

# DICOM Correction Proposal Form

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Correction Number		CP-87	
Log Summary: Overlay Bits Allocated			
Type of Modification: Clarification		Name of Standard PS 3.3	
<p>Rationale for Correction:</p> <p>Overlay data may be in (60xx,3000). If they are, Bits Allocated, Bit Position, and Overlay Data are required. If the data are imbedded with the pixel data, only Bit Position should be present. Bits Allocated in group 60xx must be the same as allocated for the image pixel data in group 7FE0. Overlay Data should be changed to 1C, required if the overlay data are contained in this Group, not allowed if the overlay data are contained in Image Pixel Data (7FE0,0010). Also the Descriptions and other things need to be cleaned up.</p>			
<p>Sections of document affected:</p> <p>See each section below</p>			
<p>Correction Wording:</p> <p>See below.</p>			

4 **PS 3.3, modify C.9.2**

**C.9.2 Overlay Plane Module**

6 The table in this section contains Attributes that describe characteristics of an Overlay Plane.

8 An overlay plane describes graphics or bit-mapped text that is associated with an image or has its own existence within a series. It may also describe a Region of Interest in an image.

10 Each overlay plane is one bit deep. Sixteen separate overlay planes may be associated with an image or exist as standalone overlays in a series.

12 Overlay pixel data are stored either in Overlay Data (60xx,3000) or embedded in the image pixel data in Image Pixel Data (7FE0,0010). See PS 3.5 for a description of overlay pixel data imbedded with image pixel data. See the section Repeating Groups in PS 3.5 for a description of permitted values of 60xx.

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**PS 3.3, make the following changes in C.9.2**

Overlay Type	(60xx,0040)	1	<p>Indicates whether this overlay represents a region of interest or other graphics.</p> <p>Enumerated Values:</p> <p>G = Graphics</p> <p>R = ROI</p> <p>See C.9.2.1.1 for further explanation.</p>
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Overlay Bits Allocated	(60xx,0100)	1	Number of bits allocated for the overlay. If the overlay data are embedded in the Image Pixel Data (7FE0,0010), the value of this Attribute shall be the same as Bits Allocated (0028,0100).
<u>Overlay Bit Position</u>	(60xx,0102)	1	Bit in which the single overlay pixel is stored. See PS 3.5 for further explanation.
Overlay Data	(60xx,3000)	1C	<u>Overlay pixel data</u> The order of pixels sent for each overlay is left to right, top to bottom , i.e., the upper left pixel is sent first followed by the remainder of the first row , followed by the first pixel of the 2nd row, then the remainder of the 2nd row and so on.  Overlay data shall be contained in this Attribute or embedded with the image pixel data in Group 7FE0. Required if overlay data are in this Group. See C.9.2.1.1 for further explanation.

2 **C.9.2.1 Overlay Attribute Descriptions**

**C.9.2.1.1 Overlay type**

4 There are two specific types of overlays. The type is specified in this Attribute.

6 A Region of Interest (ROI) is a specific use of an Overlay. The overlay bits corresponding to all the pixels included in the ROI shall be set to 1. All other bits are set to 0. This is used to specify an area of the image of particular interest.

8 A Graphics overlay may express reference marks, graphic annotation, or bit mapped text, etc. A Graphics overlay may be used to mark the boundary of a ROI. If this is the case and the ROI statistical parameters are used, they will only refer to the pixels under the boundaries, not those in the included regions.

12 The overlay bits corresponding to all the pixels included in the Graphics shall be set to 1. All other bits are set to 0.

**C.9.2.1.2 ROI area, ROI mean, and ROI standard deviation**

14 These Attributes contain the statistical parameters of the ROI. The values of these parameters are for the overlay pixel values set to 1.