DICOM Correction Proposal Form

Correction Number	CP-223
Log Summary: Radiotherapy block and compensator mounting direction	
Type of Modification: Extension	Name of Standard PS 3.3-2001

Rationale for Correction:

Within the RT Beams Module of the RT Plan IOD, blocks and compensators can be specified to modify treatment beam shape. However, the current definitions do not completely handle issues related to the realization of these modifiers, in particular:

>The side of the block tray to which a block is mounted
>Whether compensators are divergent
>The side of the compensator tray to which a compensator is mounted

Sections of document affected:

Part 3 (Information Object Definitions), Section C.8.8.2 (RT Image Module) and Section C.8.8.14 (RT Beams Module)
Part 6 (Data Dictionary)

Correction Wording:

In Part 3, Table C.8-34 (RT Image Module Attributes) and Table C.8-46 (RT Beams Module Attributes), add the following attribute immediately after Block Divergence (300A,00FA):

>>Block Mounting Position (300A,00FB) 3 Indicates on which side of the Block Tray the block is mounted.
Enumerated Values:
PATIENT_SIDE = the block is mounted on the side of the Block Tray which is towards the patient.
SOURCE_SIDE = the block is mounted on the side of the Block Tray which is towards the radiation source.

In Part 3, Table C.8-46 (RT Beams Module Attributes), add the following attributes immediately after Source to Compensator Tray Distance (300A,00E6):

>>Compensator Divergence (300A,02E0) 3 Indicates presence or absence of geometrical divergence of the compensator.
Enumerated Values:
PRESENT = the compensator is

shaped according to the beam geometrical divergence.
ABSENT = the compensator is not shaped according to the beam geometrical divergence.

>>Compensator Mounting Position	**(300A,02E1)**	**3**	**Indicates on which side of the Compensator Tray the compensator is mounted. Enumerated Values:** **PATIENT_SIDE = the compensator is mounted on the side of the Compensator Tray which is towards the patient.** **SOURCE_SIDE = the compensator is mounted on the side of the Compensator Tray which is towards the radiation source.** **DOUBLE_SIDED = the compensator has a shaped (i.e. non-flat) surface on both sides of the Compensator Tray.**

In Part 3, Table C.8-46 (RT Beams Module Attributes), modify the attribute description for Compensator Thickness Data (300A,00EC):

>>Compensator Thickness Data	(300A,00EC)	1C	A data stream of the pixel samples which comprise the compensator, expressed as thickness (in mm)~~, parallel to radiation beam axis.~~ The order of pixels sent is left to right, top to bottom (upper left pixel, followed by the remainder of row 1, followed by the remainder of the columns). Required if Compensator Sequence (300A,00E3) is sent and Material ID (300A,00E1) is non-zero length. **See C.8.8.14.9.**

In Part 3, Table C.8-46 (RT Beams Module Attributes), add the following attribute immediately after Compensator Thickness Data (300A,00EC):

>>Source to Compensator Distance	**(300A,02E2)**	**1C**	**A data stream of the pixel samples which comprise the distance from the radiation source to the compensator surface closest to the radiation source (in mm). The order of pixels sent is left to right, top to bottom (upper left pixel, followed by the remainder of row 1, followed by the remainder of the columns).**

	Required if Compensator Sequence (300A,00E3) is sent, Material ID (300A,00E1) is non-zero length, and Compensator Mounting Position (300A,02E1) is DOUBLE_SIDED. See C.8.8.14.9.

In Part 3, Section C.8.8.14 (RT Beams Module), add the following normative subsection.

C.8.8.14.9 Compensator Thickness Data and Source to Compensator Distance

The values stored in Compensator Thickness Data (300A,00EC) and Source to Compensator Distance (300A,02E2) shall be parallel to the radiation beam axis if Compensator Divergence (300A,02E0) equals ABSENT, or divergent according to the beam geometrical divergence if Compensator Divergence (300A,02E0) equals PRESENT. If Compensator Divergence (300A,02E0) is not sent, then the parallel or divergent nature of the thicknesses is as if ABSENT was specified for Compensator Divergence (300A,02E0).

In Part 6 (Data Dictionary), add four new attributes:

(300A,00FB)	**Block Mounting Position**	**C S**	**1**
(300A,02E0)	**Compensator Divergence**	**C S**	**1**
(300A,02E1)	**Compensator Mounting Position**	**C S**	**1**
(300A,02E2)	**Source to Compensator Distance**	**D S**	**1-n**