DICOM Correction Proposal

STATUS	Final Text
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Correction Number CP-2477
Log Summary: Fix Requirement Type Final State Cells
Name of Standard PS3.4 2025d
Rationale for Correction: PS3.4, Table F.7.2-1, under **Image Acquisition Results**, rows ">Performing Physician's Name" up to and including ">Retrieve AE Title" all have an entry in the Requirement Type Final State column, while Note 1 below the table states "The requirement for the final state is that which applies at the time that the Performed Procedure Step Status (0040,0252) is N-SET to a value of COMPLETED or DISCONTINUED, as described in Section F.7.2.2.2. It is only described if it is different from the SCP requirement for the N-CREATE." and the final state value for these items is equal to the SCP requirement for the N-CREATE. Hence, according to the highlighted rule, these final state values should be removed.
Correction Wording:

Modify PS3.4, Table F.7.2-1 as indicated below (including highlights)

Table F.7.2-1. Modality Performed Procedure Step SOP Class N-CREATE, N-SET and Final State Attributes

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Requirement Type Final State (see Note 1)
Specific Character Set	(0008,0005)	1C/1C (Required if an extended or replacement character set is used)	1C/1C (Required if an extended or replacement character set is used in an Attribute that is set)	
…				
Image Acquisition Results				
Modality	(0008,0060)	1/1	Not allowed	
Study ID	(0020,0010)	2/2	Not allowed	
Performed Protocol Code Sequence	(0040,0260)	2/2	3/2	
>Include Table F.7.2-1e "Modality Performed Procedure Step Enhanced Code Value Macro with N-SET, Optional Meaning"				
Performed Series Sequence	(0040,0340)	2/2	3/1	1 (see note 2)
>Performing Physician's Name	(0008,1050)	2/2	2/2	~~2~~
>Protocol Name	(0018,1030)	1/1	1/1	~~1~~
>Operators' Name	(0008,1070)	2/2	2/2	~~2~~

Attribute Name	Tag	Req. Type N-CREATE (SCU/SCP)	Req. Type N-SET (SCU/SCP)	Requirement Type Final State (see Note 1)
>Series Instance UID	(0020,000E)	1/1	1/1	~~1~~
>Series Description	(0008,103E)	2/2	2/2	~~2~~
>Retrieve AE Title	(0008,0054)	2/2	2/2	~~2~~
>Archive Requested	(0040,A494)	3/3	3/3	
…				

Note

1. The requirement for the final state is that which applies at the time that the Performed Procedure Step Status (0040,0252) is N-SET to a value of COMPLETED or DISCONTINUED, as described in Section F.7.2.2.2. It is only described if it is different from the SCP requirement for the N-CREATE.

2. The Performed Series Sequence (0040,0340) may not be empty (zero length) at the time that the Performed Procedure Step Status (0040,0252) is N-SET to a value of COMPLETED or DISCONTINUED. In other words a Series must exist for every Performed Procedure Step, though it may contain no Images or Non-Image Composite objects, if none were created, as described in Section F.7.2.2.2.

3. Attributes (0040,1006) Placer Order Number/Procedure and (0040,1007) Filler Order Number/Procedure were previously defined in DICOM. They are now retired (see PS3.3-1998).

4. Attributes (0040,2006) and (0040,2007) were previously defined in DICOM. They are now retired (see PS3.3-1998).

5. Only Attributes that are specified in a SOP Instance at N-CREATE may later be updated through the N-SET. If an SCU wishes to use the PPS Discontinuation Reason Code Sequence (0040,0281), it must create that Attribute (zero-length) during N-CREATE.

6. The Radiation Dose Module was previously defined in DICOM. This is now retired (see PS3.3-2017c).

Below text is for informational purposes only

F.7.2.2 Set Modality Performed Procedure Step Information

This operation allows an SCU to set Attribute Values of an instance of the Modality Performed Procedure Step SOP Class and provide information about a specific real-world Modality Performed Procedure Step that is under control of the SCU. This operation shall be invoked through the DIMSE N-SET Service.

F.7.2.2.1 Modality Performed Procedure Step IOD Subset Specification

The Application Entity that claims conformance to this SOP Class as an SCU may choose to modify a subset of the Attributes maintained by the SCP. The Application Entity that claims conformance as an SCP to this SOP Class shall support the subset of the Modality Performed Procedure Step Attributes specified in Table F.7.2-1.

The character set used for Attribute Values updated using the N-SET shall be the same as that specified by the N-CREATE Request Primitive.

