

DICOM Correction Proposal

STATUS	Assigned
Date of Last Update	2016/11/01
Person Assigned	Ulrich Busch (ulrich.busch@varian.com)
Submitter Name	Ulrich Busch (ulrich.busch@varian.com)
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Correction Number	CP1664
Log Summary:	Add Progress Parameters in UPS Progress Module
Name of Standard	PS 3.3 2016c
Rationale for Correction:	<p>Applying Unified Procedure Step Service for specific use cases as e.g. executing a Radiotherapy Session requires communication of the progress of executing a procedure step to various subscribers. E.g. a system monitoring the position of the patient while therapeutic radiation is being delivered needs to have information on which beam is currently treated.</p> <p>To facilitate communication about the specific information on the execution of a procedure step, the Unified Procedure Step Progress Information Module is extended to support a sequence of parameters, which can convey this information. The representation of those Parameters uses the same format as used in the Unified Procedure Step Scheduled Procedure Information Module and the Unified Procedure Step Performed Procedure Information Module.</p> <p>Additionally the CP corrects the Modifier Attribute descriptions for Modifiers used in Content Item Modifier Sequence (0040,0441) in the Unified Procedure Step Scheduled Procedure Information Module and Unified Procedure Step Performed Procedure Information Module.</p>
Correction Wording:	

In PS 3.3, modify section C.30.1 Unified Procedure Step Progress Information Module as follows.

C.30.1 Unified Procedure Step Progress Information Module

Table C.30.1-1 specifies the Attributes that describe the progress of a Unified Procedure Step (UPS).

Table C.30.1-1. Unified Procedure Step Progress Information Module Attributes

Attribute Name	Tag	Attribute Description
Procedure Step State	(0074,1000)	State of the Procedure Step. Enumerated Values: SCHEDULED IN PROGRESS CANCELED COMPLETED See PS3.4 for details on Unified Procedure Step states.
Progress Information Sequence	(0074,1002)	Information about work progress for the Procedure Step. Zero or one Item shall be included in this Sequence.
>Procedure Step Progress	(0074,1004)	A numerical indicator of progress expressed as percentage complete. Note This is primarily for status rendering (e.g., progress bar). The percentage is not necessarily an accurate indication of total time.
>Procedure Step Progress Description	(0074,1006)	A textual description of progress. Note For example, it might contain "Annealing complete".
<u>>Procedure Step Progress Parameters Sequence</u>	<u>(0074,xxxx)</u>	<u>Additional procedure-specific progress information provided by the performing device while the current Procedure Step is being executed.</u> <u>Zero or more Items shall be included in this Sequence</u>
<u>>>Include Table 10-2 "Content Item Macro Attributes Description"</u>		<u>No Baseline CIDs are defined for Concept Name Code Sequence or Concept Code Sequence.</u>
<u>>>Content Item Modifier Sequence</u>	<u>(0040,0441)</u>	<u>Sequence that specifies modifiers for a Procedure Step Progress Parameter. One or more Items are permitted in this Sequence.</u>
<u>>>>Include Table 10-2 "Content Item Macro Attributes Description"</u>		<u>No Baseline CIDs are defined for Concept Name Code Sequence or Concept Code Sequence.</u>
>Procedure Step Communications URI Sequence	(0074,1008)	Contact Information to communicate with performers of the Procedure Step. Zero or more Items shall be included in this Sequence.
>>Contact URI	(0074,100A)	URI to communicate with performer of the procedure in progress. Any URI (telephone number, URL, etc.) is permitted. Note The VR of this attribute has changed from UT to UR.

>>Contact Display Name	(0074,100c)	Name of the person, department or organization to contact for more information about the performance of the Procedure Step.
>Procedure Step Cancellation DateTime	(0040,4052)	Date and Time at which the procedure step was discontinued.
>Reason For Cancellation	(0074,1238)	A textual description of the reason a procedure step was discontinued.
>Procedure Step Discontinuation Reason Code Sequence	(0074,100e)	Coded Reason(s) for Discontinuing the Procedure Step. Zero or more Items shall be included in this Sequence.
>>Include Table 8.8-1 "Code Sequence Macro Attributes"		Defined CID 9300 "Procedure Discontinuation Reasons".

