DICOM Correction Item

Correction Number	CP-171
Log Summary: Add support for translation of RT Imaging Devices	

Type of Modification: Extension	Name of Standard PS 3.3-1999

Rationale for Correction:

The RT Image object provides a mechanism for specifying the coordinate system of the image acquired by an imaging device, by specifying X-ray Image Receptor Angle (3002,000E), RT Image Orientation (3002,0010), and RT Image Position (3002,0012).

However, some imaging devices appear to allow a translation of the IEC X-RAY IMAGE RECEPTOR coordinate system, as described by IEC-1217. This needs to be modeled within DICOM.

Sections of document affected:

PS 3.3-1999 (Information Object Definitions), Section C.8.8.2 (RT Image Module)
PS 3.6-1999 (Data Dictionary) Section 6 (Registry of DICOM data elements)

Correction Wording:

In DICOM PS 3.3-1999, Section C.8.8.2 (RT Image Module), Table C.8-34 (RT Image Module Attributes) add the following attribute immediately following RT Image Plane (3002,000C):

X-Ray Image Receptor Translation	(3002,000D)	3	Position in (x,y,z) coordinates of origin of IEC X-RAY IMAGE RECEPTOR System in the IEC GANTRY coordinate system (mm). See Note 2.

In DICOM PS 3.3-1999, Section C.8.8.2 (RT Image Module), add the following note (as Note 2) after the existing note at the end of Table C.8-34 (RT Image Module Attributes):

Notes: 2. The Z coordinate of the X-Ray Image Receptor Translation (3002,000D) will be equal to the Radiation Machine SAD (3002,0022) minus the RT Image SID (3002,0026). If the image receptor is further from the beam source than the machine isocenter, the Z coordinate will be negative (see IEC 1217).

In DICOM PS 3.6-1999, Section 6 (Registry of DICOM data elements), add the following attribute:

(3002,000D)	X-Ray Image Receptor Translation	DS	3