

DICOM Correction Item

Correction Number CP-910	
Log Summary: Add Tracking Identifier to TID 4004 and TID 4006	
Type of Modification	Name of Standard
Extension	PS 3.16 - 2008
Rationale for Correction: Mammography CAD devices would like to have a tracking identifier used for composite feature and single image findings in a manner similar to what was done with Chest CAD Structured Report.	
Sections of documents affected PS 3.16 Figure A-8, PS 3.16 TID 4004, PS 3.16 TID 4006	
Correction Wording:	

Modify PS 3.16, Figure A-8

Mammography CAD SR IOD Templates

The templates that comprise the Mammography CAD SR IOD are interconnected as in Figure A-8:

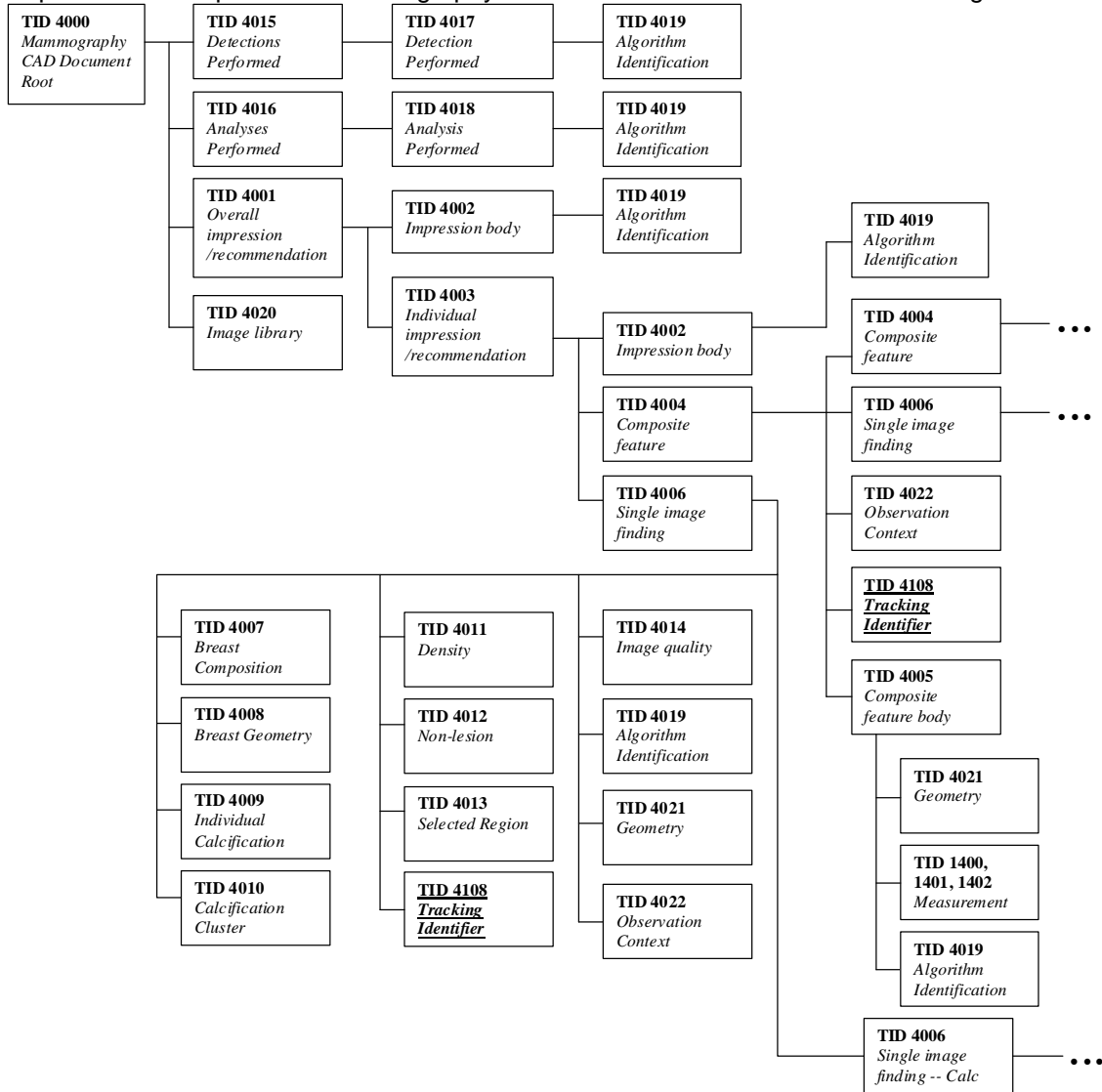


Figure A-8: Mammography CAD SR IOD Template Structure

In Figure A-8, '...' indicates possible recursive application of subordinate templates.

