segmentation</b> other than CT upper/lower limits should be included? Yulong Yan to provide a list of such parameters. WG-7 2016-11-03: Keep CT upper and lower limits as a minimum. There are energy-based methods in development. Possible approaches: <ul style="list-style-type: none"> <li>Two-level list of parameters (Content Item Macro)</li> <li>Key (UID) to environment-specific parameter set</li> </ul> Yulong and Walter to request input from Segmentation manufacturers.
6	W.Bosch	What is the role of the Template UID? Does this identify the template class (same across revisions), or is this assigned to a template instance? WG-7 2016-11-03: Template UID references class (consistent across revisions): need revision (ID / date) to specify instance.
9	2016-06-01 WG-06:	At a later stage it should be considered, how this IOD maybe made available for outside RT as well. It is certainly of interest in other context as well, and most f the content is pretty generic.
11	2016-06-01 WG-06:	RT Protocol Sequence – this sounds RT-specific, but could be generalized. There are similar constructs in the Standard already, which should be evaluated for use. If we need RT specific information, think of maybe using a generic module or construct,along

		an RT-specific module
14	2016-06-01 WG-06:	<p>Consider whether it would be worth to indicate which attributes are important to take from template, and which are not, e.g. it may be ok to change the color, but not the coding.</p> <ul style="list-style-type: none"> <li>Identifiers/codes – usage is required</li> <li>Instructions/parameters for segmentation – available to user</li> <li>Presentation (colors, etc.) – default values</li> </ul> <p>Need to work out how to express requirements</p>
15	2016-06-01 WG-06:	<p>(meta-topic, but added as reminder for Chairs): Inform CT, MR and WG-11 (Display) about the work item</p>
16	2016-06-01 WG-06:	<p>Foreword: Start with the essence: Creation of Segmentation,... include details like details, guidance aspects, what elements are segmented etc.) Updated Forward. Re-work of Scope and Field of Application section is still needed.</p>
17	2016-11-03	Uli to work out usage of attributes to define the context of equivalent codes
18	2016-11-03	<p>Editorial work needed to finalize draft:</p> <ul style="list-style-type: none"> <li>Add tags to Data Dictionary (Pt. 6)</li> <li>Check VRs</li> <li>Finalize Scope and Field of Application (~1 page)</li> <li>Diagram for Real World Model</li> <li>Complete Annex A partri</li> <li>Modality = SEGT MPL</li> <li>Check completeness and wording of attribute descriptions</li> <li>Remove “<i>Sequence defining...</i>” in descriptions</li> <li>Check/update of Attribute Mapping Table</li> <li>Construct clinical and clinical trial examples as reality check (and for Part 17)</li> </ul> <p>Goal: complete draft ready for review for WG-6 reading in Mar 2017</p>
19		

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### Closed Issues and Discussion Points

#	Owner	Item
1	W.Bosch	<p>Should the ROI Template reference dictionary entries from more than one ROI Dictionary? Should all definitions be required to come from the same ROI Template SOP instance? Allow references to other instances? → DECISION: Retire the ROI Dictionary and condense Dictionary content into Template; add a “Purpose Code” for primary Segmented Property Type Code. Closed.</p>
4	W.Bosch	<p>Do we need to store both “Anatomic” and “RT Role”-based code sets for segmentation and segment annotation IODs, respectively? → These codes have been separated. There is a code pair for each entity. Both should be supported. Done.</p>
5	W.Bosch	<p>How should the Clinical Trial context for an ROI Template be identified? Clinical Trial ID Module (Type U). Done.</p>

7	W.Bosch	How are template revisions managed? What is the expected behavior for applications receiving updates? Maintain Template UID, update revision. Done.
8	2016-06-01 WG-06: Done: 2016-11-03	A current working title may include Template, when it is sufficiently qualified. Therefore the title 'Segmentation Creation Template' was chosen for the template and the IOD for the time being. The title maybe revised in a later stage if indicated.
10	2016-06-01 WG-06: Done: 2016-08-01	As also shortly discussed in WG-07, the terminology ROI maybe replaced by 'Segment', since this is a more generic and modern term. The term, "ROI" has been replaced by "Segment" (except in existing DICOM attributes). WRB 2016-08-01
12	2016-06-01 WG-06: Done: 2016-08-01	Indication Code Sequence is similarly also available in the CT protocol, use that one? See "Potential Requested Procedure Code Sequence", "Contraindications Code Sequence" WG-7 2016-11-03: CT protocols use Diagnostic procedure code. This application uses disease codes, e.g., ICD-10.
13	2016-06-01 WG-06 Done: 2016-08-01	ROI Segmentation Instruction – may also have a similar concept exists in CT protocol, can that be used? See <b>Instructions Module</b> (C.34.7) – more procedure oriented: segmentation instructions are more descriptive of desired coverage/avoidance. WG-7 2016-11-03; Direct use of CT instructions is not a good match. May re-attributes, eg., Instrucion Text, Instruction Description

