

DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2014/01/08
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Correction Number	CP-1291
Log Summary: Additional Derivation Codes For Dose Composition	
Name of Standard PS 3 2011 Part 16	
Rationale for Correction: IHE-RO Profiles are considering to include the annotation of how a dose was composited, when the dose was derived solely or additionally (to an RT Plan) using other doses. This change proposal includes the corresponding attributes from the General Image module to the RT Dose object and adds the specific derivation codes to support the dose composition semantics.	
Correction Wording:	

In PS 3.3, C.8.8.3 RT Dose Module, add the following attributes:

...			
Grid Frame Offset Vector	(3004,000C)	1C	An array which contains the dose image plane offsets (in mm) of the dose image frames in a multi-frame dose. Required if multi-frame pixel data are present and Frame Increment Pointer (0028,0009) points to Grid Frame Offset Vector (3004,000C). See C.8.8.3.2.
Dose Grid Scaling	(3004,000E)	1C	Scaling factor that when multiplied by the dose grid data found in the Pixel Data (7FE0,0010) attribute of the Image Pixel Module, yields grid doses in the dose units as specified by Dose Units (3004,0002). Required if Pixel Data (7FE0,0010) is present.
Tissue Heterogeneity Correction	(3004,0014)	3	Specifies a list of patient heterogeneity characteristics used for calculating dose. This Attribute shall be multi-valued if beams used to compute the dose have differing correction techniques. Enumerated Values: IMAGE = image data ROI_OVERRIDE = one or more ROI densities override image or water values where they exist

			WATER = entire volume treated as water equivalent
<u>Derivation Code Sequence</u>	<u>(0008,9215)</u>	<u>3</u>	<u>A coded description of how this dose was derived from other RT Dose and/or RT Plan objects.</u> <u>One or more Items are permitted in this Sequence. More than one Item indicates that successive derivation steps have been applied.</u>
<u>>Include 'Code Sequence Macro' Table 8.8-1</u>			<u>Defined CID 7220.</u>
<u>Referenced Instance Sequence</u>	<u>(0008,114A)</u>	<u>3</u>	<u>The set of SOP Instances used to derive this RT Dose SOP instance.</u> <u>One or more Items are permitted in this Sequence.</u>
<u>>Include SOP Instance Reference Macro Table 10-11</u>			
<u>>Purpose of Reference Code Sequence</u>	<u>(0040,A170)</u>	<u>1</u>	<u>Code describing the purpose of the reference to the Instance(s).</u> <u>Only a single Item shall be included in this sequence.</u>
<u>>>>Include 'Code Sequence Macro' Table 8.8-1</u>			<u>Defined CID 7221.</u>

In PS 3.16, add the following CID to Annex B:

CID 7220 RT Dose Derivation

Context ID 7220
RT Dose Derivation
Type: Extensible Version: 20140106

Coding Scheme Designator (0008,0102)	Code Value (0008,0100)	Code Meaning (0008,0104)
<u>DCM</u>	<u>121370</u>	<u>Composed from prior doses</u>
<u>DCM</u>	<u>121371</u>	<u>Composed from prior doses and current plan</u>

CID 7221 RT Dose Purpose of Reference

Context ID 7221
RT Dose Purpose of Reference
Type: Extensible Version: 20140106

Coding Scheme Designator (0008,0102)	Code Value (0008,0100)	Code Meaning (0008,0104)
<u>DCM</u>	<u>121372</u>	<u>Source dose for composing current dose</u>

In PS 3.16, add the following to Annex D:

ANNEX D DICOM CONTROLLED TERMINOLOGY DEFINITIONS (NORMATIVE)

Code Value	Code Meaning	Definition	Notes
<u>121370</u>	<u>Composed from prior doses</u>	<u>The dose object created was calculated by summation of existing, previously calculated, RT Dose instances.</u>	
<u>121371</u>	<u>Composed from prior doses and current plan</u>	<u>The dose object created was calculated by summation of existing, previously calculated, RT Dose instances and dose newly calculated by the application. The newly calculated dose may or may not exist as an independent object.</u>	
<u>121372</u>	<u>Source dose for composing current dose</u>	<u>RT Dose Instances used as source for calculated dose.</u>	

In PS 3.6, add the following to Annex A:

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

Context UID	Context Identifier	Context Group Name
...		
<u>1.2.840.10008.6.1.968</u>	<u>7220</u>	<u>RT Dose Derivation</u>
<u>1.2.840.10008.6.1.969</u>	<u>7221</u>	<u>RT Dose Purpose of Reference</u>