

DICOM Correction Item

Correction Number CP-785	
Log Summary: Make Modality and VOI LUTs Conditional in BSPS	
Type of Modification Modification	Name of Standard PS 3.3
<p>Rationale for Correction:</p> <p>In the Grayscale and Pseudo-Color Softcopy Presentation State IODs, the Modality LUT Module and the VOI LUT Module are conditional upon the applicability of the LUT to the presentation.</p> <p>However, in the Blending Softcopy Presentation State the Modality LUT becomes mandatory, since there is no conditionality in the invocation of the Modality LUT Macro. This is not proper for those modalities where Modality LUT is not appropriate. Similarly, there is no conditionality on the VOI LUT.</p> <p>BSPS should be constructed equivalently to GSPS for the BSPS underlying image, and to PCSPS for the BSPS superimposed image.</p> <p>Note that conditional invocation of a Macro is already present in the Standard (in the SR Document Content Module).</p>	
Sections of documents affected PS 3.3 Section C.11.14	
Correction Wording:	

**Table C.11.14-1
 PRESENTATION STATE BLENDING MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Blending Sequence	(0070,0402)	1	A Sequence of exactly two Items, one identifying and describing transformations upon a set of underlying grayscale images, and the other identifying and describing transformations upon a set of superimposed grayscale images. See C.11.14.1.1.
>Blending Position	(0070,0405)	1	Whether or not the contents of the Item represent the superimposed or underlying image set. Enumerated Values: SUPERIMPOSED UNDERLYING
>Study Instance UID	(0020,000D)	1	Unique identifier for the Study that contains the images, which may differ from the Study in which the presentation state is contained.
<i>>Include Presentation State Relationship Macro Table C.11.11-1b</i>			
<i>>Include Modality LUT Macro Table C.11-1b if a Modality LUT is to be applied to referenced image(s)</i>			
>Softcopy VOI LUT Sequence	(0028,3110)	1C	Defines a sequence of VOI LUTs or Window Centers and Widths and to which images and frames they apply.

			<p>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.</p> <p>One or more Items shall be present.</p> <p><u>Required if a VOI LUT is to be applied to referenced image(s).</u></p>
>>Referenced Image Sequence	(0008,1140)	1C	<p>Sequence of Items identifying images that are defined in the enclosing Item of the Blending Sequence (0070,0402), to which this VOI LUT or Window Center and Width applies.</p> <p>Required if the VOI LUT transformation in this Item does not apply to all the images in the enclosing Item of the Blending Sequence (0070,0402).</p>
>>>Include Image SOP Instance Reference Macro Table 10-3			
>>Include VOI LUT Macro Table C.11-2b			
...			

Extracts from GSPS IOD (equivalent to BSPS underlying image) and PCSPS IOD (equivalent to BSPS superimposed image) for reference:

**Table A.33.1-1
 Grayscale Softcopy Presentation State IOD MODULES**

IE	Module	Reference	Usage
...			
Presentation State	Presentation State Identification	C.11.10	M
	Presentation State Relationship	C.11.11	M
	...		
	Modality LUT	C.11.1	C - Required if a Modality LUT is to be applied to referenced image(s)
	Softcopy VOI LUT	C.11.8	C - Required if a VOI LUT is to be applied to referenced image(s)
	Softcopy Presentation LUT	C.11.6	M
	SOP Common	C.12.1	M

**Table A.33.3-1
 Pseudo-Color Softcopy Presentation State IOD MODULES**

IE	Module	Reference	Usage
...			
Presentation State	Presentation State Identification	C.11.10	M
	Presentation State Relationship	C.11.11	M
	...		
	Modality LUT	C.11.1	C - Required if a Modality LUT is to be applied to referenced image(s)
	Softcopy VOI LUT	C.11.8	C - Required if a VOI LUT is to be applied to referenced image(s)
	Palette Color LUT	C.7.9	M
	ICC Profile	C.11.15	M
	SOP Common	C.12.1	M