C.30.2 Unified Procedure Step Scheduled Procedure Information Module

Table C.30.2-1 specifies the Attributes that describe the Unified Procedure Step (UPS) to be performed. The UPS may or may not be scheduled for a specific time or device, or may simply represent a piece of work that is intended to be performed.

Table C.30.2-1. Unified Procedure Step Scheduled Procedure Information Module Attributes

Attribute Name	Tag	Attribute Description
Scheduled Procedure Step Priority	(0074,1200)	Priority of the scheduled Procedure Step Enumerated Values: HIGH used to indicate an urgent or emergent work item, equivalent to a STAT request. MEDIUM used to indicate a work item that has a priority less than HIGH and higher than LOW. It can be used to further stratify work items. LOW used to indicate a routine or non-urgent work item.
Scheduled Procedure Step Modification Date and Time	(0040,4010)	Date and time when the Scheduled Procedure Information was last modified or first created (whichever is most recent). Note This attribute should be automatically updated by the worklist management system whenever any modification is made to Unified Procedure Step Scheduled Procedure Information Module Attributes of a Unified Procedure Step.
Worklist Label	(0074,1202)	A label identifying the worklist to which the Procedure Step instance belongs.
...		
Scheduled Processing Parameters Sequence	(0074,1210)	Processing parameters to be used by the performing system when carrying out the Procedure Step. Zero or more Items shall be included in this Sequence.
>Include Table 10-2 "Content Item Macro Attributes Description"		

Attribute Name	Tag	Attribute Description
>Content Item Modifier Sequence	(0040,0441)	Sequence that specifies modifiers for a Protocol Context Scheduled Processing Parameter Content Item. One or more Items are permitted in this Sequence.
>>Include Table 10-2 "Content Item Macro Attributes Description"		

C.30.3 Unified Procedure Step Performed Procedure Information Module

Table C.30.3-1 specifies the Attributes that describe the performance and results of a Unified Procedure Step (UPS).

Table C.30.3-1. Unified Procedure Step Performed Procedure Information Module Attributes

Attribute Name	Tag	Attribute Description
Unified Procedure Step Performed Procedure Sequence	(0074,1216)	Details of the Procedure Step as performed. Zero or one Item shall be included in this Sequence.
>Actual Human Performers Sequence	(0040,4035)	Human performers that are/were actually involved or responsible for performing the Procedure Step. Zero or more Items shall be included in this Sequence. Note Initially this list will be empty. Items may be added to the list at or after the status transition of the Procedure Step State (0074,1000) to "IN PROGRESS"
>>Human Performer Code Sequence	(0040,4009)	Human performer that is involved or responsible for performing the Procedure Step. Only a single Item shall be included in this Sequence.
>>>Include Table 8.8-1 "Code Sequence Macro Attributes"		No Baseline CID is defined.
>>Human Performer's Name	(0040,4037)	Name of the human performer.
>>Human Performer's Organization	(0040,4036)	Organization to which the human performer is accountable for the activities in the Procedure Step.
...		
>Performed Processing Parameters Sequence	(0074,1212)	Parameters used to perform the procedure. Zero or more items shall be present in this Sequence
>>Include Table 10-2 "Content Item Macro Attributes Description"		No Baseline CIDs are defined for Concept Name Code Sequence or Concept Code Sequence.
>>Content Item Modifier Sequence	(0040,0441)	Sequence that specifies modifiers for a Protocol Context Performed Processing Parameter Content Item. One or more Items are permitted in this Sequence.
>>>Include Table 10-2 "Content Item Macro Attributes Description"		No Baseline CIDs are defined for Concept Name Code Sequence or Concept Code Sequence.
>Performed Procedure Step End DateTime	(0040,4051)	Date and Time at which the Procedure Step ended.

In PS 3.4, modify section CC.2.4.1 Event Report Information.