Modify PS 3.16, TID 4004

TID 4004 Mammography CAD Composite Feature Template

This template collects a composite feature for a lesion, non-lesion object, or correlation of related objects. The details of the composition are expressed in the Mammography CAD Composite Feature Body (see TID 4005). The data from which the details are inferred, are expressed in the Composite Features (see TID 4004) and/or Single Image Findings (see TID 4006), of which there may be several.

A Composite Feature shall be INFERRED FROM any combination of two or more Composite Features or Single Image Findings or mixture thereof.

**TID 4004
 MAMMOGRAPHY CAD COMPOSITE FEATURE
 Type: Non-Extensible**

NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1		CODE	(111015, DCM, "Composite Feature")	1	M		DCID (6016) "Mammography Composite Feature"
2	> HAS CONCEPT MOD	CODE	(111056, DCM, "Rendering Intent")	1	M		DCID (6034) "Intended Use of CAD Output"
3	> HAS OBS CONTEXT	INCLUDE	DTID (4108) Tracking Identifier	1	U		
3 4	> HAS PROPERTIES	INCLUDE	DTID (4005) "Mammography CAD Composite Feature Body"	1	M		
4 5	> INFERRED FROM	INCLUDE	DTID (4004) "Mammography CAD Composite Feature"	1-n	MC	At least two items shall be present: two of row 4 <u>5</u> , two of row 5 <u>6</u> , or one of each.	
5 6	> INFERRED FROM	INCLUDE	DTID (4006) "Mammography CAD Single Image Finding"	1-n	MC	At least two items shall be present: two of row 4<u>5</u>, two of row 5<u>6</u>, or one of each.	
6 7	> HAS OBS CONTEXT	INCLUDE	DTID (4022) "CAD Observation Context"	1	MC	Shall be present only if this feature is incorporated from a different report than its parent.	

Content Item Descriptions

Rendering Intent	This content item constrains the SCP receiving the Mammography CAD SR IOD in its use of the contents of this template and its target content items. Mammography CAD devices may opt to use data marked "Not for Presentation" or "Presentation Optional" as input to subsequent mammography CAD processing steps. Refer to PS 3.4, Annex O Structured Reporting Standard SOP Classes for SCU and SCP Behavior.
------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Modify PS 3.16, TID 4006

TID 4006 Mammography CAD Single Image Finding Template

This template describes a single image finding for a lesion or other object. The details of the finding are expressed in this template and/or more specific templates. The details from which a single image Calcification Cluster is inferred may be expressed in a number of Single Image Findings (see TID 4006) of type Individual Calcification.

A Single Image Finding of type Breast Composition may be INFERRED FROM by-reference to a Single Image Finding of type Breast Geometry.

**TID 4006
MAMMOGRAPHY CAD SINGLE IMAGE FINDING
Type: Non-Extensible**

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CODE	EV(111059, DCM, "Single Image Finding")	1	M		DCID (6014) "Mammography Single Image Finding"
2	>	HAS CONCEPT MOD	CODE	EV(111056, DCM, "Rendering Intent")	1	M		DCID (6034) "Intended Use of CAD Output"
3	>>	HAS PROPERTIES	NUM	(111071, DCM, "CAD Operating Point")	1	UC	IFF value of row 2 is (111151, DCM, "Presentation Optional") and row 9 of TID 4017 is present	UNITS = DT ({1:n}, UCUM, "range: 1:n"), where n is the maximum specified in Row 9 of TID 4017. Value is restricted to being an integer
4	≥	<u>HAS OBS CONTEXT</u>	<u>INCLUDE</u>	<u>DTID (4108) Tracking Identifier</u>	<u>1</u>	<u>U</u>		
45	>	HAS PROPERTIES	INCLUDE	DTID (4019) "CAD Algorithm Identification"	1	M		
56	>	HAS PROPERTIES	NUM	EV(111012, DCM, "Certainty of Finding")	1	U		UNITS = EV(% , UCUM, "Percent") Value = 0 – 100
67	>	HAS PROPERTIES	NUM	EV(111047, DCM, "Probability of cancer")	1	UC	May be present unless value of parent is (F-01710,SRT, "Breast composition"), (111100, DCM, "Breast geometry"), (T-04100, SRT, "Nipple"), (111099, DCM, "Selected region"), (111101, DCM, "Image quality") or (111102, DCM, "Non-lesion")	UNITS = EV(% , UCUM, "Percent") Value = 0 – 100
78	>	HAS PROPERTIES	INCLUDE	DTID (4021) "Mammography CAD Geometry"	1	MC	Shall be present unless value of parent is (F-01710,SRT, "Breast composition"), (111100, DCM, "Breast geometry") or (111101, DCM, "Image quality")	
89	>	HAS PROPERTIES	INCLUDE	DTID (4007) "Mammography CAD Breast Composition"	1	MC	Shall be present only if value of parent is (F-01710,SRT, "Breast composition")	
910	>	R-INFERRED FROM	CODE		1-n	UC	May be present only if value of parent is (F-01710,SRT, "Breast composition")	Shall reference a (111059, DCM, "Single Image Finding") of value: EV (111100, DCM, "Breast geometry")
4011	>	HAS PROPERTIES	INCLUDE	DTID (4008) "Mammography CAD Breast Geometry"	1	MC	Shall be present only if value of parent is (111100, DCM, "Breast geometry")	
441	>	HAS	INCLUDE	DTID (4009)	1	UC	May be present only if value of	

