

DICOM Correction Proposal Form

Correction Number		CP-212	
Log Summary: Clarification of Image Position (0020,0032) in 3 rd dimension			
Type of Modification		Name of Standard	
Clarification		PS 3.3 2000	
<p>Rationale for Correction:</p> <p>The Image Position attribute description in table C.7-8 is defined as: "The x, y, and z coordinates of the upper left hand corner (center of the first pixel transmitted) of the image, in mm. See C.7.6.2.1.1 for further explanation."</p> <p>Section C.7.6.2.1.1 Image Position And Image Orientation describes the data element Image Position (0020,0032) as following: "The Image Position (0020,0032) specifies the x, y, and z coordinates of the upper left hand corner of the image; it is the center of the first pixel transmitted."</p> <p>In these definitions, it is not clear if Image Position (0020,0032) is located on the center of the slice thickness or on the surface. If different applications use different coordinate systems (e.g. Graphical Slice Positioning, 3D, Multi Planar Reconstruction, RT Treatment) this could result in a half slice thickness error.</p> <p>With DICOM Correction Item CP-137 the x and y coordinates were clarified to be the center of the pixel.</p> <p>Additionally the definition of the attribute Image Position (0020,0032) in the NM Detector Module should be updated accordingly.</p>			
<p>Sections of documents affected:</p> <p>PS 3.3, Table C.7-8 IMAGE PLANE MODULE ATTRIBUTES</p> <p>PS 3.3, Table C.8-11 NM DETECTOR MODULE ATTRIBUTES</p> <p>PS 3.3, Section C.7.6.2.1.1 Image Position and Image Orientation</p>			
Suggested Wording of Changes:			

**Table C.7-8
 IMAGE PLANE MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Image Position (Patient)	(0020,0032)	1	The x, y, and z coordinates of the upper left hand corner (center of the first pixel voxel transmitted) of the image, in mm. See C.7.6.2.1.1 for further explanation.

**Table C.8-11
 NM DETECTOR MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
>Image Position (Patient)	(0020,0032)	2C	The x, y, and z coordinates of the upper left hand corner (center of the first pixel pixel voxel transmitted) of the image, in mm . See C.7.6.2.1.1 for further explanation. Required if a sequence item is present.

C.7.6.2.1.1 Image Position And Image Orientation

The Image Position (0020,0032) specifies the x, y, and z coordinates of the upper left hand corner of the image; it is the center of the first ~~pixel~~ **voxel** transmitted. Image Orientation (0020,0037) specifies the direction cosines of the first row and the first column with respect to the patient. These Attributes shall be provide as a pair. Row value for the x, y, and z axes respectively followed by the Column value for the x, y, and z axes respectively.