64

66 **Things highlighted in yellow** are issues/items in need of review/resolution/attention by reviewers.

**Things highlighted in grey** are just reminders for the editor about editing work that needs to be done.

68

70

## Foreword

72 This Supplement defines a storage SOP Class to distribute defined templates for creation of image  
73 segmentation instances. The Segmentation Creation Template SOP Class addresses details  
74 including Segment identification and coding, instructions for segmentation, and defaults for  
75 presentation. Segmentation Creation Templates are intended to be used in clinical and clinical trial  
76 protocols and to facilitate automated quality assurance.

76 This document is a Supplement to the DICOM Standard. It is an extension to the following parts of  
77 the published DICOM Standard:

- 78 Part 2 Conformance
- Part 3 Information Object Definitions
- 80 Part 4 Service Class Specifications
- Part 6 Data Dictionary
- 82 Part 16 Content Mapping Resource
- Part 17 Explanatory Information

84

## Scope and Field of Application

86

### Introduction

88 The use of images in radiation oncology involves delineation of image segments for the purpose of  
89 modeling volumes within which radiation dose is to be delivered. Consistent identification of such  
90 segments is desirable to facilitate automated analysis of patient anatomy and treatment plans.  
91 Currently, no means exists for defining the set of segments to be created from a set of patient images  
92 and for specifying the names, codes, default presentation parameters associated with those  
93 segments.

94 This Supplement to the DICOM Standard defines a Segmentation Creation Template storage SOP  
95 class that describes desired values for various parameters of image segmentation. These include  
96 Segment identification and coding, instructions for segmentation, and defaults for presentation.  
97 Defined Templates are independent of a specific patient.

98 Segmentation Creation Templates may be used by a radiation oncologist, a therapy department, or a  
99 clinical trial center to define Segmentation identification and associated parameters for a variety of  
100 segmentation situations and to disseminate those Segmentation Creation Templates to segmentation  
101 workstations or treatment planning systems, independent of the manufacturer. A Segmentation  
102 Creation Template SOP instance may also be referenced for multiple steps in clinical and clinical trials  
103 workflow, including prescription, treatment planning, plan analysis, plan review, and automated QA.

### 104 Application

105 Segmentation Creation Templates are identified using Label, Description, and UID attributes. When a  
106 Template is revised, these values remain unchanged, while the Segmentation Creation Template  
107 Revision, typically a serial number or date code, is modified to identify the revision. The organization

108 responsible for publishing Templates is identified by the Segmentation Creation Template Publisher  
attribute.

110 Applicability of a Segmentation Creation Template to a particular clinical context is indicated by the  
following attributes: Protocol Code, Treatment Site, Treatment Site Code, Indication Code. A Clinical  
112 Trial Use Flag indicates that the Template is published for use in a clinical trial identified in the Clinical  
Trial Context Module.

114 The Segmentation Creation Template lists the Segments for inclusion in a DICOM segmentation  
instance. The Segment Presence attribute indicates whether the Segment is required to be present  
116 for all applicable patients. For segments that are required conditionally, the Segment Presence  
Condition attribute provides text describing the condition(s) under which the segment is required.  
118 Segments identified as required and conditionally required segments for which the conditions are met  
represent the minimal set of Segments to be included in segmentation instances created using the  
120 Template.

Three categories of attributes are defined for each Segment in a Segmentation Creation Template.

- 122 1. Segment Identification and coding attributes include Segment Name and Description as well  
124 as type codes and category codes. They are intended to be incorporated in segmentation  
instances created using the template. The mapping between template attributes and  
corresponding segmentation instance attributes is shown in Table C.X1-2.
- 126 2. Informational attributes including Segmentation Instruction, Segmentation Reference URL,  
128 Autosegmentation CT Upper Limit, Autosegmentation CT Lower Limit, and Segment  
Combination Expression. These attributes provide information to be displayed to guide a  
user in manual segmentation or used for automated creation of Segments.
- 130 3. Presentation attributes, including ROI Color, Recommended Display CIELab Value, and  
132 Recommended Display Opacity provide recommended defaults for rendering Segment  
displays.

