

DICOM Correction Proposal

STATUS	Assigned
Date of Last Update	2025/01/30
Person Assigned	Christof Schadt
Submitter Name	David Wikler <david.wikler@iba-group.com>, Jörg Riesmeier <dicom@jriesmeier.com>
Submission Date	2024/03/26

Correction Number	CP-2505
Log Summary:	Unified Procedure Step and Machine Verification Services Clarifications
Name of Standard	PS3.4
Rationale for Correction:	<p>In RT Machine Verification SOP Class N-GET Attribute List "<i>All other Attributes</i>" are included where in the N-SET Attribute List, only "<i>All other Attributes of the RT General Machine Verification Module</i>" or "<i>All other Attributes of the RT Ion Machine Verification Module</i>" are included.</p> <p>Additionally, DICOM Working Group members noticed some inconsistencies, definition gaps and terminology uncertainties and one error in the text of the Unified Procedure Step in Section CC.2.5. This CP fixes the above-mentioned issues.</p>
Correction Wording:	

For reference and adding comments PS3.4 Section CC.2.3.1, no changes made

CC.2.3.1 Action Information

DICOM Application Entities that claim conformance to the UPS Watch SOP Class as an SCU and/or an SCP shall support the Action Types and Action Information as specified in Table CC.2.3-1.

Table CC.2.3-1. Subscribe/Unsubscribe to Receive UPS Event Reports - Action Information

Action Type Name	Action Type ID	Attribute Name	Tag	Requirement Type SCU/SCP
Subscribe to Receive UPS Event Reports	3	Receiving AE	(0074,1234)	1/1
		Deletion Lock	(0074,1230)	1/1
		Matching Keys (see Section CC.2.3.3.1)		1/1
Unsubscribe from Receiving UPS Event Reports	4	Receiving AE	(0074,1234)	1/1
Suspend Global Subscription	5	Receiving AE	(0074,1234)	1/1

Each AE may be in one of three UPS Subscription States for each existing UPS Instance: Not Subscribed, Subscribed with Deletion Lock, or Subscribed w/o Deletion Lock. The UPS Subscription State determines whether N-EVENT-REPORTs relating to a UPS Instance will be sent to the AE.

Each AE may also be in one of three Global Subscription States for a given SCP: No Global Subscription, Globally Subscribed with Deletion Lock, Globally Subscribed w/o Deletion Lock. The Global Subscription State mainly determines the initial UPS Subscription State for an AE and new UPS Instances created by the SCP. Changes to the Global Subscription State can also change the UPS Subscription State for existing UPS Instances as described in [Table CC.2.3-2](#).

The three Subscription actions in [Table CC.2.3-1](#) are used to manage the UPS Subscription State and Global Subscription State of an AE.

[Table CC.2.3-2](#) describes the UPS Subscription State transitions of an AE for a given UPS Instance. Each row in the table defines what should happen in response to a Subscription Action, or a UPS creation event, given the initial state. The table also shows when an initial event message should be sent to the AE describing the "Current UPS State".

Note

In general, instance specific instructions take precedence over global instructions. The exception is the Unsubscribe Globally instruction, which removes all subscriptions, global and specific. To simply stop globally subscribing to new instances without removing specific subscriptions, use the Suspend Global Subscription message.

Most actions affect only the UPS Subscription State of a single UPS Instance. However, Global actions potentially affect all existing UPS Instances managed by the SCP and this is indicated in the following table by "All". For example, in the "AE Subscribes Globally with Lock" row, the content of the "Not Subscribed" cell means that in addition to setting the Global Subscription State for the AE to "Global Subscription with Lock", all existing UPS Instances whose UPS Subscription State for the Receiving AE is "Not Subscribed" will each have their UPS Subscription State changed to "Subscribed with Lock" and an event will be sent to the Receiving AE for each Instance.

Table CC.2.3-2. UPS Subscription State Transition Table

Events	States (for a specific UPS and AE)			
	<i>null</i>	Not Subscribed	Subscribed with Lock	Subscribed w/o Lock
A UPS is Created when the AE Global Subscription State is "No Global Subscription"	Go to Not Subscribed	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
A UPS is Created when the AE Global Subscription State is "Global Subscription with Lock"	Go to Subscribed with Lock; Send initial event	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
A UPS is Created when the AE Global Subscription State is "Global Subscription w/o Lock"	Go to Subscribed w/o Lock; Send initial event	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
AE Subscribes Globally with Lock	<i>N/A</i>	<i>AE Global State is now "Global Sub. with Lock";</i> All Go to Subscribed with Lock; All Send initial event	<i>AE Global State is now "Global Sub. with Lock";</i> No UPS state change;	<i>AE Global State is now "Global Sub. with Lock";</i> No UPS state change;
AE Subscribes Globally w/o Lock	<i>N/A</i>	<i>AE Global State is now "Global Sub. w/o Lock";</i> All Go to Subscribed w/o Lock;	<i>AE Global State is now "Global Sub. w/o Lock";</i> <i>No UPS state change;</i>	<i>AE Global State is now "Global Sub. w/o Lock";</i> No UPS state change;
AE Subscribes to Specific UPS with Lock	<i>N/A</i>	Go to Subscribed with Lock; Send initial event	No UPS state change; Send initial event	Go to Subscribed with Lock; Send initial event

