DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2013/06/17
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Correction Number	CP1248
Log Summary: Indication for deformed RT Dose	
Name of Standard PS 3 2011	
Rationale for Correction: When a volumetric RT dose represented by the RT Dose SOP is deformed, the quality of that dose is compromised in some way. The dose maybe transformed into another FOR, so that the validity of the calculated dose is not on the same level as an does being calculated on the original FOR. The same happens, if a dose is transformed into another image set of the same FOR, which e.g. may happen in case of a PET-CT pair taken at a combined PET-CT scanner. It is difficult and in case of transformation into the same FOR rather complex to trace this transformation. Further on, an application receiving such a transformed dose may not have support for other objects (like RT Plan) at all to be able to figure out, that this is not the originally calculated dose. Therefore the RT Dose shall have an indication that this dose resulted from a transformation into another image set. This CP introduces this indication.	
Correction Wording:	

In PS 3.3, Section C.8.8.3 RT Dose Module, Table C.8.39, make the following changes:

Attribute Name	Tag	Type	Description
…			
Dose Type	(3004,0004)	1	Type of dose. Defined Terms: PHYSICAL = physical dose EFFECTIVE = physical dose after correction for biological effect using user-defined modeling technique ERROR = difference between desired and planned dose
Spatial Transform of Dose	**(3004,0005)**	**3**	**The use of transformation in the calculation of the combined dose.** **Defined Terms:** **NONE: No transformation. Calculated on the original image set** **RIGID: Only Rigid transform used (see definition in C.20.2.1.2)** **NON_RIGID: Any other transform used**

Attribute Name	Tag	Type	Description
Referenced Spatial Registration Sequence	**(0070,0404)**	**2C**	**A reference to a Spatial Registration SOP Instance or a Deformable Spatial Registration SOP Instance, which defines the transformation used to transform the dose.**
			Required, if Spatial Transform of Dose (3004,0005) is provided and has a value of RIGID or NON_RIGID.
			Zero or more items shall be permitted in this sequence.
			See Section C.8.8.3.5
>Include 'SOP Instance Reference Macro' Table 10-11			

…

C.8.8.3.5 Referenced Spatial Registration Sequence

This sequence lists the registrations used to create the dose. It is important to note, that this sequence does not make any statement about how the dose was calculated or about the scope of objects contributing to a summed dose.

In PS 3.6, Section 6, add the following new attributes:

(3004,0005)	**Spatial Transform of Dose**	**SpatialTransformOfDose**	**CS**	**1**