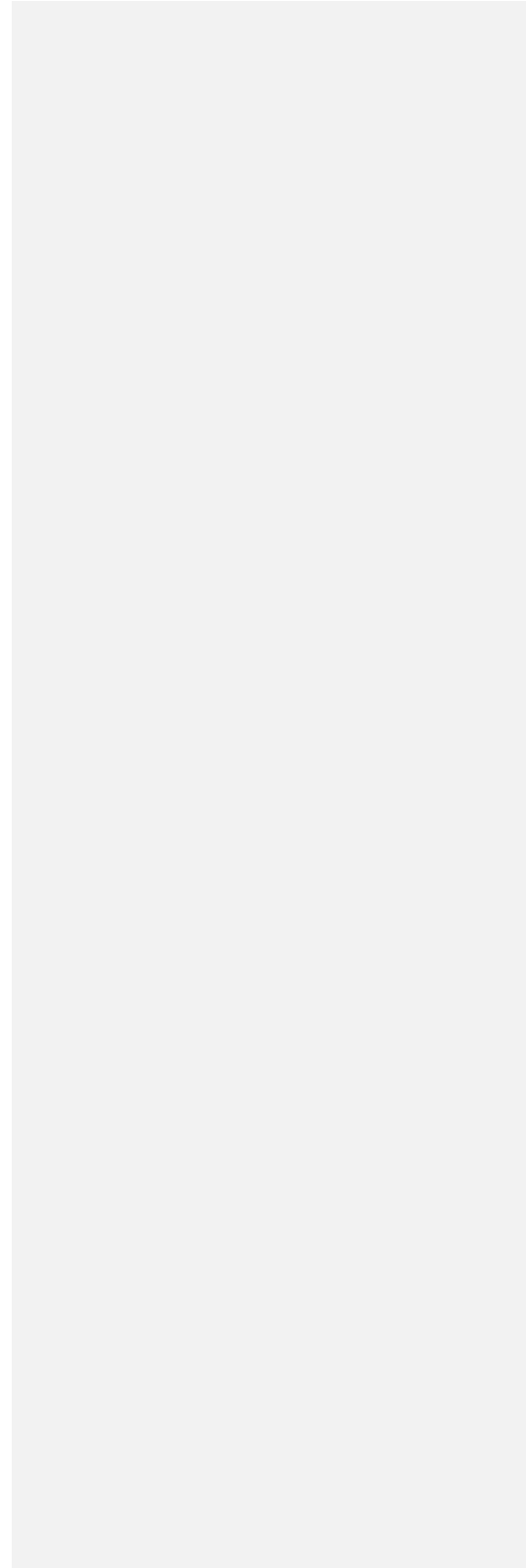
### Use Cases

134 The primary applications this supplement intends to focus on include:

- 136 • Dissemination of naming conventions for consistent identification of segments for image  
segmentation, radiotherapy treatment planning, and radiotherapy plan evaluation.
- 138 • Consistent segment naming and coding in multi-center radiotherapy clinical trials.
- 140 • Dissemination of Category, Type, Modifier, and Purpose Codes to image segmentation  
applications producing RT Structure Set and RT Segment Annotation instances.
- Support for automated quality assessment of segmentation and radiotherapy treatment plans.

### Significance

142 Definition of a Segmentation Creation Template IOD will allow the use of defined templates in building  
structure sets and other segmentation instances with established naming conventions. The AAPM,  
144 IHE-RO, NRG, ATC, IROC and other bodies have promoted and developed uniform tissue names for  
use in radiation oncology clinical trials. The expanded use of Segmentation Creation Templates  
146 through the development of well defined handling processes across platforms and systems is  
expected to increase productivity across the field of radiation oncology (virtual simulation, treatment  
148 planning and IGRT, and image review).





154

**Part 2: Conformance**

In PS 3.2, add new SOP Classes in Table A.1-2

156

**Table A.1-2  
UID VALUES**

UID Value	UID NAME	Category
...		
1.2.840.10008.5.1.4.1.1.X.1.1	ROI Template Storage	Transfer
...		