	States (for a specific UPS and AE)			
AE Subscribes to Specific UPS without Lock	N/A	Go to Subscribed w/o Lock; Send initial event	Go to Subscribed w/o Lock; Send initial event	No UPS state change; Send initial event
AE Unsubscribes from Specific UPS	N/A	No UPS state change	Go to Not Subscribed	Go to Not Subscribed
AE Unsubscribes Globally	N/A	AE Global State is now "No Global Subscription"; No UPS state change;	AE Global State is now "No Global Subscription"; All Go to Not Subscribed;	AE Global State is now "No Global Subscription"; All Go to Not Subscribed;
AE Suspends Global Subscription	N/A	AE Global State is now "No Global Subscription"; No UPS state change;	AE Global State is now "No Global Subscription"; No UPS state change;	AE Global State is now "No Global Subscription"; No UPS state change;

See Section GGG.1 "Introduction" in PS3.17 Reliable Watchers and Deletion Locks for further discussion of deletion locks.

In PS3.4 CC.2.4.3 Service Class Provider Behavior, perform the following modifications.

CC.2.4.3 Service Class Provider Behavior

[...]

When SCP Status (0074,1242) is RESTARTED, the ~~v~~Value of Subscription List Status (0074,1244) shall be WARM START if the SCP preserved the Subscription List to the best of its knowledge, and COLD START ~~ED~~ if the SCP has not preserved the Subscription List.

When SCP Status (0074,1242) is RESTARTED, the ~~v~~Value of Unified Procedure Step List Status (0074,1246) shall be WARM START if the SCP preserved the UPS List to the best of its knowledge, and COLD START if the SCP has not preserved the UPS List.

If the SCP is unable to successfully complete an N-EVENT-REPORT to any given SCU, the SCP has no obligation to queue or retry, and it should not imply any effect on the subscription list or deletion locks.

In PS3.4 Table DD.3.2.2-1. N-GET Attribute List- RT Conventional Machine Verification SOP Class and RT Ion Machine Verification SOP Class, perform the following modifications.

Attribute Name	Tag	Usage SCU/SCP
Referenced RT Plan Sequence	(300C,0002)	-/1
...		
<u>All other Attributes of the RT General Machine Verification Module</u>	=	3/2
<u>All other Attributes of the RT Conventional Machine Verification Module if RT Conventional Machine Verification SOP Class is applicable</u>	=	<u>3/2</u>
<u>All other Attributes of the RT Ion Machine Verification Module if RT</u>	=	<u>3/2</u>

Attribute Name	Tag	Usage SCU/SCP
<u><i>Ion Machine Verification SOP Class is applicable</i></u>		

Change PS3.4 Section CC.2.5

CC.2.5 Create a Unified Procedure Step (N-CREATE)

This operation allows an SCU to instruct an SCP to create a Unified Procedure Step. This operation shall be invoked by the SCU through the DIMSE N-CREATE Service.

CC.2.5.1 Unified Procedure Step Attribute Specification

An Application Entity that claims conformance to the UPS Push SOP Class as an SCU shall provide all Required Attributes as specified in Table CC.2.5-3. Additional Attributes defined by the UPS IOD may be provided as wellspecified.

An Application Entity that claims conformance to the UPS Push SOP Class as an SCP shall support all Required Attributes as specified in Table CC.2.5-3. Additional Attributes defined by the UPS IOD may be supported as wellspecified.

Table CC.2.5-3. and UPS Macros Tables in CC.2.5.1.2 combine the Attribute requirements for multiple DIMSE services (N-CREATE, N-SET, N-GET, C-FIND) to facilitate consistency between the requirements.

See PS3.4, Section 5.4.2 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 Matching Key Type column in the following table. See Section C.2.2.2 for definitions of Matching Types. If no Matching Type is specified, the types of matching valid for the VR of the Attribute shall be applied.

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

The requirements in “Remark/Condition/Matching Type” column apply to all columns unless otherwise specified.

CC.2.5.1.1 UPS Final State Requirements

COMPLETED and CANCELED are Final States for a UPS iInstance. The Attributes and vValues of the UPS iInstance must meet certain requirements before it may be placed in either of the Final States.

Note

A UPS iInstance is in the SCHEDULED state when created. See Section CC.1.1 for rules governing state transitions.

Attributes shall be valued as indicated by the Final State Codes in the Final State Ccolumn of Table CC.2.5-3 before the Procedure Step State (0074,1000) may be set to COMPLETED or CANCELED (i.e., Final State).

Performing systems are encouraged to ensure that the vValues for all Attributes reasonably reflect what was done and the Final State of the UPS. This may include blanking Attributes that are permitted to be empty and for which no reasonable vValue can be determined. The UPS contents should make it clear whether the step was completed, what work was done, what results were produced and whether the results are usable. See Section GGG.3.1 “What Was Scheduled Vs. What Was Performed” in PS3.17 for a discussion of methods to convey things like partial completion.

Note

The SCU may choose not to distribute, or otherwise make available, some or all instances created during the procedure step and referenced in the Output Information Sequence (0040,4033).