CC.2.4.1 Event Report Information

DICOM AEs that claim conformance to the UPS Event SOP Class as an SCU and/or an SCP shall support the Event Type IDs and Event Report Attributes as specified in Table CC.2.4-1.

Table CC.2.4-1. Report a Change in UPS Status - Event Report Information

Event Type Name	Event Type ID	Attribute Name	Tag	Req. Type SCU/SCP
...	...			
UPS Progress Report	3	Progress Information Sequence	(0074,1002)	-/1
		>Procedure Step Progress	(0074,1004)	-/3
		>Procedure Step Progress Description	(0074,1006)	-/3
		>Procedure Step Communications URI Sequence	(0074,1008)	-/3
		>>Contact URI	(0074,100a)	-/1
		>>Contact Display Name	(0074,100c)	-/3
		<u>>Procedure Step Progress Parameters Sequence</u>	<u>(0074,xxxx)</u>	<u>-/3</u>
...	...			

In PS 3.4, modify section CC.2.5.1.3 UPS Attribute Service Requirements.

CC.2.5.1.3 UPS Attribute Service Requirements

This table combines the Attribute requirements for multiple DIMSE services (N-CREATE, N-SET, N-GET, C-FIND) to facilitate consistency between the requirements.

See PS3.4 for the meaning of the requirement codes used in the N-CREATE, N-SET, N-GET and Return Key columns in the following table.

See Section C.1.2 for the meaning of the requirement codes used in the Match Key column in the following table.

See Table CC.2.5-1 for the meaning of the requirement codes used in the Final State column of the following table.

Table CC.2.5-3. UPS SOP Class N-CREATE/N-SET/N-GET/C-FIND Attributes

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Match Key Type	Return Key Type	Remark/Matching Type
Transaction UID	(0008,1195)	2/2 Shall be empty	(see CC.2.6.3)	O	Not allowed	-	-	Cannot be queried.
SOP Common Module								
Specific Character Set	(0008,0005)	1C/1C	1C/1C	RC	3/1	-	1C	Required if extended or replacement character set is used

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Match Key Type	Return Key Type	Remark/Matching Type
...								
Unified Procedure Step Progress Information Module								
Procedure Step State	(0074,1000)	1/1 Shall be created with a value of "SCHEDULED"	Not Allowed. Use N-ACTION	R	3/1	R	1	Procedure Step State shall be retrieved with Single Value Matching
Progress Information Sequence	(0074,1002)	2/2 Shall be empty	3/2	X	3/2		2	
>Procedure Step Progress	(0074,1004)	Not Allowed	3/1	O	-/1	-	-	
>Procedure Step Progress Description	(0074,1006)	Not Allowed	3/1	O	-/1	-	-	
>Procedure Step Progress Parameters Sequence	(0074,xxxx)	Not Allowed	3/3	O	-/3			
>>Include Table 10-2 "Content Item Macro Attributes Description"								
>>Content Item Modifier Sequence	(0040,0441)	Not Allowed	3/3	O	-/3			
>>>Include Table 10-2 "Content Item Macro Attributes Description"								
>Procedure Step Communications URI Sequence	(0074,1008)	Not Allowed	3/1	O	-/1	-	-	
>>Contact URI	(0074,100a)	Not Allowed	1/1	O	-/1	-	-	
>>Contact Display Name	(0074,100c)	Not Allowed	3/1	O	-/1	-	-	
>Procedure Step Cancellation DateTime	(0040,4052)	Not Allowed	3/1	X	-/1	-	-	If changing the UPS State (0074,1000) to CANCELED and this Attribute has no value, the SCP shall fill it with the current datetime.
>Reason For Cancellation	(0074,1238)	Not Allowed	3/1	O	-/1	-	-	
>Procedure Step Discontinuatio	(0074,100e)	Not Allowed	3/1	X	-/1			

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Match Key Type	Return Key Type	Remark/Matching Type
n Reason Code Sequence								
>>Include Table CC.2.5-2a "UPS Code Sequence Macro"								
Unified Procedure Step Performed Procedure Information Module								