158

160

### Part 3: Information Object Definitions

162

In PS 3.3, add Figure 7-2xx Segmentation Creation Template Storage Information Model as shown

164

## 7 DICOM Information Model

166 ...

### 7.13.4 EXTENSION OF THE DICOM MODEL OF THE REAL WORLD FOR SEGMENTATION CREATION TEMPLATE STORAGE

168

The DICOM Model of the Real World is extended with the addition of Segmentation Creation Template objects whose whose relationship to existing DICOM Real World objects is shown in Figure 7.13.4-1.

170

[Information Model Diagram needed here]

172

Figure 7-2xx.

174

DICOM INFORMATION MODEL – SEGMENTATION CREATION TEMPLATE STORAGE

176

Add new IODs to PS 3.3, Table A.1-1

IODs Modules	Segmentation Creation Template
General Equipment	M
Enhanced General Equipment	M
SOP Common	M
Clinical Trial Context (Sup 121)	C
Segmentation Creation Template	M

178

180 Add the following to PS 3.3, Annex A

**A.1 ELEMENTS OF AN INFORMATION OBJECT DEFINITION**

182 **A.1.2 IOD Entity-Relationship Model**

**A.1.2.X Segmentation Creation Template IOD**

184

...

186 **A.X Segmentation Creation Template Object Definition**

**A.X.Z Segmentation Creation Template Object Definition**

188 **A.X.Z.1 Segmentation Creation Template IOD Description**

190 **A.X.Z.2 Segmentation Creation Template Entity-Relationship Model**

192 **A.X.Z.3 Segmentation Creation Template IOD Module Table**

194 **Table A.X1.3.3-1  
Segmentation Creation Template IOD MODULES**

IE	Module	Reference	Usage
Equipment	General Equipment	C.7.5.1	M
	Enhanced General Equipment	C.7.5.2	M
SOP Common	SOP Common	C.12.1	M
Clinical Trial	Clinical Trial Context	C.X4.1	C – Required if Clinical Trial Use Flag equals YES.
Segmentation Creation Template	Segmentation Creation Template		M

196

Add the following to PS 3.3 Annex C

198

**C.X1 SEGMENTATION CREATION TEMPLATE MODULES**

200 This section describes modules specific to the ROI Template IOD

**C.X1.1 Segmentation Creation Template**

202 The Segmentation Creation Template contains a collection of desired segmentation and display values for segments associated with a clinical or clinical trials protocol.

204 **Table C.X1-1 SEGMENTATION CREATION TEMPLATE MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Segmentation Creation Template Label		1	Label of this Segmentation Creation Template
Segmentation Creation Template Description		1	Extended description of the clinical context in which this Segmentation Creation Template is to be used.
Segmentation Creation Template UID		1	Unique Identifier for a Segmentation Creation Template. The value of this UID is maintained across revisions of this template.
Segmentation Creation Template Revision		1	Identifier issued by the publisher for this revision of the Segmentation Creation Template identified by Segmentation Creation Template UID.
Segment Creation Template Publisher		2	Organization responsible for publishing this Segment Creation Template.
Clinical Trial Use Flag		1	Specifies whether this Template is used for a clinical trial Enumerated values YES NO
RT Protocol Code Sequence		2	Sequence defining the clinical or clinical trial protocol for which the Segment Creation Template is to be used. Zero or more items shall be included in this sequence.
>Include 'Code Sequence Macro' Table 8.8-1			No Baseline CID is defined
Treatment Site		2	Description of the treatment site for which the Segment Creation Template is intended to be used.
Treatment Site Code Sequence		2	Sequence defining the treatment site for which the Segment Creation Template is intended to be used. Zero or more items shall be included in this sequence.
>Include 'Code Sequence Macro' Table 8.8-1			No Baseline CID is defined.
Indication Code Sequence		2	Sequence containing indication code(s) for which the Segmentation Creation Template is to be used. Zero or more items shall be included in this sequence.
>Include 'Code Sequence Macro' Table 8.8-1			Baseline CID is 110.
Segmentation Definition Sequence		1	Sequence defining the segments to be created for this protocol.
>Segment Definition Index		1	Index for this segment definition