Table CC.2.5-1. Final State Codes

Final State Code	Meaning
R	The UPS State shall not be set to COMPLETED or CANCELED if this Attribute does not have a v Value.
RC	The UPS State shall not be set to COMPLETED or CANCELED if the condition is met and this Attribute does not have a v Value.
P	The UPS State shall not be set to COMPLETED if this Attribute does not have a v Value, but may be set to CANCELED.
X	The UPS State shall not be set to CANCELED if this Attribute does not have a v Value, but may be set to COMPLETED.
O	The UPS State may be set to either COMPLETED or CANCELED if this Attribute does not have a v Value.

CC.2.5.1.2 UPS Macros

To reduce the size and complexity of [Table CC.2.5-3](#), a macro notation is used.

For example, in [Table CC.2.5-3](#), a table entry specifying "Include [Table CC.2.5-2a](#) "UPS Code Sequence Macro?" should be interpreted as including the following table of text as a substitution. The nesting level for the sequence inclusion is indicated by the nesting level on the reference to the macro. Where the "mMatching kKey tType" requirement is "*" it should be replaced with the mMatching kKey tType requirement of the sSequence Attribute that incorporates this mMacro. **Where the Matching Key Type is "-". the Attribute must not be used for matching.**

For eCode sSequences that have requirements for N-CREATE, N-SET, N-GET, or C-FIND behavior that differ from the Macro, the eCode sSequence contents are explicitly listed in the Ttable rather than specifying inclusion of the Macro. **Table CC.2.5-2a. UPS Code Sequence Macro**

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
Code Value	(0008,0100)	1C/1C	1C/1C	RC	-/1C	*	1C	Code Value shall be retrieved with Single Value Matching. Required if the code value length is 16 characters or less, and the code value is not a URN or URL.
Coding Scheme Designator	(0008,0102)	1C/1C	1C/1C	RC	-/1C	*	1C	Coding Scheme Designator shall be retrieved with Single Value Matching. Shall be present if Required if Code Value (0008,0100) or Long Code Value (0008,0119) is present. May be present otherwise.
Coding Scheme Version	(0008,0103)	1C/1C	1C/1C	RC	-/1C	-	1C	Required if the v Value of Coding Scheme Designator (0008,0102) is not sufficient to identify the Code Value (0008,0100)

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
								unambiguously. <u>May be present otherwise.</u> Shall not be present if Coding Scheme Designator (0008,0102) is absent. <u>May be present otherwise.</u>
Code Meaning	(0008,0104)	1/1	1/1	<u>R</u>	-/1	-	1	Code Meaning shall not be used as Matching Key.
Long Code Value	(0008,0119)	1C/1C	1C/1C	<u>RC</u>	-/1C	*	1C	Long Code Value shall be retrieved with Single Value Matching. <u>Shall be present Required</u> if Code Value (0008,0100) is not present, and the code value is not a URN or URL.
URN Code Value	(0008,0120)	1C/1C	1C/1C	<u>RC</u>	-/1C	*	1C	Long Code Value shall be retrieved with Single Value Matching. <u>Shall be present Required</u> if Code Value (0008,0100) is not present, and the code value is a URN or URL.
Mapping Resource	(0008,0105)	3/3	3/3	<u>O</u>	-/3	-	3	
Mapping Resource UID	(0008,0118)	3/3	3/3	<u>O</u>	-/3	-	3	
Context Group Version	(0008,0106)	3/3	3/3	<u>O</u>	-/3	-	3	
Context Group Extension Flag	(0008,010B)	3/3	3/3	<u>O</u>	-/3	-	3	
Context Group Local Version	(0008,0107)	3/3	3/3	<u>O</u>	-/3	-	3	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Context Group Extension Creator UID	(0008,010D)	3/3	3/3	<u>Q</u>	-/3	-	3	

Table CC.2.5-2b. UPS Content Item Macro

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Value Type	(0040,A040)	1/1	1/1	<u>R</u>	-/1	*	1	The type of the value encoded in this name-value Item. Enumerated Values: DATETIME DATE TIME PNAME UIDREF TEXT CODE NUMERIC
Concept Name Code Sequence	(0040,A043)	1/1	1/1	<u>R</u>	-/1	*	1	Coded concept name of this name-value Item.
<i>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								<i>No Baseline CID is defined.</i>
DateTime	(0040,A120)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Datetime value for this name-value Item. Required if Value Type (0040,A040) is DATETIME.
Date	(0040,A121)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Date value for this name-value Item. Required if Value Type (0040,A040) is DATE.
Time	(0040,A122)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Time value for this name-value Item. Required if Value Type (0040,A040) is TIME.
Person Name	(0040,A123)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Person name value for this name-value Item.

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
								Required if Value Type (0040,A040) is PNAME.
UID	(0040,A124)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	UID value for this name-value Item. Required if Value Type (0040,A040) is UIDREF.
Text Value	(0040,A160)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Text value for this name-value Item. Required if Value Type (0040,A040) is TEXT.
Concept Code Sequence	(0040,A168)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Coded concept value of this name-value Item. Required if Value Type (0040,A040) is CODE.
>Include <u>Table CC.2.5-2a "UPS Code Sequence Macro"</u>								No Baseline CID is defined.
Numeric Value	(0040,A30A)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Numeric value for this name-value Item. Required if Value Type (0040,A040) is NUMERIC.
Measurement Units Code Sequence	(0040,08EA)	1C/1C	1/1	<u>RC</u>	-/1	*	1C	Units of measurement for a numeric value in this name-value Item. Required if Value Type (0040,A040) is NUMERIC.
>Include <u>Table CC.2.5-2a "UPS Code Sequence Macro"</u>								Baseline <u>CID 82 "Measurement Unit"</u>

