

STATUS	Assigned
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Correction Number CP-1388
Log Summary: Add Real World Value Map Reference to Measurements
Name of Standard PS3.16 2013
Rationale for Correction: Measurements on regions of interest may be made using separate Real World Value Maps applied to stored pixel values in images, and it is useful to record a reference to which instance was used. These references may either be shared by an entire measurement group, or associated with an individual measurement.
Correction Wording:

Amend DICOM PS3.16 - Content Mapping Resource - Structured Reporting Templates to update the following templates to include an optional reference to RWV Map instances:

TID 300 Measurement

...

Table TID 300. Measurement

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			NUM	\$Measurement	1	M		UNITS = \$Units

17	>	HAS OBS CONTEXT	INCLUDE	DTID 4108 "Tracking Identifier"	1	U		
18	>	<u>INFERRED FROM</u>	<u>COMPOSITE</u>	<u>EV (dd3001, DCM, "Real World Value Map used for measurement")</u>	<u>1</u>	<u>U</u>		<u>SOP Class UID shall be Real World Value Mapping Storage ("1.2.840.10008.5.1.4.1.1.67")</u>

Content Item Descriptions

...	...
Row 18	<u>The reference to an RWV in Row 18 allows measurements to be made in units that differ from the stored pixel values in the images referenced in Row 13. E.g., for a PET SUVbw measurement, the mapping from activity/concentration units in the referenced image that was used (and which may be reused for measurements in the future) may be encoded in a referenced RWV instance. This reference overrides any reference in an including template (such as for a Measurement Group).</u>

TID 1410 Planar ROI Measurements

...

Type: Extensible
Order: Significant

Table TID 1410. Planar ROI Measurements

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV (125007, DCM, "Measurement Group")	1	M		

8	>	CONTAINS	IMAGE	EV (121200, DCM, "Illustration of ROI")	1	U		
9	>	<u>CONTAINS</u>	<u>COMPOSITE</u>	<u>EV (dd3001, DCM, "Real World Value Map used for measurement")</u>	<u>1</u>	<u>U</u>		<u>SOP Class UID shall be Real World Value Mapping Storage ("1.2.840.10008.5.1.4.1.1.67")</u>

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
910	>	CONTAINS	INCLUDE	DTID 1419 "ROI Measurements"	1-n	M		\$Measurement = \$Measurement \$Units = \$Units \$ModType = \$ModType \$ModValue = \$ModValue \$Method = \$Method \$Derivation = \$Derivation \$TargetSite = \$TargetSite \$TargetSiteMod = \$TargetSiteMod \$Equation = \$Equation \$RefAuthority = \$RefAuthority \$RangeAuthority = \$RangeAuthority \$DerivationParameter = \$DerivationParameter \$DerivationParameterUnits = \$DerivationParameterUnits

Content Item Descriptions

...	...
Row 9	The reference to an RWV in Row 9 allows measurements to be made in units that differ from the stored pixel values in the images referenced elsewhere in the template. E.g., for a PET SUVbw measurement, the mapping from activity/concentration units in the referenced image that was used (and which may be reused for measurements in the future) may be encoded in a referenced RWV instance. This reference applies to any measurements in included templates, unless overridden).

TID 1411 Volumetric ROI Measurements

...

Type: Extensible
 Order: Significant

Table TID 1411. Volumetric ROI Measurements

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV (125007, DCM, "Measurement Group")	1	M		
...
12	>	CONTAINS	IMAGE	EV (121200, DCM, "Illustration of ROI")	1-n	U		
13	>	CONTAINS	COMPOSITE	EV (dd3001, DCM, "Real World Value Map used for measurement")	1	U		SOP Class UID shall be Real World Value Mapping Storage ("1.2.840.10008.5.1.4.1.1.67")

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
4314	>	CONTAINS	INCLUDE	DTID 1419 "ROI Measurements"	1-n	M		\$Measurement = \$Measurement \$Units = \$Units \$ModType = \$ModType \$ModValue = \$ModValue \$Method = \$Method \$Derivation = \$Derivation \$TargetSite = \$TargetSite \$TargetSiteMod = \$TargetSiteMod \$Equation = \$Equation \$RefAuthority = \$RefAuthority \$RangeAuthority = \$RangeAuthority \$DerivationParameter = \$DerivationParameter \$DerivationParameterUnits = \$DerivationParameterUnits

Content Item Descriptions

...	...
Row 13	The reference to an RWV in Row 13 allows measurements to be made in units that differ from the stored pixel values in the images referenced elsewhere in the template. E.g., for a PET SUVbw measurement, the mapping from activity/concentration units in the referenced image that was used (and which may be reused for measurements in the future) may be encoded in a referenced RWV instance. This reference applies to any measurements in included templates, unless overridden).

TID 1419 ROI Measurements

...

Table TID 1419. ROI Measurements

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1e			NUM	\$Measurement	1-n	M		UNITS = \$Units

14	>	HAS CONCEPT MOD	TEXT	(121050, DCM, "Equivalent Meaning of Concept Name")	1	U		
15	>	<u>INFERRED FROM</u>	<u>COMPOSITE</u>	<u>EV (dd3001, DCM, "Real World Value Map used for measurement")</u>	1	<u>U</u>		<u>SOP Class UID shall be Real World Value Mapping Storage ("1.2.840.10008.5.1.4.1.1.67")</u>

Content Item Descriptions

...	...
Row 15	<u>The reference to an RWV in Row 18 allows measurements to be made in units that differ from the stored pixel values in the images referenced in the parent template. E.g., for a PET SUVbw measurement, the mapping from activity/concentration units in the referenced image that was used (and which may be reused for measurements in the future) may be encoded in a referenced RWV instance. This reference overrides any reference in an including template (such as for a Measurement Group).</u>

Amend DICOM PS3.16 - Content Mapping Resource - Controlled Terminology Definitions to add the following new concepts:

Table D-1. DICOM Controlled Terminology Definitions

Code Value	Code Meaning	Definition	Notes
...
dd3001	Real World Value Map used for measurement	A reference to the Real World Value Map applied to the stored image pixel values before their use for a measurement	
...