

1	Status	Final Text
2	Date of Last Update	2019/11/08
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7	Submission Date	2018/09/01

8	Correction Number CP-1852	
9	Log Summary: Add code for bounding box for SR	
10	Name of Standard	
11	PS3.6, PS3.16	
12	Rationale for Correction:	
13	A common use case in image annotation is to designate a bounding box surrounding a lesion. Currently there is no explicit concept	
14	in the Measurement Report TID 1500 for that use case.	
15	Use SCT:75958009 "Bounded by" as a qualitative evaluation that accompanies a planar or volumetric ROI. This mechanism is used	
16	in preference to defining a FindingType for bounded by, since that may be needed to encode what is bounded, e.g., a "lesion",	
17	"primary tumor", etc., and in preference to using a measurement, since the numeric value of the measurement is not be of particular	
18	interest.	
19	This also allows other geometric constructs, such as the center or outline of an ROI to be specified, also in the case where a numeric	
20	value of a measurement is not needed.	
21	This is a more general approach than used in the CAD templates that use the purpose of reference concept name of an SCOORD,	
22	since not all ROIs are defined by coordinates.	
23	Correction Wording:	

Amend DICOM PS3.16 as follows (changes to existing text are bold and underlined for additions and ~~struckthrough~~ for removals):

TID 1410 Planar ROI Measurements and Qualitative Evaluations

Table TID 1410. Planar ROI Measurements and Qualitative Evaluations

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV (125007, DCM, "Measurement Group")	1	M		
...								
3b	>	CONTAINS	CODE	EV (121071, DCM, "Finding")	1	U		\$FindingType
3c	≥	<u>CONTAINS</u>	<u>CODE</u>	<u>EV (130400, DCM, "Geometric purpose of region")</u>	<u>1</u>	<u>U</u>		<u>BCID 219 "Geometry Graphical Representation"</u>
...								
5	>	CONTAINS	SCOORD	EV (111030, DCM, "Image Region")	1	MC	XOR Row 7	GRAPHIC TYPE = not {MULTIPOINT}
6	>>	SELECTED FROM	IMAGE		1	M		
7	>	CONTAINS	IMAGE	EV (121214, DCM, "Referenced Segmentation Frame")	1	MC	XOR Row 5	Reference shall be to a Segmentation Image, with a single value specified in Referenced Frame Number, and with a single value specified in Referenced Segment Number
...								
11	>	CONTAINS	INCLUDE	D???	1	U		...
12	>	CONTAINS	CODE	\$QualType	1-n	U		\$QualValue
12b	>>	HAS CONCEPT MOD	CODE	\$QualModType	1-n	U		\$QualModValue
13	>	CONTAINS	TEXT	\$QualType	1-n	U		

TID 1411 Volumetric ROI Measurements and Qualitative Evaluations

Table TID 1411. Volumetric ROI Measurements and Qualitative Evaluations

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV (125007, DCM, "Measurement Group")	1	M		
...								
3b	>	CONTAINS	CODE	EV (121071, DCM, "Finding")	1	U		\$FindingType
3c	≥	<u>CONTAINS</u>	<u>CODE</u>	<u>EV (130400, DCM, "Geometric purpose of region")</u>	<u>1</u>	<u>U</u>		<u>BCID 219 "Geometry Graphical Representation"</u>
...								

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
5	>	CONTAINS	SCoord	EV (111030, DCM, "Image Region")	1-n	MC	XOR Rows 7, 10	GRAPHIC TYPE = not {MULTIPOINT}
6	>>	SELECTED FROM	IMAGE		1	M		
7	>	CONTAINS	IMAGE	EV (121191, DCM, "Referenced Segment")	1	MC	XOR Rows 5, 10	Reference shall be to a Segmentation Image or Surface Segmentation object, with a single value specified in Referenced Segment Number
10	>	CONTAINS	SCoord3D	EV (121231, DCM, "Volume Surface")	1	MC	XOR Rows 5, 7	GRAPHIC TYPE = {ELLIPSOID}
...								
15	>	CONTAINS	INCLUDE	D???	1	U		...
16	>	CONTAINS	CODE	\$QualType	1-n	U		\$QualValue
16b	>>	HAS CONCEPT MOD	CODE	\$QualModType	1-n	U		\$QualModValue
17	>	CONTAINS	TEXT	\$QualType	1-n	U		

