

## DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2012/06/13
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Correction Number	CP-1148
Log Summary:	Add Pathology Protocol Codes
Name of Standard	PS 3.6-2011 PS 3.16-2011
Rationale for Correction:	With the recent adoption of the whole slide imaging SOP Class, WG-26 has been evaluating the pathology imaging workflow. One of the major impediments to workflow interoperability is the lack of device-independent protocol codes for various anatomic pathology imaging procedure steps. Such protocol codes are essential for automated whole slide imaging equipment operation. A set of basic concepts is proposed.
Sections of documents affected	PS 3.6 Annex A PS 3.16 Annex B, C, D
Correction Wording:	
<i>Add new row to PS 3.6 Annex A Table A-3</i>	

**Table A-3  
CONTEXT GROUP UID VALUES**

Context UID	Context Identifier	Context Group Name
...		
<u>1.2.840.10008.6.1.948</u>	<u>8131</u>	<u>Pathology Imaging Protocols</u>
<u>1.2.840.10008.6.1.949</u>	<u>8132</u>	<u>Magnification Selection</u>
<u>1.2.840.10008.6.1.950</u>	<u>8133</u>	<u>Tissue Selection</u>

**CID 8131 Pathology Imaging Protocols**

This Context Group is intended for use in the Scheduled Protocol Code Sequence (0040,0008) and the Performed Protocol Code Sequence (0040,0260). When so used, an Item with value (112703, DCM, "Whole Slide Imaging") may also include a Protocol Context Sequence (0040,0440) using TID 8010 Slide Imaging Parameters.

**Context ID 8131  
Pathology Imaging Protocols  
Type: Extensible Version: 20120605**

<b>Coding Scheme</b>	<b>Code Value</b>	<b>Code Meaning</b>
DCM	112700	Peri-operative Photographic Imaging
DCM	112701	Gross Specimen Imaging
DCM	112702	Slide Microscopy
DCM	112703	Whole Slide Imaging
DCM	112704	WSI 20X RGB
DCM	112705	WSI 40X RGB

**Context ID 8132  
Magnification Selection  
Type: Extensible Version: 20120605**

<b>Coding Scheme</b>	<b>Code Value</b>	<b>Code Meaning</b>
DCM	112715	5X
DCM	112716	10X
DCM	112717	20X
DCM	112718	40X

**Context ID 8133  
Tissue Selection  
Type: Extensible Version: 20120605**

<b>Coding Scheme</b>	<b>Code Value</b>	<b>Code Meaning</b>
DCM	112719	Nominal empty tile suppression
DCM	112720	High threshold empty tile suppression
DCM	112721	No empty tile suppression

Add new protocol context template to PS 3.16 Annex C

**TID x8010 Slide Imaging Parameters**

This template describes protocol parameters for a Slide Imaging Procedure Step. As an extensible template, additional items may be included using other concept names from standard or private coding schemes.

**TID 8010  
Slide Imaging Parameters  
Type: Extensible Order: Significant**

	<b>Value Type</b>	<b>Concept Name</b>	<b>VM</b>	<b>Req Type</b>	<b>Condition</b>	<b>Value Set Constraint</b>
1	CODE	EV(112706, DCM, "Illumination Method")	1-n	U		DCID (8123) Microscopy Illumination Method
2	NUMERIC	EV (112707, DCM, "Number of focal planes")	1	UC	XOR Row 3	Units=EV("{planes}", UCUM, "planes")
3	CODE	EV (112707, DCM, "Number of focal planes")	1	UC	XOR Row 2	DT (112714, DCM, "Multiple planes")
4	NUMERIC	EV (112708, DCM, "Focal plane Z offset")	1-n	U		Units=EV(um, UCUM, "um")
5	CODE	EV (112709, DCM, "Magnification selection")	1	U		DCID (8132) Magnification Selection
6	NUMERIC	EV(112710, DCM, "Illumination wavelength")	1-n	U		Units=EV(nm, UCUM, "nm")
7	CODE	EV(112711, DCM, "Illumination spectral band")	1-n	U		DCID (8122) Microscopy Illuminator and Sensor Color
8	CODE	EV(112712, DCM, "Optical filter type")	1-n	U		DCID (8124) Microscopy Filter
9	CODE	EV(112713, DCM, "Tissue selection method")	1	U		DCID (8133) Tissue Selection

Add definitions to PS 3.16 Annex D

112700	Peri-operative Photographic Imaging	Procedure step protocol for photographic imaging of surgical procedures, including photography of specimens collected	
112701	Gross Specimen Imaging	Procedure step protocol for imaging gross specimens, typically with a photographic camera (modality XC), and planning further dissection	
112702	Slide Microscopy	Procedure step protocol for imaging slide specimens	

112703	Whole Slide Imaging	Procedure step protocol for imaging slide specimens using a whole slide scanner.	
112704	WSI 20X RGB	Procedure step protocol for imaging slide specimens using a whole slide scanner with a 20X nominal objective lens, in full color, with a single imaging focal plane across the image	
112705	WSI 40X RGB	Procedure step protocol for imaging slide specimens using a whole slide scanner with a 40X nominal objective lens, in full color, with a single imaging focal plane across the image	
112706	Illumination Method	Technique of illuminating specimen	
112707	Number of focal planes	Number of focal planes for a microscopy image acquisition	
112708	Focal plane Z offset	Nominal distance above a reference plane (typically a slide glass substrate top surface) of the focal plane	
112709	Magnification selection	Microscope magnification based on nominal objective lens power	
112710	Illumination wavelength	Nominal center wavelength for an imaging spectral band	
112711	Illumination spectral band	Name (coded) for an imaging spectral band	
112712	Optical filter type	Type of filter inserted into the optical imaging path	
112713	Tissue selection method	Technique for identifying tissue to be imaged versus area of slide not to be imaged	
112714	Multiple planes	Imaging performed at multiple imaging (focal) planes	
112715	5X	Nominal 5 power objective lens, resulting in a digital image at approximately 2 um/pixel spacing	
112716	10X	Nominal 10 power objective lens, resulting in a digital image at approximately 1 um/pixel spacing	
112717	20X	Nominal 20 power microscope objective lens, resulting in a digital image at approximately 0.5 um/pixel spacing	
112718	40X	Nominal 40 power microscope objective lens, with a combined condenser and objective lens numerical aperture of approximately 1.3, resulting in a digital image at approximately 0.25 um/pixel spacing	
112719	Nominal empty tile suppression	Equipment-specific nominal or default method for identifying tiles without tissue imaged for suppression from inclusion in image object	
112720	High threshold empty tile suppression	Equipment-specific high threshold method for identifying tiles without tissue imaged for suppression from inclusion in image object	
112721	No empty tile suppression	Tiles without tissue imaged are not	

		suppressed from inclusion in image object	
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