DICOM Correction Proposal Form

Tracking Information - Administration Use Only	
Correction Proposal Number	CP-274
STATUS	
Date of Last Update	6/14/2001
Person Assigned	Harry Solomon
Submitter Name	Harry Solomon
Submission date	6/14/2001

Correction Number CP-274	
Log Summary: Add definition for Template parameters	
Type of Modification Clarification	Name of Standard PS 3.16
Rationale for Correction The current definition for Template specification makes it difficult to define a Template for structure only, rather than for content. The addition of Template parameters makes such definitions straightforward.	
Sections of documents affected PS 3.16 Section 6	
Correction Wording:	

6.1 Template Table field definition

…

A Template that is included by another Template (see Section 6.2.3) may include parameters that are replaced by values defined in the invoking Template. Such parameters are indicated by a name beginning with the character "$". Parameters may be used to specify coded concepts, Context Groups, or Templates in the Concept Name or Value Set constraint fields of a Template.

6.1.1

…

6.2.3 Inclusion of Templates

A Template may specify another Template to be included by specifying “INCLUDE” in the Value Type field and the identifier of the included Template in the Concept Name field. All of the rows of the specified Template are in included in the invoking Template, effectively substituting the specified template for the row where the inclusion is invoked. Whether or not the inclusion is user optional, mandatory or conditional is specified in the Requirement and Condition fields. The number of times the included Template may be repeated is specified in the VM field. ~~The Value Set constraint field is not used.~~

If the included Template or any of its recursively included templates specifies parameters, the invoking Template may specify the value of the parameter by name in the Value Set Constraint field. The parameter in the included Template shall be replaced by the specified parameter value.

Notes: 1. The specification of a parameter value is valid for all subsidiary recursively included templates; it does not need to be explicitly respecified in templates intermediate between the specifying and the target templates.

2. The invoking template is not required to specify all parameters of included templates. If not specified, the value set (term or context group) for that parameter is unconstrained.

Example (not part of CP): note that these are very artificial

TID Tx701 Atrial Pressure Waveform Measurement Group

TID Tx701
Atrial Pressure Waveform Measurement Group

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			INCLUDE	DTID Tx705 Pressure Waveform Measurement Group	1-n	U		$VolumeMeasurements = EV("Atrial Volume")

TID Tx702 Ventricular Pressure Waveform Measurement Group

TID Tx702
Ventricular Pressure Waveform Measurement Group

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			INCLUDE	DTID Tx705 Pressure Waveform Measurement Group	1-n	U		$VolumeMeasurements = EV("Ventricular Volume")

TID Tx705 Pressure Waveform Measurement Group

Input Parameters:

$VolumeMeasurements - Coded Term or Context Group

Note that row 6 invokes the Tx802 $MeasurementName parameter with a $VolumeMeasurements parameter used in the invocation of this Template by the prior two templates.

TID Tx705
Pressure Waveform Measurement Group

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Con
								$MeasurementName
1			INCLUDE	DTID Tx800 Waveform-based Measurement	1-n	U		DCID Cx605a Pressure Measurements
2			INCLUDE	DTID Tx800 Waveform-based Measurement	1-n	U		DCID Cx605b Velocity Measurements
3			INCLUDE	DTID Tx800 Waveform-based Measurement	1-n	U		DCID Cx605c Time Measurements
4			INCLUDE	DTID Tx800 Waveform-based Measurement	1-n	U		EV (DCM Vx605003 "Cardiac Output")
5			INCLUDE	DTID Tx801 Waveform-based Qualitative Measurement	1-n	U		EV (DCM Vx605004 "Shunt Direction")
6			INCLUDE	DTID Tx802 Image-based Measurement	1-n	U		$VolumeMeasurements

Questions - Since the next three templates are basically the same structure, should we parameterize Value Types to be able to consolidate them into a single template? What would be the impact on Value Set Constrains, which have different forms for different Value Types? Would we need to introduce conditions based on input parameter values in fields other than Condition, and would that overly complicate the definition of template parameters?

TID Tx800 Waveform-based Measurement

Input Parameters:

$MeasurementName - Coded Term or Context Group
$MeasurementUnits - Coded Term or Context Group

TID Tx800
Waveform-based Measurement

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			NUM	$MeasurementName	1	M		Units = $MeasurementUnits
2	>	HAS PROPERTIES	INCLUDE	DTID Tx0560 Normality and Significance	1	U		
3	>	INFERRED FROM	TCOORD	DT (Vx0080, DCM, "Source of measurement")	1	U	XOR with Row 5	
4	>>	SELECTED FROM	WAVEFORM		1	M		
5	>	INFERRED FROM	WAVEFORM	DT (Vx0080, DCM, "Source of measurement")	1	U	XOR with Row 3	

TID Tx801 Waveform-based Qualitative Measurement

Input Parameters:

