

DICOM Correction Item

Correction Number		CP 257
Log Summary: Clarify Referenced Study Component Sequence		
Type of Modification	Name of Standard	
Clarification	PS 3.3, 3.4, 3.6, 3.16 2001	
<p>Rationale for Correction</p> <p>The use of Referenced Study Component Sequence (0008,1111) has evolved since the first DICOM publication in 1993. Both novice and more experienced readers of DICOM frequently misinterpret this attribute since it is not consistently described. The use of Performed Procedure Steps and have effectively replaced Study Components within the current DICOM model.</p> <p>Supplement 17 (Modality Performed Procedure Step) introduced the concept of a Performed Procedure Step as a generalization of Study Component. Text was added to Part 4, Annex F to allow a Referenced Study Component Sequence (0008,1111) to reference either a Study Component SOP Instance or an MPPS SOP Instance. While the attribute description in the General Series Module was updated to reflect this duality, other attribute descriptions have not all been similarly updated.</p> <p>Supplement 52 (General-Purpose Worklist) introduced a General-Purpose Performed Procedure Step but did not clarify if Referenced Study Component Sequence (0008,1111) can also reference a General-Purpose Performed Procedure Step SOP Instance.</p> <p>The proposed solution is to avoid confusion and rename the attribute from “Referenced Study Component Sequence” to “Referenced Performed Procedure Step Sequence” and adapt all descriptions and references.</p> <p>This CP originally included changes to Referenced Study Component Sequence (0008,1111) within the Storage Commitment Service Class. However, Supplement 68 (Retire Storage Commitment Pull Model) retires the use of Referenced Study Component Sequence (0008,1111) within Storage Commitment and the changes have therefore been removed from this CP.</p>		
<p>Sections of documents affected</p> <p>PS 3.3 C.4.1, Table C.4-1</p> <p>PS 3.3 C.7.3.1, Table C.7-4</p> <p>PS 3.3 C.8.8.1, Table C.8-33</p> <p>PS 3.3 C.8.11.1, Table C.8-64</p> <p>PS 3.3 C.17.1, Table C.17-1</p> <p>PS 3.3 Annex K</p> <p>PS 3.4 F.3.2.1.1</p> <p>PS 3.4 F.3.5.1</p> <p>PS 3.3, C.4.19</p> <p>PS 3.3, K.6.2.2.2</p> <p>PS 3.6, Section 6</p> <p>PS 3.16, TID 1005</p>		
Correction Wording:		

Item 1: Amend PS3.3, C.4.1 Study Relationship Module

**Table C.4-1
STUDY RELATIONSHIP MODULE ATTRIBUTES**

Attribute Name	Tag	Attribute Description
...
Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	Uniquely identifies the Study Component SOP Instances to which the Study SOP Instance is related. Uniquely identifies the Performed Procedure Step SOP Instances to which the Study SOP Instance is related (e.g. a Modality or General-Purpose Performed Procedure Step SOP Instance or Study Component SOP Instance).
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
...

Item 2: Amend PS3.3, C.7.3.1 General Series Module

**Table C.7-4
GENERAL SERIES MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
...			
Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	3	Uniquely identifies the Study Component SOP Instance or Modality Performed Procedure Step SOP Instance to which the Series is related. Uniquely identifies the Performed Procedure Step SOP Instance to which the Series is related (e.g. a Modality or General-Purpose Performed Procedure Step SOP Instance or Study Component SOP Instance). The Sequence shall have zero or one Items.
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.
...			

- Notes: 1. If the Modality **or General-Purpose** Performed Procedure Step SOP Class is supported as an SCU by a Storage SCU, the SCU is strongly encouraged to support the attribute ~~Referenced Study Component Sequence~~ **Referenced Performed Procedure Step Sequence** (0008,1111). This attribute references the ~~Modality~~ Performed Procedure Step SOP Instance, and extraction of this Attribute from ~~an image a composite instance~~ may allow retrieval of the ~~Modality~~ Performed Procedure Step SOP Instance.
2. If the ~~Modality~~ **Storage SCU** does not conform to the Modality **or General-Purpose** Performed Procedure Step SOP Class, it is still advisable to include the attributes Performed Procedure Step Start Date (0040,0244), Performed Procedure Step Start Time (0040,0245) and Performed Procedure Step Description (0040,0254) into the ~~Image IOs~~ **composite instances**.

Item 3: Amend PS 3.3, C.8.8.1 RT Series Module

Table C.8-33 - RT SERIES MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
...			
Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	3	Uniquely identifies the Study Component SOP Instances to which the series is related. Uniquely identifies the Performed Procedure Step SOP Instance to which the Series is related (e.g. a Modality or General-Purpose Performed Procedure Step SOP Instance or Study Component SOP Instance). One or more items may be included in this sequence.
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.