Table CC.2.5-2c. Referenced Instances and Access Macro

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Type of Instances	(0040,E020)	1/1	1/1	<u>R</u>	-/1	O	1	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Study Instance UID	(0020,000D)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if Type of Instances (0040,E020) is DICOM and the Information Model of the referenced instance contains the Study IE ₂ .
Series Instance UID	(0020,000E)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if Type of Instances (0040,E020) is DICOM and the Information Model of the referenced instance contains the Series IE ₂ .
Referenced SOP Sequence	(0008,1199)	1/1	1/1	<u>R</u>	-/1	O	1	
>Referenced SOP Class UID	(0008,1150)	1/1	1/1	<u>R</u>	-/1	O	1	
>Referenced SOP Instance UID	(0008,1155)	1/1	1/1	<u>R</u>	-/1	O	1	
>HL7 Instance Identifier	(0040,E001)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if Type of Instances (0040,E020) is CDA.
>Referenced Frame Number	(0008,1160)	1C/1	1C/1	<u>RC</u>	-/2	O	1C	Required if the Referenced SOP Instance is a multi-frame image and the reference does not apply to all frames, and Referenced Segment Number (0062,000B) is not present.
>Referenced Segment Number	(0062,000B)	1C/1	1C/1	<u>RC</u>	-/2	O	1C	Required if the Referenced SOP Instance is a Segmentation and the reference does not apply to all segments and Referenced Frame Number (0008,1160) is not present.
DICOM Retrieval Sequence	(0040,E021)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if DICOM Media Retrieval Sequence

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
								(0040,E022), WADO Retrieval Sequence (0040,E023), WADO-RS Retrieval Sequence (0040,E025) and XDS Retrieval Sequence (0040,E024) are not present. May be present otherwise.
>Retrieve AE Title	(0008,0054)	1/1	1/1	<u>R</u>	-/1	O	1	
DICOM Media Retrieval Sequence	(0040,E022)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if DICOM Retrieval Sequence (0040,E021), WADO Retrieval Sequence (0040,E023), WADO-RS Retrieval Sequence (0040,E025) and XDS Retrieval Sequence (0040,E024) are not present. May be present otherwise.
>Storage Media File-Set ID	(0088,0130)	2/2	2/2	<u>O</u>	-/2	O	2	
>Storage Media File-Set UID	(0088,0140)	1/1	1/1	<u>R</u>	-/1	O	1	
WADO Retrieval Sequence	(0040,E023)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if DICOM Retrieval Sequence (0040,E021), DICOM Media Retrieval Sequence (0040,E022), WADO-RS Retrieval Sequence (0040,E025) and XDS Retrieval Sequence (0040,E024) are not present. May be present otherwise.
>Retrieve URI	(0040,E010)	1/1	1/1	<u>R</u>	-/1	O	1	
XDS Retrieval Sequence	(0040,E024)	1C	1C/1	<u>RC</u>	-/1	O	1C	Required if DICOM Retrieval Sequence (0040,E021), DICOM Media Retrieval Sequence (0040,E022), WADO-RS Retrieval

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
								Sequence (0040,E025) and WADO Retrieval Sequence (0040,E023) are not present. May be present otherwise.
>Repository Unique ID	(0040,E030)	1/1	1/1	<u>R</u>	-/1	O	1	
>Home Community ID	(0040,E031)	3/2	3/2	<u>O</u>	3/2	O	2	
WADO-RS Retrieval Sequence	(0040,E025)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if DICOM Retrieval Sequence (0040,E021), DICOM Media Retrieval Sequence (0040,E022), WADO Retrieval Sequence (0040,E023), and XDS Retrieval Sequence (0040,E024) are not present. May be present otherwise.
>Retrieve URL	(0008,1190)	1/1	1/1	<u>R</u>	-/1	O	1	URL specifying the location of the referenced instance(s).

Table CC.2.5-2d. HL7V2 Hierarchic Designator Macro

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Local Namespace Entity ID	(0040,0031)	1C/1	Not Allowed	<u>RC</u>	-/1	*	1C	Creation required if Universal Entity ID (0040,0032) is not present; may be present otherwise. Return Key required if set.
Universal Entity ID	(0040,0032)	1C/1	Not Allowed	<u>RC</u>	-/1	*	1C	Creation required if Local Namespace Entity ID (0040,0031) is not present; may be present otherwise. Return Key required if set.
Universal Entity ID Type	(0040,0033)	1C/1	Not Allowed	<u>RC</u>	-/1	*	1C	Creation r Required if Universal Entity ID

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
								(0040,0032) is present. Return Key required if set.

