

DICOM Correction Item

Correction Number	CP-474
Log Summary:	Apply Image Sequence Macro where appropriate
Type of Modification	Name of Standard
Modification	PS 3.3 2004
Rationale for Correction: The Image Sequence Macro was defined in Supplement 73, but its consistent application throughout the remainder of Part 3 was left to the CP process. Here it is.	
Sections of documents affected PS 3.3	
Correction Wording:	

**Table C.7-9
GENERAL IMAGE MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
...			
Referenced Image Sequence	(0008,1140)	3	A sequence that references other images significantly related to this image (e.g. post-localizer CT image or Mammographic biopsy or partial view images). One or more Items may be included in this sequence.
>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.
>Referenced Frame Number	(0008,1160)	3	References one or more image frames of a Multi-frame Image SOP Instance, identifying which frames are significantly related to this image, and the reference is not to all frames. Note: If this Attribute is not present, all frames of the SOP Instance are referenced.
>Include 'Image SOP Instance Reference Macro' Table 10-3			
>Purpose of Reference Code Sequence	(0040,A170)	3	Describes the purpose for which the reference is made. Only a single Item shall be permitted in this sequence.
>>Include 'Code Sequence Macro' Table 8.8-1			Defined Context ID is 7201.
...			
Source Image Sequence	(0008,2112)	3	A Sequence that identifies the set of Image SOP Class/Instance pairs of the Images that were used to derive this Image. Zero or more Items may be included in this Sequence. See C.7.6.1.1.4 for further explanation.
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Source Image Sequence (0008,2112) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Source Image Sequence (0008,2112) is sent.

>Referenced Frame Number	(0008,1160)	3	<p>References one or more image frames of a Multi-frame Image SOP Instance, identifying which frames were used to derive this image, and the reference is not to all frames.</p> <p>Note: — If this Attribute is not present, all frames of the SOP Instance are referenced.</p>
>Include 'Image SOP Instance Reference Macro' Table 10-3			
>Purpose of Reference Code Sequence	(0040,A170)	3	Describes the purpose for which the reference is made, that is what role the source image or frame(s) played in the derivation of this image. Only a single Item shall be permitted in this sequence.
>>Include 'Code Sequence Macro' Table 8.8-1			<i>Defined Context ID is 7202.</i>
...			

**Table C.7.6.16-6
REFERENCED IMAGE MACRO ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Referenced Image Sequence	(0008,1140)	2	A sequence that provides reference to a set of SOP Class/Instance pairs identifying images or other composite SOP Instances used to plan the acquisition or significant related images. See Section C.7.6.16.2.5.1 for further explanation. Zero or more Items may be included in this Sequence.
>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.
>Referenced Frame Number	(0008,1160)	1C	<p>References one or more image frames of a Multi-frame Image SOP Instance, identifying which frames are significantly related to this image.</p> <p>Required if reference is provided to a Multi-frame SOP Instance and not all frames are referenced.</p>
>Include 'Image SOP Instance Reference Macro' Table 10-3			

>Purpose of Reference Code Sequence	(0040,A170)	1	Describes the purpose for which the reference is made. Only a single Item shall be permitted in this sequence. See C.7.6.16.2.5.1 for further explanation.
<i>>>Include 'Code Sequence Macro' Table 8.8-1</i>			<i>Defined Context ID is 7201.</i>

**Table C.7.6.16-7
 DERIVATION IMAGE MACRO ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Derivation Image Sequence	(0008,9124)	2	A sequence that that provides reference to the set of SOP Class/Instance pairs of the Images or other composite SOP Instances which were used to derive this frame. Zero or more Items may be included in this Sequence.
>Derivation Description	(0008,2111)	3	A text description of how this frame data was derived. See C.7.6.1.1.3 for further explanation.
>Derivation Code Sequence	(0008,9215)	1	A coded description of how this frame was derived. See C.7.6.1.1.3 for further explanation.
<i>>>Include 'Code Sequence Macro' Table 8.8-1</i>			<i>Defined Context ID is 7203.</i>
>Source Image Sequence	(0008,2112)	2	A Sequence which identifies the set of Image or other SOP Class/Instance pairs of the Instances which were used to derive this frame. Zero or more Items may be included in this Sequence. See C.7.6.1.1.4 for further explanation.
>>Referenced SOP Class UID	(0008,1150)	4	Uniquely identifies the referenced SOP Class.
>>Referenced SOP Instance UID	(0008,1155)	4	Uniquely identifies the referenced SOP Instance.
>>Referenced Frame Number	(0008,1160)	1C	References one or more image frames of a Multi-frame SOP Instance, identifying which frames are significantly related to this image. Required if referenced to another Multi-frame image SOP Instance and not all frames are included.
<i>>>Include 'Image SOP Instance Reference Macro' Table 10-3</i>			

