DICOM Correction Proposal Form

Correction Number CP-337	
Log Summary: Frame Presentation pointer for Multiframe XA and XRF Instances	
Type of Modification Correction	Name of Standard PS 3.3, PS 3.6 2003
Rationale for Correction The current XA and XRF IODs make no allowance for non-cine multiframe. There are several use cases for non-cine multiframe XA and XRF. A bolus chasing acquisition must be multiframe, but table position is critical for presentation ("image pasting"), and the difference in acquisition time is not significant. A rotational angiography (spin acquisition) image may be multiframe, but the significant frame increment attribute is not time, but positioner angle, and the intended display is not in cine mode. This CP proposes a Frame Dimension Pointer for non-cine multiframe XA and XRF objects. Similar to the Frame Increment Pointer, it points to attributes (in addition to time) that may be used for incrementing the multiframe presentation.	
Sections of documents affected PS 3.3 Section C.8.7.1 PS 3.6 Section 6	
Correction Wording:	

PS3.3 Section C.8.7.1

C.8.7.1 X-Ray Image Module

Table C.8-26 X-RAY IMAGE MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Frame Increment Pointer	(0028,0009)	1C	Required if Multi-Frame Image. Contains the Data Element Tag of the attribute which is used as the Frame increment in Multi-frame image pixel data (See C.7.6.6). Specialized for X-Ray as Enumerated Value: 00181063H = Frame Time (0018,1063); 00181065H = Frame Time Vector (0018,1065).
…			
Frame Dimension Pointer	**(0028,000A)**	**3**	**Contains the Data Element Tags of one or more attributes that vary or increment for the frames of a multi-frame image. See C.8.7.1.1.12.** **Shall not be present if it would contain only one value and that value would be Frame Time (0018,1063) or Frame Time Vector (0018,1065).**

Frame Label Vector	**(0018,2002)**	**3**	**A multi-valued attribute that contains a descriptive label for each of the image frames. The number of values shall equal the number of frames.**

…

C.8.7.1.1.12 Frame Dimension Pointer

Frame Dimension Pointer (0028,000A) identifes attributes that vary or increment with each frame, and which are clinically significant for viewing or processing the image. This is intended for SOP Instances whose prefered clinical presentation is dependent on frame relationships other than simply time.

Defined Terms for multiframe cine from the Cine Module (see C.7.6.5) are:

00181063H = Frame Time (0018,1063)
00181065H = Frame Time Vector (0018,1065)

Defined Terms for rotational acquisition from the XA Positioner Module (see C.8.7.5) are:

00181520H = Positioner Primary Angle Increment (0018,1520)
00181521H = Positioner Secondary Angle Increment (0018,1521)

Defined Terms for stepped acquisition from the X-Ray Table Module (see C.8.7.4) are:

00181135H = Table Vertical Increment (0018,1135)
00181137H = Table Longitudinal Increment (0018,1137)
00181136H = Table Lateral Increment (0018,1136)

Defined Terms for an arbitrary labeled increment:

00182002H = Frame Label Vector (0018,2002)

Notes: 1. Previous editions of the standard did not include the optional Frame Dimension Pointer (0028,000A), but instead depended entirely on the mandatory Frame Increment Pointer (0028,0009), and envisaged that frames would be related only by time and no other dimension. Image creators that add the Frame Dimension Pointer (0028,000A) must anticipate that many implementations will ignore or discard this attribute when displaying or storing images and continue to assume that frames are temporally related.

2. Frame Time (0018,1063) or Frame Time Vector (0018,1065) will also be present and will contain appropriate values consistent with the times of acquisition of the frames.

PS3.6 Section 6

(0028,000A)	**Frame Dimension Pointer**	**AT**	**1-n**	