Table CC.2.5-2e. Issuer of Patient ID Macro

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
Issuer of Patient ID	(0010,0021)	2/2	Not allowed	O	3/2	R	2	
Issuer of Patient ID Qualifiers Sequence	(0010,0024)	2/2	Not allowed	O	3/2	O	2	
>Universal Entity ID	(0040,0032)	2/2	Not allowed	O	3/2	O	2	
>Universal Entity ID Type	(0040,0033)	1C/1	Not allowed	RCE	3/2	O	1C	Required if Universal Entity ID (0040,0032) is present in this item with a v Value.
>Identifier Type Code	(0040,0035)	2/2	Not allowed	O	3/2	O	2	
>Assigning Facility Sequence	(0040,0036)	2/2	Not allowed	O	3/2	O	2	The Attributes of the Assigning Facility Sequence shall only be retrieved with Sequence Matching.
<i>>>Include Table CC.2.5-2d "HL7V2 Hierarchic Designator Macro"</i>								
>Assigning Jurisdiction Code Sequence	(0040,0039)	2/2	Not allowed	O	3/2	O	2	The Attributes of the Assigning Jurisdiction Code Sequence shall only be retrieved with Sequence Matching.
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								<i>Baseline CID 5001 "Country" for country codes.</i>
>Assigning Agency or Department Code Sequence	(0040,003A)	2/2	Not allowed	O	3/2	O	2	The Attributes of the Assigning Agency or Department Code Sequence shall only be retrieved with Sequence Matching.
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								<i>No Baseline CID.</i>

Table CC.2.5-2f. SOP Instance Reference Macro

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Referenced SOP Class UID	(0008,1150)	1/1	1/1	<u>R</u>	-/1	*	1	
Referenced SOP Instance UID	(0008,1155)	1/1	1/1	<u>R</u>	-/1	*	1	

Table CC.2.5-2g. Storage Macro

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Referenced SOP Class UID	(0008,1150)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if the storage request only applies to a specific SOP Class.
DICOM Storage Sequence	(0040,4071)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if STOW-RS Storage Sequence (0040,4072) and XDS Storage Sequence (0040,4074) are not present. May be present otherwise.
>Destination AE	(0040,4071)	1/1	1/1	<u>R</u>	-/1	*	1	
STOW-RS Storage Sequence	(0040,4072)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if DICOM Storage Sequence (0040,4071) and XDS Storage Sequence (0040,4074) are not present. May be present otherwise.
>Storage URL	(0040,4073)	1/1	1/1	<u>R</u>	-/1	*	1	
XDS Storage Sequence	(0040,4074)	1C/1	1C/1	<u>RC</u>	-/1	O	1C	Required if DICOM Storage Sequence (0040,4071) and STOW-RS Storage Sequence (0040,4072) are not present. May be present otherwise.
>Repository Unique ID	(0040,E030)	1/1	1/1	<u>R</u>	-/1	*	1	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
>Home Community ID	(0040,E031)	3/2	3/2	<u>O</u>	3/2	*	2	

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 Matching Key Type 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)	Matching Key Type	Return Key Type	Remark/Condition/ 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 an extended or replacement character set is used.
SOP Class UID	(0008,0016)	See CC.2.5.1.3.1	Not allowed	R	Not allowed	O	1	Uniquely identifies the SOP Class of the Unified Procedure Step. See Section CC.3.1 for further explanation.
SOP Instance UID	(0008,0018)	Not allowed. SOP Instance is conveyed in the Affected SOP Instance UID (0000,1000)	Not allowed. SOP Instance is conveyed in the Requested SOP Instance UID (0000,1001)	R	Not allowed. SOP Instance is conveyed in the Requested SOP Instance UID (0000,1001)	U	1	Uniquely identifies the SOP Instance of the Unified Procedure Step . SOP Instance UID shall be retrieved with Single Value Matching.
<i>All other Attributes of the SOP Common Module</i>		3/3	3/3	O	3/3	-	-	
Unified Procedure Step Scheduled Procedure Information Module								

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
Scheduled Procedure Step Priority	(0074,1200)	1/1	3/1	R	3/1	R	1	Scheduled Procedure Step Priority shall be retrieved with Single Value Matching.
Scheduled Procedure Step Modification DateTime	(0040,4010)	-/1 SCP shall use time of CREATE	-/1 SCP shall use time of SET	R	3/1	O	3	Scheduled Procedure Step Modification DateTime shall be retrieved with Single Value Matching or Range Matching.
Procedure Step Label	(0074,1204)	1/1	3/1	O	3/1	R	1	
Worklist Label	(0074,1202)	2/1 If a v Value is not provided by the SCU, the SCP shall fill in the Worklist Label, e.g., using a default value or by assigning the UPS i nstance to a logical worklist.	3/1	O	3/1	R	1	
Scheduled Processing Parameters Sequence	(0074,1210)	2/2	3/2	O	3/2	-	2	
<i>>Include Table CC.2.5-2b "UPS Content Item Macro"</i>								
Scheduled Station Name Code Sequence	(0040,4025)	2/2	3/2	O	3/2	R	2	The Attributes of the Scheduled Station Name Code Sequence shall only be retrieved with Sequence Matching. Note If n-Push Scenario, the SCP-Performer has to-created with empty value, SCP but could set a value self-fill later.
<i>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
Scheduled Station Class Code Sequence	(0040,4026)	2/2	3/2	O	3/2	R	2	The Attributes of the Scheduled Station Class Code Sequence shall

