

## DICOM Correction Proposal

STATUS	Assigned
Date of Last Update	2023/08/30
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Submission Date	2023/04/25

Correction Number	CP-2343
Log Summary: Add Spacer and Device to RT ROI Interpreted Type	
Name of Standard PS3.3	
Rationale for Correction: There are no appropriate Defined Terms for RT ROI Interpreted Type (3006,00A4) representing radioprotective spacers or implants/devices (e.g., CIEDs, breast expanders). In order to not further stretch the overloaded concept of the Defined Terms of RT ROI Interpreted Type (3006,00A4), but to encourage implementers to use codes instead, only a generic term is introduced for a device where the details are available using the Segmented Property Category Code Sequence (0062,0003) and the RT ROI Identification Code Sequence (3006,0086).	
Correction Wording:	

*In PS3.3 change Table C.8-44*

### C.8.8.8 RT ROI Observations Module

The RT ROI Observations Module specifies the identification and interpretation of an ROI specified in the Structure Set Module and ROI Contour Module.

**Table C.8-44. RT ROI Observations Module Attributes**

Attribute Name	Tag	Type	Attribute Description
RT ROI Observations Sequence	(3006,0080)	1	Sequence of observations related to ROIs. One or more Items shall be included in this Sequence.
>Observation Number	(3006,0082)	1	Identification number of the Observation. The value of Observation Number (3006,0082) shall be unique within the RT ROI Observations Sequence (3006,0080).
...			
>RT ROI Interpreted Type	(3006,00A4)	2	Type of ROI. See Section C.8.8.8.1. Defined Terms: EXTERNAL external patient contour

Attribute Name	Tag	Type	Attribute Description
			PTV Planning Target Volume (as defined in [ICRU Report 50])
			CTV Clinical Target Volume (as defined in [ICRU Report 50])
			GTV Gross Tumor Volume (as defined in [ICRU Report 50])
			TREATED_VOLUME Treated Volume (as defined in [ICRU Report 50])
			IRRAD_VOLUME Irradiated Volume (as defined in [ICRU Report 50])
			OAR Organ at Risk (as defined in [ICRU Report 50])
			BOLUS patient bolus to be used for external beam therapy
			AVOIDANCE region in which dose is to be minimized
			ORGAN patient organ
			MARKER patient marker or marker on a localizer
			REGISTRATION registration ROI
			ISOCENTER treatment isocenter to be used for external beam therapy
			CONTRAST_AGENT volume into which a contrast agent has been injected
			CAVITY patient anatomical cavity
			BRACHY_CHANNEL brachytherapy channel
			BRACHY_ACCESSORY brachytherapy accessory device
			BRACHY_SRC_APP brachytherapy source applicator
			BRACHY_CHNL_SHLD brachytherapy channel shield
			SUPPORT external patient support device
			FIXATION external patient fixation or immobilization device
			DOSE_REGION ROI to be used as a dose reference
			CONTROL ROI to be used in control of dose optimization and calculation
			DOSE_MEASUREMENT ROI representing a dose measurement device, such as a chamber or TLD
			<b><u>INTERNAL SPACER ROI representing an internal spacer (e.g. hydrogel)</u></b>
			<b><u>OTHER_DEVICE device not addressed by another Defined Term</u></b>

In PS3.3 update C.8.8.3.1

**C.8.8.3.1 Mapping of RT ROI Interpreted Type**

Table C.8.8.8.3.1-1 defines a mapping between the geometric concepts represented in RT ROI Interpreted Type (3006,00A4) and coded values in Segmented Property Category Code Sequence (0062,0003) in combination with RT ROI Identification Code Sequence (3006,0086).

**Table C.8.8.8.3.1-1. RT ROI Interpreted Type Code Mapping**

<b>RT ROI Interpreted Type (3006,00A4)</b>	<b>Segmented Property Category Code Sequence (0062,0003)</b>	<b>RT ROI Identification Code Sequence (3006,0086)</b>
EXTERNAL	(130047, DCM, "External Body Model")	Any value from DCID 9507 "External Body Model"
BOLUS	(130405, DCM, "Patient-Attached Dose Control Object")	(228736002, SCT, "Surface Bolus")
MARKER	(130666, DCM, "Radiotherapy Fiducial")	Any value from BCID 7112 "Radiotherapy Fiducial"
ISOCENTER	(130043, DCM, "RT Geometric Information")	(130073, DCM, "Isocentric Treatment Location")
CONTRAST_AGENT	(105590001, SCT, "Substance")	(7140000, SCT, "Contrast agent")
CAVITY	(91723000, SCT, "Anatomical Structure")	(91806002, SCT, "Body Cavity")
BRACHY_CHANNEL	(130045, DCM, "Brachytherapy Device")	(130080, DCM, "Brachytherapy channel")
BRACHY_ACCESSORY	(130045, DCM, "Brachytherapy Device")	No Baseline CID defined.
BRACHY_SRC_APP	(130045, DCM, "Brachytherapy Device")	(130078, DCM, "Brachytherapy source applicator")
BRACHY_CHNL_SHLD	(130045, DCM, "Brachytherapy Device")	(130079, DCM, "Brachytherapy channel shield")
SUPPORT	(130044, DCM, "Fixation or Positioning Device")	Any value from DCID 9515 "RT Patient Support Device"
FIXATION	(130044, DCM, "Fixation or Positioning Device")	Any value from DCID 9513 "Fixation Device"
DOSE_REGION	(130748, DCM, "Radiotherapy Dose Region")	(130747, DCM, "Isodose Volume")
DOSE_MEASUREMENT	(260787004, SCT, "Physical object")	Any value from DCID 7027 "Segmented Radiotherapeutic Dose Measurement Device"
<b><u>INTERNAL SPACER</u></b>	<b><u>(260787004, SCT, "Physical object")</u></b>	<b><u>Any value from DCID CCC1 "Spacers"</u></b>
<b><u>OTHER DEVICE</u></b>	<b><u>(260787004, SCT, "Physical object")</u></b>	<b><u>Any value from DCID 7157 "Device Segmentation Type" or DCID 6401 "Non-lesion Object Type – Physical Object"</u></b>