>>Purpose of Reference Code Sequence	(0040,A170)	1	Describes the purpose for which the reference is made, that is what role the source image or frame played in the derivation of this image or frame. Only a single Item shall be permitted in this sequence.
>>>Include 'Code Sequence Macro' Table 8.8-1			Defined Context ID is 7202.

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

Attribute Name	Tag	Type	Attribute Description
...
Referenced Image Sequence	(0008,1140)	1C	A sequence which provides reference to a set of Image SOP Class/Instance identifying other images significantly related to this image. Shall be present if Image Type (0008,0008) Value 3 is BIPLANE A or BIPLANE B. May be present otherwise. One or more items may be included in this sequence.. See Section C.8.7.1.1.12.
> Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.
> Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.
> Referenced Frame Number	(0008,1160)	3	References one or more image frames of a Multi-frame Image SOP Instance, identifying which frames are significantly related to this image, if the reference is not to all frames. Note: If this Attribute is not present, all frames of the SOP Instance are referenced.
>Include 'Image SOP Instance Reference Macro' Table 10-3			
>Purpose of Reference Code Sequence	(0040,A170)	2	Describes the purpose for which the reference is made. Only a single Item shall be permitted in this Sequence.
>>Include Code Sequence Macro Table 8.8-1			Defined Context ID 7201
...

Table C.8-41 – STRUCTURE SET MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
>>>Contour Image Sequence	(3006,0016)	1C	Introduces sequence of items describing images in a given series used in defining the Structure Set (typically CT or MR images). Required if RT Referenced Series Sequence (3006,0014) is sent. One or more items may be included in this sequence.
>>>>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced image SOP Class. Required if Contour Image Sequence (3006,0016) is sent.
>>>>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced image SOP Instance. Required if Contour Image Sequence (3006,0016) is sent.
>>>>Referenced Frame Number	(0008,1160)	3	Identifies image frame if a multi-frame image is referenced.
>>>>Include 'Image SOP Instance Reference Macro' Table 10-3			
...			

Table C.8-42 – ROI CONTOUR MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
...			
>>Contour Image Sequence	(3006,0016)	3	Introduces sequence of images containing the contour. One or more items may be included in this sequence.
>>>>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced image SOP Class of the image containing the Contour, if it exists. Required if Contour Image Sequence (3006,0016) is sent.
>>>>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced image SOP Instance of the image containing the Contour, if it exists. Required if Contour Image Sequence (3006,0016) is sent.
>>>>Referenced Frame Number	(0008,1160)	1C	Identifies image frame if a multi-frame image is referenced. Required if referenced image is a multi-frame image.
>>>>Include 'Image SOP Instance Reference Macro' Table 10-3			
...			

Table C.8-77
VL IMAGE MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
...
Referenced Image Sequence	(0008,1140)	1C	A Sequence that references other images significantly related to this image. One or more items may be included in this sequence. Required if Image Type (0008,0008) Value 3 is present and has a value of "STEREO L" or "STEREO R". May also be present otherwise. See Section C.8.12.1.1.7.
>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.
>Referenced Frame Number	(0008,1160)	3	References one or more image frames of a Multi-frame Image SOP Instance, identifying which frames are significantly related to this image, if the reference is not to all frames. Note: — If this Attribute is not present, all frames of the SOP Instance are referenced.
>Include 'Image SOP Instance Reference Macro' Table 10-3			
>Purpose of Reference Code Sequence	(0040,A170)	2	Describes the purpose for which the reference is made. Only a single Item shall be permitted in this Sequence.
>>Include Code Sequence Macro Table 8.8-1			Defined Context ID 7201
...