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
								only be retrieved with Sequence Matching.
<i>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
Scheduled Station Geographic Location Code Sequence	(0040,4027)	2/2	3/2	O	3/2	R	2	The Attributes of the Scheduled Station Geographic Location Code Sequence shall only be retrieved with Sequence Matching.
<i>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
Scheduled Human Performers Sequence	(0040,4034)	2C/2C	3/2	O	3/2	R	2	The Attributes of the Scheduled Human Performers Sequence shall only be retrieved with Sequence Matching. Required if a Human Performer is specified.
>Human Performer Code Sequence	(0040,4009)	1/1	1/1	O	-/1	R	1	The Attributes of the Scheduled Human Performers Code Sequence shall only be retrieved with Sequence Matching.
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
>Human Performer's Name	(0040,4037)	1/1	1/1	O	-/1	O	3	
>Human Performer's Organization	(0040,4036)	1/1	1/1	O	-/1	O	3	
Scheduled Procedure Step Start DateTime	(0040,4005)	1/1	3/1	R	3/1	R	1	Scheduled Procedure Step Start DateTime shall be retrieved with Single Value Matching or Range Matching.
Expected Completion DateTime	(0040,4011)	3/1	3/1	O	3/1	R	3	Expected Completion DateTime shall be retrieved with Single Value Matching or Range Matching.
Scheduled Procedure Step Expiration DateTime	(0040,4008)	3/3	3/3	O	3/3	O	3	Scheduled Procedure Step Expiration DateTime shall be retrieved with Single Value Matching or Range Matching.

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
Scheduled Workitem Code Sequence	(0040,4018)	2/2	3/1	O	3/1	R	2	The Attributes of the Scheduled Workitem Code Sequence shall only be retrieved with Sequence Matching.
<i>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
Comments on the Scheduled Procedure Step	(0040,0400)	2/2	3/1	O	3/1	O	3	
Input Readiness State	(0040,4041)	1/1	3/1	R	3/1	R	1	Input Readiness State shall be retrieved with Single Value Matching.
Input Information Sequence	(0040,4021)	2/2	3/2	O	3/2	O	2	The Attributes of the Input Information Sequence shall only be retrieved with Sequence Matching.
<i>>Include Table CC.2.5-2c "Referenced Instances and Access Macro"</i>								
Study Instance UID	(0020,000D)	1C/2	3/2	O	3/2	O	2	Required if the Workitem is expected to result in the creation of any DICOM Composite Instances whose IOD contains the Study IE. There may be situations where the performer does not use the Study Instance UID suggested by the Scheduler.
Output Destination Sequence	(0040,4070)	3/3	3/3	O	3/3	O	3	The Attributes of the Output Destination Sequence shall only be retrieved with Sequence Matching.
<i>>Include Table CC.2.5-2g "Storage Macro"</i>								
<i>All other Attributes of the Unified Procedure Step Scheduled Procedure Information Module</i>		3/3	3/3	O	3/3	-	-	
Unified Procedure Step Relationship Module								
Patient's Name	(0010,0010)	2/2	Not allowed	O	3/2	R	2	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
Patient ID	(0010,0020)	1C/2	Not allowed	O	3/2	R	2	Required if the subject of the w Workitem requires identification or if the workitem is expected to result in the creation of objects that identify the subject. See Section C.30.4.1 "Patient Identification" in PS3.3.
<i>>Include Table CC.2.5-2e "Issuer of Patient ID Macro"</i>								
Other Patient IDs Sequence	(0010,1002)	2/2	3/3	O	3/2	O	2	
>Patient ID	(0010,0020)	1/1	1/1	O	-/1	O	1	
<i>>Include Table CC.2.5-2e "Issuer of Patient ID Macro"</i>								
>Type of Patient ID	(0010,0022)	3/3	3/3	O	3/3	O	3	
Patient's Birth Date	(0010,0030)	2/2	Not allowed	O	3/2	R	2	
Patient's Sex	(0010,0040)	2/2	Not allowed	O	3/2	R	2	
Referenced Patient Photo Sequence	(0010,1100)	3/3	3/3	O	3/3	-	3	
<i>>Include Table CC.2.5-2c "Referenced Instances and Access Macro"</i>								
Admission ID	(0038,0010)	2/2	Not allowed	O	3/2	R	2	
Issuer of Admission ID Sequence	(0038,0014)	2/2	Not allowed	O	3/2	R	2	
<i>>Include Table CC.2.5-2d "HL7V2 Hierarchic Designator Macro"</i>								
Admitting Diagnoses Description	(0008,1080)	2/2	Not allowed	O	3/2	O	2	
Admitting Diagnoses Code Sequence	(0008,1084)	2/2	Not allowed	O	3/2	O	2	The Attributes of the Admitting Diagnoses Code Sequence shall only be retrieved with Sequence Matching.
<i>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
Referenced Request Sequence	(0040,A370)	2/2	Not allowed	O	3/2	R	2	Could be "changed" while SCHEDULED by canceling and re-