Add to PS3.6 Annex A, Table A-3

**Table A-3 CONTEXT GROUP UID VALUES**

Context UID	Context Identifier	Context Group Name
<u>1.2.840.10008.6.1.CCC1</u>	<u>CCC1</u>	<u>Spacers</u>

Add to PS3.16, Annex B

## CID CCC1 Spacers

Resources: [HTML](#) | [FHIR JSON](#) | [FHIR XML](#) | [IHE SVS XML](#)

Keyword: Spacers

FHIR Keyword: dicom-cid-CCC1-Spacers

Type: Extensible

Version: YYYYMMDD

UID: 1.2.840.10008.6.1.CCC1

Table CID CCC1 Spacers

<u>Coding Scheme Designator</u>	<u>Code Value</u>	<u>Code Meaning</u>	<u>SNOMED-RT ID</u>	<u>UMLS Concept Unique ID</u>
<u>SCT</u>	<u>243135003</u>	<u>Spacer</u>		
<u>SCT</u>	<u>725934004</u>	<u>Biodegradable spacer</u>		
<u>SCT</u>	<u>310630001</u>	<u>Breast tissue expander</u>		

Update in PS3.16, Annex B

## CID 6401 Non-lesion Object Type - Physical Object

Resources: [HTML](#) | [FHIR JSON](#) | [FHIR XML](#) | [IHE SVS XML](#)

Keyword: NonLesionObjectTypePhysicalObject

FHIR Keyword: dicom-cid-6401-NonLesionObjectTypePhysicalObject

Type: Extensible

Version: YYYYMMDD

UID: 1.2.840.10008.6.1.1185

Table CID 6401. Non-lesion Object Type - Physical Object

<u>Coding Scheme Designator</u>	<u>Code Value</u>	<u>Code Meaning</u>	<u>SNOMED-RT ID</u>	<u>UMLS Concept Unique ID</u>
<u><i>Include CID CCC1 "Spacers"</i></u>				
<u><i>Include CID 3777 "Implanted Device"</i></u>				
<u>SCT</u>	<u>102378009</u>	<u>BB shot (Lead Pellet)</u>	<u>A-32475</u>	<u>C0522706</u>
<u>SCT</u>	<u>86122002</u>	<u>Bullet</u>	<u>A-32110</u>	<u>C0336699</u>
<b><u>SCT</u></b>	<b><u>118378005</u></b>	<b><u>Cardiac Pacemaker</u></b>	<b><u>A-11101</u></b>	<b><u>G1289799</u></b>
<u>SCT</u>	<u>19923001</u>	<u>Catheter</u>	<u>A-26800</u>	<u>C0085590</u>
<u>SCT</u>	<u>77720000</u>	<u>Clip</u>	<u>A-12062</u>	<u>C0175722</u>
<u>SCT</u>	<u>228761004</u>	<u>Collimator</u>	<u>A-0110F</u>	<u>C0454169</u>

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-RT ID	UMLS Concept Unique ID
SCT	<u>129460009</u>	Compression paddle	<u>A-10042</u>	<u>C1268544</u>
SCT	<u>129467007</u>	ID Plate	<u>A-16016</u>	<u>C1268548</u>
SCT	<u>40388003</u>	Implant	<u>A-04010</u>	<u>C0021102</u>
SCT	<u>129463006</u>	J Wire	<u>A-1016B</u>	<u>C1268545</u>
SCT	<u>262301009</u>	Opaque Marker	<u>A-00D7B</u>	<u>C0445402</u>
DCM	<u>111175</u>	Other Marker		
SCT	<u>56353002</u>	Staple	<u>A-13600</u>	<u>C0524724</u>
SCT	<u>27065002</u>	Suture	<u>A-13500</u>	<u>C0038969</u>

Update in PS3.16, Annex B

## CID 3777 Implanted Device

Resources: [HTML](#) | [FHIR JSON](#) | [FHIR XML](#) | [IHE SVS XML](#)  
 Keyword: [ImplantedDevice](#)  
 FHIR Keyword: [dicom-cid-3777-ImplantedDevice](#)  
 Type: Extensible  
 Version: 20070827  
 UID: 1.2.840.10008.6.1.263

Table CID 3777. Implanted Device

Coding Scheme Designator	Code Value	Code Meaning	SNOMED-RT ID	UMLS Concept Unique ID
SCT	<u>14106009</u>	Cardiac pacemaker	<u>A-11100</u>	<u>C0030163</u>
SCT	<u>72506001</u>	Implantable defibrillator	<u>A-11206</u>	<u>C0162589</u>
SCT	<u>360066001</u>	Left ventricular assist device	<u>A-11FCD</u>	<u>C0181598</u>
SCT	<u>69805005</u>	Insulin pump	<u>A-28040</u>	<u>C1140609</u>
<b><u>SCT</u></b>	<b><u>43252007</u></b>	<b><u>Cochlear Implant</u></b>		