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
<u>2</u>		PROPERTIES		"Mammography CAD Individual Calcification"			parent is (F-01776,SRT, "Individual Calcification")	
<u>421</u> <u>3</u>	>	HAS PROPERTIES	INCLUDE	DTID (4010) "Mammography CAD Calcification Cluster"	1	UC	May be present only if value of parent is (F-01775,SRT, "Calcification Cluster")	
<u>431</u> <u>4</u>	>	HAS PROPERTIES	INCLUDE	DTID (4011) "Mammography CAD Density"	1	UC	May be present only if value of parent is (F-01796,SRT,"Mammography breast density")	
<u>441</u> <u>5</u>	>	HAS PROPERTIES	CODE	EV(111297,DCM, "Nipple Characteristic")	1	UC	May be present only if value of parent is (T-04100, SRT, "Nipple")	DCID (6039) "Nipple Characteristic"
<u>451</u> <u>6</u>	>	HAS PROPERTIES	INCLUDE	DTID (4012) "Mammography CAD Non-Lesion"	1	MC	Shall be present only if value of parent is (111102, DCM, "Non-lesion")	
<u>461</u> <u>7</u>	>	HAS PROPERTIES	INCLUDE	DTID (4013) "Mammography CAD Selected Region"	1	MC	Shall be present only if value of parent is (111099, DCM, "Selected Region")	
<u>471</u> <u>8</u>	>	R-INFERRED FROM	IMAGE		1	MC	Shall be present only if value of parent is (111101, DCM, "Image quality") and row <u>4819</u> is not present	Shall reference an IMAGE content item in the (111028, DCM, "Image Library")
<u>481</u> <u>9</u>	>	HAS PROPERTIES	SCOORD	EV(111030, DCM, "Image Region")	1-n	MC	Shall be present only if value of parent is (111101, DCM, "Image quality") and row <u>4718</u> is not present	
<u>492</u> <u>0</u>	>>	R-SELECTED FROM	IMAGE		1	M		All the (111030, DCM, "Image Region") content items in a single invocation of this template shall reference the same IMAGE content item in the (111028, DCM, "Image Library")
<u>202</u> <u>1</u>	>	HAS PROPERTIES	INCLUDE	DTID (4014) "CAD Image Quality"	1-n	MC	Shall be present only if value of parent is (111101, DCM, "Image quality")	\$QualityFinding = DCID (6041) "Mammography Image Quality Finding", \$QualityStandard = DCID (6045) "Mammography Types of Quality Control Standard"
<u>242</u> <u>2</u>	>	HAS PROPERTIES	NUM	DCID (6142) Calculated Value	1-n	U		
<u>222</u> <u>3</u>	>>	HAS CONCEPT MOD	CODE	EV (121401, DCM, "Derivation")	1	M		DCID (6140) Calculation Methods
<u>232</u> <u>4</u>	>>	INFERRED FROM	TEXT	EV (112034, DCM, "Calculation Description")	1	U		
<u>242</u> <u>5</u>	>	INFERRED FROM	INCLUDE	DTID (4006) "Mammography CAD Single Image Finding"	1-n	UC	May be present only if value of parent is (F-01775,SRT, "Calcification Cluster")	EV (F-01776,SRT, "Individual Calcification")
<u>252</u> <u>6</u>	>	HAS OBS CONTEXT	INCLUDE	DTID (4022) "CAD Observation Context"	1	MC	Shall be present only if this finding is incorporated from a different report than its parent.	

Content Item Descriptions

Rendering Intent	This content item constrains the SCP receiving the Mammography CAD SR IOD in its use of the contents of this template and its target content items. Mammography CAD devices may opt to use data marked "Not for
------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	Presentation” or “Presentation Optional” as input to subsequent mammography CAD processing steps. Refer to PS 3.4, Annex O Structured Reporting Storage SOP Classes for SCU and SCP Behavior.
CAD Operating Point	Additional information to use when Rendering Intent is “Presentation Optional”. A CAD Operating Point of zero is not sent, and is encoded as a Rendering Intent of “Presentation Required”. See PS 3.4 section on Structured Reporting Storage SOP Classes for SCU and SCP Behavior and PS 3.17 annex on Mammography.
Single Image Finding	A Single Image Finding (whose parent is a Single Image Finding of type Calcification Cluster) allows one level of nesting for the definition of individual calcifications within the cluster. To use this template recursively, this Single Image Finding code value shall be “Individual Calcification”.
Certainty of Finding	The likelihood that the finding detected, and classified by the CODE specified in the Single Image Finding parent template, is in fact that type of finding.