DICOM Correction Item

Correction Number CP-576	
Log Summary: Motion Synchronization in RT	
Type of Modification Addition	Name of Standard PS 3 2006
Rationale for Correction: There are a number of new technologies that are used for Respiratory Motion Compensation. Each of these technologies performs different functions and so has different parameters associated with it. A number of these techniques may be used in combination. It is proposed to add a Motion Synchronization Sequence in the RT PATIENT SETUP MODULE to indicate only the generic type of Motion techniques and their associated IDs. Additional attributes are needed to allow patient specific modifiers (both human and machine readable) to be present in order to correctly setup the motion-synchronizing equipment.	
Sections of documents affected: PS 3.3, C.8.8.12 (RT Patient Setup Module) PS 3.6, Section 6 (Registry of DICOM Data Elements)	
Correction Wording: *In Part 3, Section C.8.8.12 the following attributes in bold shall be added in the RT Patient Setup Module:*	

Attribute Name	Tag	Type	Attribute Description
Patient Setup Sequence	(300A,0180)	1	Introduces sequence of patient setup data for current plan. One or more items may be included in the sequence.
…			
>RT Motion Synchronization Sequence	**(300A,0410)**	**3**	**Introduces sequence of Motion Synchronization. One or more items may be included in this sequence.**
>>Respiratory Motion Compensation Technique	**(0018,9170)**	**1**	**Technique applied to reduce respiratory motion artifacts.** **Defined Terms:** **NONE** **BREATH_HOLD** **REALTIME =** **image acquisition shorter than respiratory cycle** **GATING = Prospective gating** **TRACKING =** **prospective through-plane or in-plane motion tracking** **PHASE_ORDERING =** **prospective phase ordering** **PHASE_RESCANNING =** **prospective techniques, such as real-time averaging, diminishing variance and motion adaptive gating** **RETROSPECTIVE =** **retrospective gating**

			CORRECTION = retrospective image correction **UNKNOWN = technique not known**
>>Respiratory Signal Source	**(0018,9171)**	**1**	**Signal source from which respiratory motion is derived.** **Defined Terms:** **NONE** **BELT** **NASAL_PROBE** **CO2_SENSOR** **NAVIGATOR = MR navigator and organ edge detection** **MR_PHASE = phase (of center k-space line)** **ECG = baseline demodulation of the ECG** **SPIROMETER = Signal derived from flow sensor** **EXTERNAL_MARKER = Signal determined from external motion surrogate** **INTERNAL_MARKER = Signal determined from internal motion surrogate** **IMAGE = Signal derived from an image** **UNKNOWN = Signal source not known**
>>Respiratory Motion Compensation Technique Description	**(0018,9185)**	**3**	**Description of respiratory motion compensation technique .**
>>Respiratory Signal Source ID	**(0018,9186)**	**3**	**Identifies the device providing the respiratory signal.**

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

Tag	Name	VR	VM
(300A,0410)	**Motion Synchronization Sequence**	**SQ**	**1**
(0018,9185)	**Respiratory Motion Compensation Technique Description**	**ST**	**1**
(0018,9186)	**Respiratory Signal Source ID**	**SH**	**1**