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
								creating with the "correct" values.
>Study Instance UID	(0020,000D)	1/1	Not allowed	O	-/1	O	1	
>Accession Number	(0008,0050)	2/2	Not allowed	O	-/2	R	2	
>Issuer of Accession Number Sequence	(0008,0051)	2/2	Not allowed	O	-/2	R	2	The Issuer of Accession Number Sequence shall only be retrieved with Sequence Matching.
>>Include Table CC.2.5-2d "HL7V2 Hierarchic Designator Macro"								
>Placer Order Number/Imaging Service Request	(0040,2016)	3/1	Not allowed	O	-/1	O	1C	Required if set.
>Order Placer Identifier Sequence	(0040,0026)	2/2	Not allowed	O	-/2	O	2	The Order Placer Identifier Sequence shall only be retrieved with Sequence Matching.
>>Include Table CC.2.5-2d "HL7V2 Hierarchic Designator Macro"								
>Filler Order Number/Imaging Service Request	(0040,2017)	3/1	Not allowed	O	-/1	O	1C	Required if set.
>Order Filler Identifier Sequence	(0040,0027)	2/2	Not allowed	O	-/2	O	2	The Order Filler Identifier Sequence shall only be retrieved with Sequence Matching.
>>Include Table CC.2.5-2d "HL7V2 Hierarchic Designator Macro"								
>Requested Procedure ID	(0040,1001)	2/2	Not allowed	O	-/2	R	2	
>Requested Procedure Description	(0032,1060)	2/2	Not allowed	O	-/2	O	2	
>Requested Procedure Code Sequence	(0032,1064)	2/2	Not allowed	O	-/2	O	2	
>>Include Table CC.2.5-2a "UPS Code Sequence Macro"								
>Reason for the Requested Procedure	(0040,1002)	3/3	3/3	O	-/3	O	3	
>Reason for Requested	(0040,100A)	3/3	3/3	O	-/3	O	3	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/Matching Type
Procedure Code Sequence								
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
>Requested Procedure Comments	(0040,1400)	3/3	3/3	O	-/3	O	1C	Required if set.
>Confidentiality Code	(0040,1008)	3/3	3/3	O	-/3	O	3	
>Names of Intended Recipients of Results	(0040,1010)	3/3	3/3	O	-/3	O	3	
>Imaging Service Request Comments	(0040,2400)	3/3	3/3	O	-/3	O	3	
>Requesting Physician	(0032,1032)	3/3	3/3	O	-/3	O	3	
>Requesting Service	(0032,1033)	3/1	3/1	O	-/3	R	3	
>Requesting Service Code Sequence	(0032,1034)	3/3	3/3	O	-/3	O	3	
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
>Issue Date of Imaging Service Request	(0040,2004)	3/3	3/3	O	-/3	O	3	
>Issue Time of Imaging Service Request	(0040,2005)	3/3	3/3	O	-/3	O	3	
>Referring Physician's Name	(0008,0090)	3/3	3/3	O	-/3	O	3	
Replaced Procedure Step Sequence	(0074,1224)	1C/1C	Not allowed	O	3/2	R	3	Required if the UPS replaces another Procedure Step.
<i>>Include Table CC.2.5-2f "SOP Instance Reference Macro"</i>								
<i>All other Attributes of the Unified Procedure Step Relationship Module</i>		3/3	3/3	O	3/3	-	-	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
Patient Demographic Module								
<i>All Attributes of the <u>Patient Demographic Module</u></i>		3/3	3/3	O	3/3	-	-	
Patient Medical Module								
Medical Alerts	(0010,2000)	3/2	3/2	O	3/2	O	2C	Required if present in SOP instance.
Pregnancy Status	(0010,21C0)	3/2	3/2	O	3/2	O	2C	Required if present in SOP instance.
Special Needs	(0038,0050)	3/2	3/2	O	3/2	O	2C	Required if present in SOP instance.
<i>All other Attributes of the <u>Patient Medical Module</u></i>		3/3	3/3	O	3/3	O	3	
Visit Identification Module								
<i>All Attributes of the <u>Visit Identification Module</u></i>		3/3	3/3	O	3/3	-	-	
Visit Status Module								
<i>All Attributes of the <u>Visit Status Module</u></i>		3/3	3/3	O	3/3	-	-	
Visit Admission Module								
<i>All Attributes of the <u>Visit Admission Module</u></i>		3/3	3/3	O	3/3	-	-	
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
Procedure Step Progress Information Sequence	(0074,1002)	2/2 Shall be empty	3/2	X	3/2	!	2	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
>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	(0074,1007)	Not Allowed	3/3	O	-/3	⚠	⚠	
<i>>>Include Table CC.2.5-2b "UPS Content Item Macro"</i>								
>>Content Item Modifier Sequence	(0040,0441)	Not Allowed	3/3	O	-/3	⚠	⚠	
<i>>>>Include Table CC.2.5-2b "UPS Content Item Macro"</i>								
>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 Discontinuation Reason Code Sequence	(0074,100e)	Not Allowed	3/1	X	-/1	⚠	=	
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
Unified Procedure Step Performed Procedure Information Module								
Unified Procedure Step Performed Procedure Sequence	(0074,1216)	2/2 Shall be created empty	3/2	P	3/2	-	-	See CC.2.5.1.3.2 .
>Actual Human Performers Sequence	(0040,4035)	Not Allowed	3/1	RC	-/1	O	1C	For Final State s shall be provided if known.