**Table C.10-4
 DISPLAYED AREA MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Displayed Area Selection Sequence	(0070,005A)	1	A sequence of Items each of which describes the displayed area selection for a group of images or frames. Sufficient Items shall be present to describe every image and frame listed in the Presentation State Module. One or more Items shall be present.
>Referenced Image Sequence	(0008,1140)	1C	Sequence of Repeating Items where each Item provides reference to a selected set of Image SOP Class/SOP Instance pairs that are defined in the Presentation State Module. Required if a sequence item is present, and if the displayed area selection in this Item does not apply to all the images listed in the Presentation State Module.
>>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if sequence item is present.
>>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if sequence item is present.
>>Referenced Frame Number	(0008,1160)	1C	Identifies the frame numbers within the referenced SOP Instance to which this displayed area selection applies. Required if sequence item is present and the referenced image is a multi-frame image and the displayed area selection does not apply to all frames.
>>>Include 'Image SOP Instance Reference Macro' Table 10-3			
...			

**Table C.10-5
 GRAPHIC ANNOTATION MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Graphic Annotation Sequence	(0070,0001)	1	A sequence of Items each of which represents a group of annotations composed of graphics or text or both. One or more Items shall be present.
>Referenced Image Sequence	(0008,1140)	1C	Sequence of Repeating Items where each Item provides reference to a selected set of Image SOP Class/SOP Instance pairs that are defined in the Presentation State Module. Required if a sequence item is present, and if graphic annotations in this Item do not apply to all the images listed in the Presentation State Module.
>>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if sequence item is present.
>>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if sequence item is present.
>>Referenced Frame Number	(0008,1160)	1C	Identifies the frame numbers within the referenced SOP Instance to which this group of annotations applies. Required if sequence item is present and the referenced image is a multi-frame image and the annotations do not apply to all frames.
>>Include 'Image SOP Instance Reference Macro' Table 10-3			
...			

Table C.11.8-1
SOFTCOPY VOI LUT MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Softcopy VOI LUT Sequence	(0028,3110)	1	Defines a sequence of VOI LUTs or Window Centers and Widths and to which images and frames they apply. No more than one VOI LUT Sequence containing a single Item or one pair of Window Center/Width values shall be specified for each image or frame. One or more Items shall be present.
>Referenced Image Sequence	(0008,1140)	1C	Sequence of Repeating Items where each Item provides reference to a selected set of Image SOP Class/SOP Instance pairs that are defined in the Presentation State Module. Required if a sequence item is present, and if the VOI LUT transformation in this Item does not apply to all the images listed in the Presentation State Module.
>>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if sequence item is present.
>>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if sequence item is present.
>>Referenced Frame Number	(0008,1160)	1C	Identifies the frame numbers within the referenced SOP Instance to which this VOI LUT or Window Center and Width applies. Required if sequence item is present and the referenced image is a multi-frame image and the VOI LUT or Window Center and Width does not apply to all frames.
>>Include 'Image SOP Instance Reference Macro' Table 10-3			
...			

**Table C.11.10-1
 PRESENTATION STATE MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
...			
>Referenced Image Sequence	(0008,1140)	1C	Sequence of Repeating Items where each Item provides reference to a selected set of Image SOP Class/SOP Instance pairs that are part of this Study and the Series defined by Series Instance UID (0020,000E). Required if a sequence item is present.
>>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if sequence item is present. Shall be the same for all images referenced by this presentation state.
>>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if sequence item is present.
>>Referenced Frame Number	(0008,1160)	1C	Identifies the frame numbers within the referenced SOP Instance to which the presentation applies. Note: This Attribute may be multi-valued. Required if sequence item is present and the referenced SOP Instance is a multi-frame image and the presentation does not apply to all frames.
<i>>>Include 'Image SOP Instance Reference Macro' Table 10-3</i>			
...			

**Table C.19-1
 RAW DATA MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
...			
Referenced Instance Sequence	(0008,114A)	3	A sequence that provides reference to a set of SOP Class/Instance pairs identifying other Instances significantly related to this Instance. One or more Items may be included in this Sequence.
>Referenced SOP Class UID	(0008,1150)	1	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	1	Uniquely identifies the referenced SOP Instance.
>Referenced Frame Number	(0008,1160)	1C	References one or more image frames of a Multi-frame Image SOP Instance, identifying which frames are significantly related to this Instance. Required if reference is provided to a Multi-frame SOP Instance and not all frames are referenced.
>Include 'Image SOP Instance Reference Macro' Table 10-3			
...			
>Purpose of Reference Code Sequence	(0040,A170)	1	Describes the purpose for which the reference is made. Only a single Item shall be permitted in this sequence. See C.7.6.16.2.5.1.
>>Include 'Code Sequence Macro' Table 8.8-1			No Baseline Context ID is defined.