>Segment Presence		1	<p>Specifies whether the segment is required to be created for all patients for which this template is used.</p> <p>Enumerated values:</p> <p>REQUIRED = required for all patients</p> <p>OPTIONAL = not required</p> <p>CONDITIONAL = required if condition specified in Segment Presence Condition (,) is met, may be present otherwise</p>
>Segment Presence Condition		1C	<p>Description of conditions under which the segment is required to be created for patients on this protocol.</p> <p>Must be present if the value of Segment Presence (???,???) is CONDITIONAL.</p>
>Segmentation Instruction		2C	<p>Segmentation instructions for the segment, e.g., anatomy to be included and/or excluded.</p> <p>Required if Segment Combination Flag is NO.</p>
> Segmentation Reference URL		2C	<p>URL for reference material</p> <p>Required if Segment Combination Flag is NO.</p>
>Autosegmentation CT Upper Limit		2	<p>Maximum value in HU of CT image pixels to be included in the Segment for level-based autosegmentation of CT images.</p>
>Autosegmentation CT Lower Limit		2	<p>Minimum value in HU of CT image pixels to be included in the Segment for level-based autosegmentation of CT images.</p>
>Segment Combination Flag		1	<p>Indication that this Segment is defined as a logical combination of other Segments whose definitions appear in this template.</p> <p>Enumerated values</p> <p>NO</p> <p>YES</p>
>Segmentation Combination Expression		1C	<p>Symbolic expression specifying the combination of Segments within this template instance as a text string consisting of Segment Identifier values, combination operators and parentheses.</p> <p>See <a href="#">Supp 147 Section C.AA.2.6.1.1</a></p> <p>The indices used in the symbolic expression notation specified in this section are the values of the Segment Definition Index (,) for the constituent Segments.</p> <p>Required if ROI Combination Flag is YES.</p>

>Segment Instance Name		1	Suggested value for ROI Name () and Segment Label ()
>Segment Instance Description		1	Suggested value for ROI Description () and Segment Description ()
>ROI Interpreted Type	(3006,00A4)	2	Suggested value for ROI Interpreted Type (3006,00A4) in RT Structure Set.
>ROI Display Color	(3006,002A)	1	RGB triplet color representation for ROI, specified using the range 0-255.
>Recommended Display CIELab Value	(0062,000D)	1	A default triplet value in which it is recommended that segment be rendered on a color display. The units are specified in PCS-Values, and the value is encoded as CIELab. See <a href="#">Section C.10.7.1.1</a> .
>Recommended Display Grayscale Value	(0062,000C)	1	A default single gray unsigned value in which it is recommended that the maximum pixel value in this segment be rendered on a monochrome display. The units are specified in P-Values from a minimum of 0000H (black) up to a maximum of FFFFH (white). Note: The maximum P-Value for this Attribute may be different from the maximum P-Value from the output of the Presentation LUT, which may be less than 16 bits in depth.
>Recommended Presentation Opacity	(0066,000C)	3	Specifies the opacity in which it is recommended that the surface of the segment be rendered. See C.27.1.1.3.
>Recommended Presentation Type	(0066,000D)	3	Specifies the representation type in which it is recommended that the surface of the segment be rendered. See C.27.1.1.3.
>Segmented Property Category Code Sequence	(0062,0003)	1	Sequence defining the general category of the segment for radiotherapy purposes. Only a single Item shall be included in this Sequence.
>>Include 'Code Sequence Macro' Table 8.8-1			Defined CID SUP147003
>Segmented Property Type Code Sequence	(0062,000F)	1	Sequence defining the specific property type of the segment for radiotherapy purposes. Only a single Item shall be included in this Sequence. See C.AA.D1.1.2.
>>Include 'Code Sequence Macro' Table 8.8-1			Defined CID is defined in C.AA.D1.1.2.

