

DICOM Correction Item

Correction Number		CP-347
Log Summary: Support for characterization of fluence maps in radiotherapy		
Type of Modification:	Name of Standard	
Extension	PS 3.3, 3.6 2003	
Rationale for Correction:		
<p>The RT Image object does not provide the ability to characterize fluence map information for the beams used in radiotherapy treatment planning. With the increased complexity in Intensity Modulated Radiotherapy (IMRT), it is important that fluence map information for each beam be included in the RT Image object for plan verification purposes.</p> <p>This proposal adds the attributes necessary to the RT Image object permitting specification of one or more fluence maps for each radiotherapy beam defined in the RT Plan Module.</p>		
Sections of document affected:		
PS 3.3 (Information Object Definitions), Section C.8.8.2 (RT Image Module)		
PS 3.6 (Data Dictionary), Section 6 (Registry of DICOM Data Elements)		
Correction Wording:		

In PS 3.3, Section C.8.8.2, modify and add attributes in Table 8-34:

C.8.8.2 RT Image Module

...

Table C.8-34—RT IMAGE MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
...
Image Type	(0008,0008)	1	Image identification characteristics (see Section C.7.6.1.1.2). RT Images shall use one of the following Defined Terms for Value 3: DRR = digitally reconstructed radiograph PORTAL = digital portal image or portal film image SIMULATOR = conventional simulator image RADIOGRAPH = radiographic image BLANK = image pixels set to background value FLUENCE = fluence map
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End Cumulative Meterset Weight	(300C,0009)	3	Cumulative Meterset Weight within Beam referenced by Referenced Beam Number (300C,0006) at which image acquisition ends.
<u>Fluence Map Sequence</u>	(3002,0040)	1 C	<u>A Sequence of data describing the fluence map attributes for a radiotherapy beam.</u> <u>Only one item may be included in this sequence.</u> <u>Required if the third value of Image Type (0008,0008) is FLUENCE.</u>
>Fluence Data Source	(3002,0041)	1	<u>Source of fluence data.</u> <u>Enumerated Values:</u> <u>CALCULATED = Calculated by a workstation</u> <u>MEASURED=Measured by exposure to a film or detector.</u>
>Fluence Data Scale	(3002,0042)	3	<u>The meterset corresponding with a fluence map cell value of 1.0 expressed in units specified by Primary Dosimeter Units (300A, 00B3). This is the meterset value used for treatment, not the meterset used to expose the film as defined by Meterset Exposure (3002,0032).</u>
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In PS 3.6 (Data Dictionary), add the following new attributes:

(3002,0040)	Fluence Map Sequence	SQ	1
(3002,0041)	Fluence Data Source	CS	1
(3002,0042)	Fluence Data Scale	DS	1