$MeasurementName - Coded Term or Context Group
$MeasurementUnits - Coded Term or Context Group

TID Tx801
Waveform-based Qualitative Measurement

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CODE	$MeasurementName	1	M		$MeasurementUnits
2	>	HAS PROPERTIES	INCLUDE	DTID Tx0560 Normality and Significance	1	U		
3	>	INFERRED FROM	TCOORD	DT (Vx0080, DCM, "Source of measurement")	1	U	XOR with Row 5	
4	>>	SELECTED FROM	WAVEFORM		1	M		
5	>	INFERRED FROM	WAVEFORM	DT (Vx0080, DCM, "Source of measurement")	1	U	XOR with Row 3	

TID Tx802 Image-based Measurement

Input Parameters:

$MeasurementName - Coded Term or Context Group
$MeasurementUnits - Coded Term or Context Group

TID x802
Image-based Measurement

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			NUM	$MeasurementName	1	M		Units = $MeasurementUnits

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
2	>	HAS PROPERTIES	INCLUDE	DTID Tx0560 Normality and Significance	1	U		
3	>	INFERRED FROM	SCOORD	DT (Vx0080, DCM, "Source of measurement")	1	U	XOR with Row 5	
	>>	SELECTED FROM	IMAGE		1	U		
5	>	INFERRED FROM	IMAGE	DT (Vx0080, DCM, "Source of measurement")	1	U	XOR with Row 3	

Note that in passing a TID as a parameter, the Input Parameters of that Template are included by implication (and obviously not explicitly) in the Input Parameters list for the current template

TID Tx1800 Generic Measurement Group

This Template is entirely structure, with all content apssed as parameters by an invoking template.
Input Parameters:

$MeasGroupType - Coded Term or Context Group
$MeasGroupValue - Coded Term or Context Group
$ConceptModType - Coded Term or Context Group
$ConceptModValue - Coded Term or Context Group
$MeasAcqContext - Template
$MeasGroupProps - Template

TID Tx1800
Generic Measurement Group

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CODE	$MeasGroupType	1	M		$MeasGroupValue
2	>	HAS CONCEPT MOD	CODE	$ConceptModType	1	U		$ConceptModValue
3	>	HAS ACQ CONTEXT	INCLUDE	$MeasAcqContext	1-n	U		
2	>	HAS PROPERTIES	INCLUDE	$MeasGroupProps	1-n	U		

TID Tx2701 Funky 2-way Report

The Funky 2-way Report presents the same set of measurements organized in two ways - by protocol step, or by anatomy. In each case, the other dimension is encoded as Acquisition Context on the group of measurements.

TID Tx2701
Funky 2-way Report

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV ("Funky 2-way Report")				
2	>	HAS OBS CONTEXT	INCLUDE	DTID 1001				
3	>	CONTAINS	CONTAINER	EV("Protocol Measurements")				
4	>>	CONTAINS	INCLUDE	DTID Tx1800 Generic Measurement Group	1	M		$MeasGroupType = EV("Protocol Step") $MeasGroupValue = DCID yyy Protocol Step Names $ConceptModType = no BCID $ConceptModType = no BCID $MeasAcqContext = DTID Tx5121 Patient State & Aanatomic Location $MeasGroupProps = DTID Tx750 Measurements
3	>	CONTAINS	CONTAINER	EV("Anatomic Measurements")				

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
4	>>	CONTAINS	INCLUDE	DTID Tx1800 Generic Measurement Group	1	M		$MeasGroupType = EV("Anatomic Location") $MeasGroupValue = DCID zzz Anatomic Locations $ConceptModType = EV("Anatomic Location Modifier") $ConceptModValue = DCID zzz1 Anatomic Location Modifiers $MeasAcqContext = DTID Tx5122 Patient State & Protocol $MeasGroupProps = DTID Tx750 Measurements

TID Tx5120 Patient State

TID Tx5120
Patient State

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			INCLUDE	DTID Tx5100 Patient Medication State	1	U		
2			INCLUDE	DTID Tx5101 Patient Physiological State	1	U		
3			INCLUDE	DTID Tx5102 Patient Cognitive State	1	U		

TID Tx5121 Patient State & Anatomic Location

TID Tx5121
Patient State & Anatomic Location

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			INCLUDE	DTID Tx5120 Patient State	1	M		
2			CODE	EV("Anatomic Location")	1	M		DCID zzz Anatomic Locations
3	>	HAS CONCEPT MOD	CODE	EV("Anatomic Location Modifier")	1	U		DCID zzz1 Anatomic Location Modifiers

TID Tx5122 Patient State & Protocol

TID Tx5122
Patient State & Protocol

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			INCLUDE	DTID Tx5120 Patient State	1	M		
2			CODE	EV("Protocol Step")	1	M		DCID yyy Protocol Step Names