>>Segmented Property Type Modifier Code Sequence	(0062,0011)	3	Sequence defining the modifier of the property type of this segment. One or more Items are permitted in this Sequence.
>>>Include 'Code Sequence Macro' Table 8.8-1			Defined CID244.
>RT Segment Annotation Category Code Sequence	(30xx,1353)	2	Sequence defining the general category of this segment for radiotherapy purposes. Only a single Item shall be included in this Sequence.
>>Include 'Code Sequence Macro' Table 8.8-1			Defined CID SUP147003 "Radiotherapy Segment Annotation Categories".
>RT Segment Annotation Type Code Sequence	(30xx,1354)	1C	Sequence defining the specific property type of this segment for radiotherapy purposes. Required if RT Segment Annotation Category Code Sequence (30xx,1353) is present and has a value. Only a single Item shall be included in this Sequence. See C.AA.D1.1.2.
>>Include 'Code Sequence Macro' Table 8.8-1			Defined CID is defined in C.AA.D1.1.2.
>Segmented RT Accessory Device Sequence	(30xx,1349)	2	RT Accessory Device, if the segment represents such a device. Zero or more shall be included in this Sequence. See C.AA.D1.1.3.
>>Include 'Device Model Macro' Table C.AA.2.11-1			
>>Include 'Device Identification Macro' Table C.AA.2.14-1			Defined CID SUP147040.
>>Device Index	(30xx,0112)	1	Index of the Device. The value shall start at 1 and increase monotonically by 1.
>Segment Properties Sequence	(30xx,134B)	3	Segment properties associated with the current segment's interpretation. One or more Items are permitted in this Sequence. See C.AA.D1.1.5.
>>Include 'Content Item Macro' Table 10-2'			Defined TID of Concept Name Code Sequence is TID SUP147003.
>>Segment Properties Modifier Sequence	(30xx,134C)	3	Segment properties modifier for the property. One or more Items are permitted in this Sequence. See C.AA.D1.1.5.
>>>Include 'Content Item Macro' Table 10-2			No Baseline CID is defined.

Purpose of Equivalent Code Sequence	(xxxx,yyy1)	1	Code to be used for Purpose of Equivalent Code Sequence () in the Code Sequence Macro of Codes instantiated from this template.
>>>Include 'Code Sequence Macro' Table 8.8-1			No Baseline CID is defined

206

208

**C.X1.1.1 Mapping of Segmentation Creation Template Attributes**

210 Segmentation Creation Template attribute values are used to populate instances of RT Segment Annotation and segmentation (RT Structure Set, Segmentation, Surface Segmentation, etc.)  
 212 instances. Mapping between Segmentation Creation Template attributes and attributes within the RT Segment Annotation and segmentation IODs is shown in table C.X1-2 below.

214 **Table C.X1-2 SEGMENTATION CREATION TEMPLATE ATTRIBUTE MAPPING**

Segmentation Creation Template Attribute	RT Segment Annotation Attribute	Segmentation/ Surface Seg, ... Attribute	RT Structure Set Attribute
Segment Instance Name		Segment Label ()	ROI Name ()
Segment Instance Description		Segment Description ()	ROI Description ()
ROI Interpreted Type (3006,00A4)			ROI Interpreted Type (3006,00A4)
ROI Display Color (3006,002A)			ROI Display Color (3006,002A)
Recommended Display CIELab Value (0062,000D)		Recommended Display CIELab Value (0062,000D)	
Recommended Display Grayscale Value (0062,000C)		Recommended Display Grayscale Value (0062,000C)	
Recommended Presentation Opacity (0066,000C)		Recommended Presentation Opacity (0066,000C)	
Recommended Presentation Type (0066,000D)		Recommended Presentation Type (0066,000D)	
Segmented Property Category Code Sequence (0062,0003)		Segmented Property Category Code Sequence (0062,0003)	
Segmented Property Type Code Sequence (0062,000F)		Segmented Property Type Code Sequence (0062,000F)	



Segmented Property Type Modifier Code Sequence (0062,0011)		Segmented Property Type Modifier Code Sequence (0062,0011)	
RT Segment Annotation Category Code Sequence (30xx,1353)	RT Segment Annotation Category Code Sequence (30xx,1353)		
RT Segment Annotation Type Code Sequence (30xx,1354)	RT Segment Annotation Type Code Sequence (30xx,1354)		
Segmented RT Accessory Device Sequence (30xx,1349)	Segmented RT Accessory Device Sequence (30xx,1349)		
Segment Properties Sequence (30xx,134B)	Segment Properties Sequence (30xx,134B)		
Segment Properties Modifier Sequence (30xx,134C)	Segment Properties Modifier Sequence (30xx,134C)		

216

### Part 4: Service Class Specifications

218

Add SOP Classes to PS 3.4, Appendix B.5, Table B.5-1

#### B.5 STANDARD SOP CLASSES

Table B.5-1  
Standard SOP Classes

SOP Class	SOP Class UID	IOD Specification (defined in PS 3.3)
Segmentation Creation Template Storage	1.2.840.10008.5.1.4.1.1.X.1.1	
...		

