

DICOM Correction Proposal

STATUS	Letter Ballot
Date of Last Update	2024/08/24
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Correction Number	CP-2402
Log Summary:	Isodose levels for RT Dose visualization
Name of Standard	PS3.3, PS3.6
Rationale for Correction:	<p>When 3D dose distributions are viewed and evaluated in different systems, it is useful to have the same isodose levels to make the evaluation easier.</p> <p>This CP adds a new sequence to RT Dose Module that contains the values and colors for the isodose levels for the visualization purposes. Actual generation of the isodoses is up to the viewing application.</p>
Correction Wording:	

Update PS 3.3 section C.8.8.3 RT Dose Module

Table C.8-39. RT Dose Module Attributes

Attribute Name	Tag	Type	Attribute Description
Samples per Pixel	(0028,0002)	1C	Number of samples (planes) in this image. See Section C.8.8.3.4.1 for specialization. Required if Pixel Data (7FE0,0010) is present.
...			
Tissue Heterogeneity Correction	(3004,0014)	3	<p>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.</p> <p>Enumerated Values:</p> <p>IMAGE image data</p> <p>ROI_OVERRIDE one or more ROI densities override image or water values where they exist</p> <p>WATER entire volume treated as water equivalent</p>
<u>Recommended Isodose Level Sequence</u>	<u>(gggg,nnnn)</u>	<u>3</u>	<p><u>Recommended isodose levels that can be used in the visualization of the dose distribution.</u></p> <p><u>One or more Items are permitted in this Sequence.</u></p>
<u>>Dose Value</u>	<u>(3004,0012)</u>	<u>1</u>	<u>Value for the isodose given in units defined by Dose Units (3004,0002).</u>

Attribute Name	Tag	Type	Attribute Description
>Recommended Display CIELab Value	(0062,000D)	1	<u>A default triplet value in which it is recommended that the isodose level be rendered on a color display. The units are specified in PCS-Values, and the value is encoded as CIELab.</u> <u>See C.10.7.1.1.</u>
Derivation Code Sequence	(0008,9215)	3	A coded description of how this dose was derived from other RT Dose and/or RT Plan objects. One or more Items are permitted in this Sequence. More than one Item indicates that successive derivation steps have been applied.
>Include Table 8.8-1 "Code Sequence Macro Attributes"			DCID 7220 "RT Dose Derivation".
Referenced Instance Sequence	(0008,114A)	3	The set of SOP Instances used to derive this RT Dose SOP Instance. One or more Items are permitted in this Sequence.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"			
>Purpose of Reference Code Sequence	(0040,A170)	1	Code describing the purpose of the reference to the Instance(s). Only a single Item is permitted in this Sequence.
>>Include Table 8.8-1 "Code Sequence Macro Attributes"			DCID 7221 "RT Dose Purpose of Reference".

Update section 6 in PS3.6

Tag	Name	Keyword	VR	VM	
(gggg,nnnn)	<u>Recommended Isodose Level Sequence</u>	<u>RecommendedIsodoseLevelSequence</u>	<u>SQ</u>	<u>1</u>	
(3004,0012)	Dose Value	DoseValue	DS	1	RET (2022d)