F.7.2.2.2 Service Class User

The SCU shall specify in the N-SET request primitive the UID of the Modality Performed Procedure Step SOP Instance for which it wants to set Attribute Values.

The SCU shall be permitted to set Attribute Values for any Modality Performed Procedure Step SOP Class Attribute specified in Table F.7.2-1. The SCU shall specify the list of Modality Performed Procedure Step SOP Class Attributes for which it wants to set the Attribute Values. The SCU shall provide, with one or more N-SET request primitives, the Attribute Values specified in Table F.7.2-1. The encoding rules for Modality Performed Procedure Step Attributes are specified in the N-SET request primitive specification in PS3.7. The SCU shall only set Attribute Values that are already created with an N-CREATE request.

The SCU shall not send N-SET request primitives for a Modality Performed Procedure Step SOP Instance after a N-SET request primitive with a value for the Attribute "Performed Procedure Step Status" (0040,0252) is "COMPLETED" or "DISCONTINUED" has been sent.

If Sequences are included in a N-SET command, all Items of a Sequence are to be included in the command and not only the Items to be updated.

Once the Modality Performed Procedure Step Status (0040,0252) has been set to "COMPLETED" or "DISCONTINUED" the SCU shall no longer modify the Modality Performed Procedure Step SOP Instance, and shall not create new Composite SOP Instances as part of the same Modality Performed Procedure Step SOP Instance.

Note

A Modality that wishes to continue or resume creating Composite SOP Instances may create a new Modality Performed Procedure Step.

Before or when Modality Performed Procedure Step Status (0040,0252) is set to "COMPLETED" or "DISCONTINUED" the SCU shall have created or set all the Attributes according to the requirements in the Final State column of Table F.7.2-1.

Before or when Modality Performed Procedure Step Status (0040,0252) is set to "COMPLETED" or "DISCONTINUED" the SCU shall have sent to the SCP a list of all Image SOP Instances and all Non-Image Composite SOP Instances created during the Procedure Step in Referenced Image Sequence (0008,1140) and Referenced Non-Image Composite SOP Instance Sequence (0040,0220) respectively.

Note

1. The intent is that a completed or discontinued Modality Performed Procedure Step entity will contain a complete list of all the Images and Non-Image Composite SOP Instances that were created.

2. The distinction between the list of images and non-images is present for historic reasons only, and has no semantic significance.

The Modality Performed Procedure Step Status (0040,0252) shall not be set to "COMPLETED" or "DISCONTINUED" if the list contains neither Image references nor Non-Image Composite SOP Instance references, unless no such Instances were created.

F.7.2.2.3 Service Class Provider

The N-SET operation allows the SCU to request that the SCP update selected Attribute Values for a specific Modality Performed Procedure Step SOP Instance. This operation shall be invoked through the use of the DIMSE N-SET Service used in conjunction with the appropriate Modality Performed Procedure Step SOP Instance. The N-SET value for Specific Character Set (0008,0005) does not replace the previous value. The SCP shall appropriately modify its internal representation so that subsequent operations reflect the combination of the character sets in use by the Attributes in this N-SET and those used by Attributes that have not been modified.

Note

The SCP may need to convert the text for instance to the Unicode character set. If the SCP is not able to perform a necessary conversion it may return a Failure Status Code of 0106H Invalid Attribute Value.

The SCP shall return, via the N-SET response primitive, the N-SET Response Status Code applicable to the associated request. Contingent on the N-SET Response Status, the SCP shall update the Referenced Performed Procedure Step Attributes.

The SCP shall accept N-SET request primitives only if the value of the already existing Performed Procedure Step Status (0040,0252) is "IN PROGRESS". If the already existing Performed Procedure Step Status (0040,0252) has another value, the SCP shall set a Failure Status Code of 0110H "Processing failure" with a Specific Error Comment (see Section F.7.2.2.4).

The SCP may itself modify any Attributes of the Modality Performed Procedure Step SOP Instance only after Performed Procedure Step Status (0040,0252) has been set to a value of "COMPLETED" or "DISCONTINUED".

Note

1. Such coercion of Attributes by the SCP may be necessary to correct, for example, patient identification information or incorrectly selected scheduling information. Such an operation is not permitted to the SCU by the requirements described in Table F.7.2-1, which might create a new Modality Performed Procedure Step SOP Instance to achieve the same objective.

2. Under exceptional circumstances, it may be necessary for the SCP to itself set the Performed Procedure Step Status (0040,0252) to a value of COMPLETED or DISCONTINUED, for example if the Modality has failed. When the Modality recovers, subsequent N-SETs may fail.