Add SOP Classes to PS 3.4, Appendix I, Table I.4-1

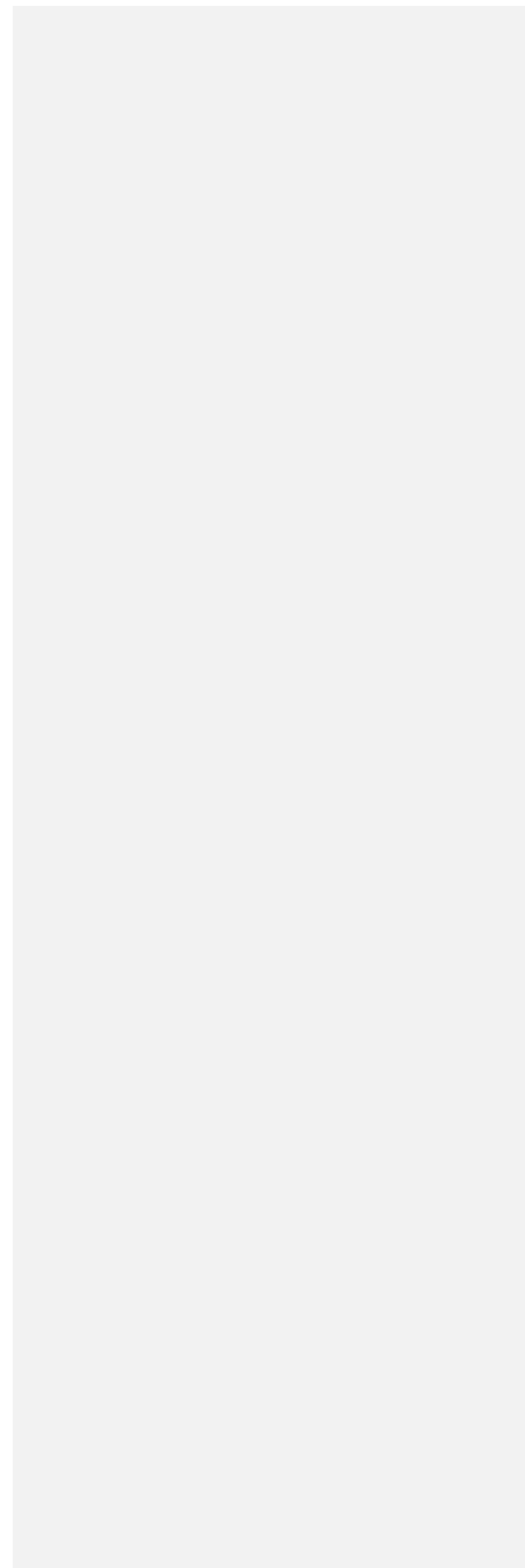
#### I.4 MEDIA STORAGE SOP CLASSES

Table I.4-1  
Media Storage Standard SOP Classes

SOP Class	SOP Class UID	IOD Specification
Segmentation Creation	1.2.840.10008.5.1.4.1.1.X.1.1	IOD defined in PS 3.3

226

Template Storage		
...		



230

**Part 6: Data Dictionary**

232

Add the following rows to PS 3.6, Section 6

Tag	Name	Keyword	VR	VM
(yym4,m4x2)	Attribute Tag	AttributeTag	AT	1

**Commented [KOD1]:**  
SH – 16 char  
CS – 16 char  
LO – 64 char (about 10 words)  
ST – 1024 char (a few paragraphs)  
LT – 10240 char (a couple pages)  
UT – War and Peace

234

236

Add the following rows to PS 3.6, Table A-1

**Table A-1  
UID Values**

UID Value	UID Name	UID Type	Part
1.2.840.10008.5.1.4.1.1.X.1.1	ROI Template Storage	SOP Class	PS 3.4

242

**Part 16: Content Mapping Resource**

Add the following CIDs to PS 3.16

246

Context ID ???  
ROI Template Categories

248

Type: Extensible      Version: 20yymmdd

Coding Scheme Designator	Code Value	Code Meaning

250

**Add the following rows to PS 3.16, Annex D**

252

DICOM Code Definitions (Coding Scheme Designator "DCM" Coding Scheme Version "01")

Code Value	Code Meaning	Definition	Notes
newcode001			
newcode002			
newcode003			
newcode004			

254