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
								Return Key required if set. The Attributes of the Actual Human Performers Sequence shall only be retrieved with Sequence Matching.
>>Human Performer Code Sequence	(0040,4009)	Not Allowed	3/1	RC	-/1	-	-	Shall be provided if known.
<i>>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
>>Human Performer's Name	(0040,4037)	Not Allowed	3/1	RC	-/1	-	-	Shall be provided if known.
>>Human Performer's Organization	(0040,4036)	Not Allowed	3/1	O	-/1	-	-	
>Performed Station Name Code Sequence	(0040,4028)	Not Allowed	3/2	P	-/2	O	3	
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
>Performed Station Class Code Sequence	(0040,4029)	Not Allowed	3/2	O	-/2	-	-	
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
>Performed Station Geographic Location Code Sequence	(0040,4030)	Not Allowed	3/2	O	-/2	-	-	
<i>>>Include Table CC.2.5-2a "UPS Code Sequence Macro"</i>								
>Performed Procedure Step Start DateTime	(0040,4050)	Not Allowed	3/1	P	-/1	-	-	
>Performed Procedure Step Description	(0040,0254)	Not Allowed	3/1	O	-/1	-	-	
>Comments on the Performed Procedure Step	(0040,0280)	Not Allowed	3/1	O	-/1	-	-	

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Final State	Req. Type N-GET (SCU/SCP)	Matching Key Type	Return Key Type	Remark/Condition/ Matching Type
>Performed Workitem Code Sequence	(0040,4019)	Not Allowed	3/1	P	-/1	-	-	
>>Include <u>Table CC.2.5-2a "UPS Code Sequence Macro"</u>								
>Performed Processing Parameters Sequence	(0074,1212)	Not Allowed	3/1	O	-/1	-	-	
>>Include <u>Table CC.2.5-2b "UPS Content Item Macro"</u>								
>Performed Procedure Step End DateTime	(0040,4051)	Not Allowed	3/1	P	-/1	O	1C	Required if set.
>Output Information Sequence	(0040,4033)	Not Allowed	2/2	P	-/2	-	-	If there are no relevant output objects <u>SOP Instances</u> , then this Sequence may have no <u>Items</u> .
>>Include <u>Table CC.2.5-2c "Referenced Instances and Access Macro"</u>								

CC.2.5.1.3.1 UPS SOP Class UID

The SOP Class UID shall be set to "1.2.840.10008.5.1.4.34.6.1" by the SCP.

CC.2.5.1.3.2 Unified Procedure Step Performed Procedure Sequence

The Attributes of the Unified Procedure Step Performed Procedure Sequence (0074,1216) shall only be retrieved with Sequence Matching.

Note

Since this Attribute may be created empty and has a Final State requirement of "X", a UPS in the SCHEDULED state may be canceled with two N-ACTION requests (IN PROGRESS then CANCELED) and no N-SET request.

CC.2.5.2 Service Class User Behavior

An SCU uses N-CREATE to request the SCP schedule a new UPS.

The SCU shall specify in the N-CREATE request primitive the UPS Push SOP Class UID and the SOP Instance UID for the UPS that is to be created and for which Attribute Values are to be provided. See [Section CC.3.1](#) for further discussion of UPS SOP Class UIDs.

The SCU shall provide Attribute Values in the N-CREATE request primitive for all required UPS Attributes as specified in [Table CC.2.5-3](#). Additionally, **v**Values may be provided for optional Attributes as specified in [Table CC.2.5-3](#).

The SCU shall specify a **v**value of "SCHEDULED" for the Attribute Procedure Step State (0074,1000) in the N-CREATE request primitive.

CC.2.5.3 Service Class Provider Behavior

The SCP shall create and maintain UPS **i**nstances as instructed by creation requests and as specified by [Table CC.2.5-3](#).

The SCP shall return, via the N-CREATE response primitive, the N-CREATE Response Status Code applicable to the associated request.

The SCP shall accept creation requests only if the **vValue** of the Procedure Step State (0074,1000) Attribute is "SCHEDULED". If the Procedure Step State **(0074,1000)** Attribute has another **vValue**, the SCP shall fail the request.

The SCP may modify Attributes of a UPS **iInstance**, e.g., to correct invalid Attribute Values. A description of the modifications the SCP may perform shall be documented in the **eConformance sStatement** of the SCP.

The SCP may also create and maintain UPS **iInstances** without receiving a UPS **iInstance** N-CREATE request, e.g., based on internal logic, operator inputs or HL7 messages. The contents of the **iInstance** created by the SCP must still comply with the N-CREATE requirements in Table CC.2.5-3.

Upon creating a new UPS Instance, the SCP shall update UPS Subscription **Stateus** of the Instance for each AE with a Global Subscription as described in Section CC.2.3. Optionally, the SCP may create a UPS Subscription for the N-CREATE SCU **application Entity**; such behavior shall be documented in the Conformance Statement.

Upon creating a new UPS Instance, the SCP shall send UPS State Reports (if it supports the UPS Event SOP Class) as described in Section CC.2.4.3 regardless of whether the creation was based on an N-CREATE or on internal logic.

Bi-directional **Aauthentication** of machines/users/applications is possible at ~~the establishment of an~~ association ~~time~~ (see PS3.7 and PS3.15). PS3.7 provides a "Refused: ~~Refused:~~ Not authorized" **errorStatus eCode**. There are no specific requirements to perform authorization.

CC.2.5.4 Status Codes

Table CC.2.5-4 defines the **sStatus eCode** values that might be returned in a N-CREATE response. General **sStatus eCode** values and fields related to **sStatus eCode** values are defined for N-CREATE DIMSE Service in PS3.7.

Table CC.2.5-4. N-CREATE Response Status Values [for Create a Unified Procedure Step]

Service Status	Further Meaning	Status Code
Success	The UPS was created as requested	0000
Warning	The UPS was created with modifications	B300
Failure	Failed: The provided vValue of UPS State was not "SCHEDULED".	C309