Add the following new Context Group to DICOM PS3.16:

CID 219 Geometry Graphical Representation

Resources: HTML | FHIR JSON | FHIR XML | IHE SVS XML
 Type: Extensible
 Version: 20191108
 UID: 1.2.840.10008.6.1.1304

Table CID 219. Geometry Graphical Representation

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-RT ID	UMLS Concept Unique ID
SCT	75958009	Bounded by	G-C020	C0332297
DCM	111010	Center		
DCM	111041	Outline		

Amend DICOM PS3.16 as follows (changes to existing text are bold and underlined for additions and ~~struckthrough~~ for removals):

D DICOM Controlled Terminology Definitions (Normative)

Table D-1. DICOM Controlled Terminology Definitions (Coding Scheme Designator "DCM" Coding Scheme Version "01")

Code Value	Code Meaning	Definition	Notes
111010	Center	Purpose of reference for an SCoord Content Item that identifies t The central point of a finding or feature	<u>May be used as the</u> Purpose of Reference for Content Item of value type COMPOSITE or SCoord, <u>or a qualitative observation on an ROI.</u>

Code Value	Code Meaning	Definition	Notes
111041	Outline	Purpose of reference for an SCOORD Content Item that identifies the outline or bounding region of a finding or feature	<u>May be used as the</u> Purpose of Reference for Content Item of value type COMPOSITE or SCOORD, <u>or a qualitative observation on an ROI.</u>
130400	Geometric purpose of region	The purpose of defining a region. E.g., to define a bounding box, center or outline.	

For reference unchanged in DICOM PS3.16:

TID 4021 Mammography CAD Geometry

All geometry Template invocations require specification of the location of the center of the object. Outline is optional.

Type: Non-Extensible
Order: Significant
Root: No

Table TID 4021. Mammography CAD Geometry

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			SCOORD	EV (111010, DCM, "Center")	1	M		GRAPHIC TYPE = {POINT}
2	>	R-SELECTED FROM	IMAGE		1	M		Shall reference an IMAGE Content Item in the (111028, DCM, "Image Library")
3			SCOORD	EV (111041, DCM, "Outline")	1	U		
4	>	R-SELECTED FROM	IMAGE		1	M		Shall reference the same Content Item as row 2
5			SCOORD	DCID 6166 "CAD Geometry Secondary Graphical Representation"	1-n	U		
6	>	R-SELECTED FROM	IMAGE		1	M		Shall reference the same Content Item as row 2

CID 6166 CAD Geometry Secondary Graphical Representation

Resources: HTML | FHIR JSON | FHIR XML | IHE SVS XML
Type: Extensible
Version: 20060822
UID: 1.2.840.10008.6.1.480

Table CID 6166. CAD Geometry Secondary Graphical Representation

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-RT ID	UMLS Concept Unique ID
DCM	113661	Outline of lobulations		
DCM	113662	Inner limits of fuzzy margin		
DCM	113663	Outer limits of fuzzy margin		
DCM	113664	Outline of spiculations		

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-RT ID	UMLS Concept Unique ID
DCM	113665	Linear spiculation		
DCM	113666	Pixelated spiculations		
SCT	103339001	Long axis	G-A185	C0522487
SCT	103340004	Short axis	G-A186	C0522488
DCM	113669	Orthogonal location arc		
DCM	113670	Orthogonal location arc inner margin		
DCM	113671	Orthogonal location arc outer margin		

Add new Context Group UID to DICOM PS3.6 as follows:

A Registry of DICOM Unique Identifiers (UIDs) (Normative)

Table A-3. Context Group UID Values

Context UID	Context Identifier	Context Group Name	Comment
1.2.840.10008.6.1.1304	CID 219	Geometry Graphical Representation	