Item 4: Amend PS 3.3, C.8.11.1 DX Series Module

**Table C.8-64
 DX SERIES MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
...			

Referenced Study Component Sequence-Referenced Performed Procedure Step Sequence	(0008,1111)	1C	<p>Uniquely identifies the Study Component SOP Instance or Modality Performed Procedure Step SOP Instance to which the Series is related. Uniquely identifies the Performed Procedure Step SOP Instance to which the Series is related (e.g. a Modality or General-Purpose Performed Procedure Step SOP Instance or Study Component SOP Instance). The Sequence shall have one Item.</p> <p>Required if Study Component SOP Class or Modality Performed Procedure Step SOP Class is supported. Required if the Modality Performed Procedure Step SOP Class, General-Purpose Performed Procedure Step SOP Class or Study Component SOP Class is supported.</p>
>Referenced SOP Class UID	(0008,1150)	1C	<p>Uniquely identifies the referenced SOP Class.</p> <p>Required if Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.</p>
>Referenced SOP Instance UID	(0008,1155)	1C	<p>Uniquely identifies the referenced SOP Instance.</p> <p>Required if Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.</p>
...			

Item 5: Amend PS 3.3, C.17.1 SR Document Series Module

Table C.17-1
SR DOCUMENT SERIES MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
...			

Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	2	Uniquely identifies the Performed Procedure Step SOP Instance for which the Series is created. Only a single Item shall be permitted in this sequence. Notes: 1. The Study Component Performed Procedure Step referred to by this Attribute is the Performed Procedure Step during which this Document is generated. 2. If this Document is generated during the same Modality or General-Purpose Performed Procedure Step as the evidence in the current interpretation procedure, this attribute may contain reference to that Modality or General-Purpose Performed Procedure Step. 3. This Attribute is not used to convey reference to the evidence in the current interpretation procedure. See Current Requested Procedure Evidence Sequence (0040,A375). 4. This Sequence may be sent zero length if the Performed Procedure Step is unknown.
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.
> Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Study Component Sequence Referenced Performed Procedure Step Sequence (0008,1111) is sent.

Item 6: Amend PS 3.3, Annex K

The following is a simple and non-comprehensive illustration of the encoding of the Informative SR Content Tree Example of Figure C.17.4-1.

SR Tree Depth	Nesting	Attribute	Tag	VR	VL (hex)	Value
		...				
		Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	SQ	fffffff	
		...				

Item 7a: Amend PS 3.4, F.1.1

F.1.1 Scope

...

Note: In the Referenced ~~Study Component~~ **Performed Procedure Step Sequence** (0008,1111) the Referenced SOP Class UID (0008,1150) can be either the UID of the Study Component Management SOP Class or the UID of the Modality Performed Procedure Step SOP Class **or the UID of the General Purpose Performed Procedure Step SOP Class**. The SOP Instance UIDs will not be the same.

Item 7b: Amend PS 3.4, F.3.2.1.1, Table F.3-2

F.3.2.1.1 Study IOD Subset Specification

The Application Entity which claims conformance to this SOP Class as an SCU may choose to interpret the Attributes maintained by the SCP which the SCU receives via the operations and notifications of the SOP Class. The Application Entity which claims conformance as an SCP to the Detached Study Management SOP Class shall support the subset of the Study IOD Attributes specified in Table F.3-2.

**Table F.3-2
 DETACHED STUDY MANAGEMENT SOP CLASS N-GET ATTRIBUTES**

Attribute name	Tag	Requirement type (SCU/SCP)
...
Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	3/1C (Required if a Referenced Study Component or Performed Procedure Step exists.)
>Referenced SOP Class UID	(0008,1150)	3/1C (Required if sequence is present)
>Referenced SOP Instance UID	(0008,1155)	3/1C (Required if sequence is present)
...

Item 8: Amend PS 3.4, F.3.5.1, Table F.3-5

F.3.5.1 SCU Conformance

An implementation which is conformant to this SOP Class as an SCU shall meet conformance requirements for the:

- operations which it invokes
- notifications which it receives

**Table F.3-5
 STUDY NOTIFICATION EVENT INFORMATION**

Event type name	Event type ID	Attribute	Tag	Req. type SCU/SCP
...	(0008,0012)	-/1
Study Completed	5	Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	-/1
		>Referenced SOP Class UID	(0008,1150)	-/1C (Required if sequence is present)
		>Referenced SOP Instance UID	(0008,1155)	-/1C (Required if sequence is present)
	

Study Verified	6	Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	-/1
		>Referenced SOP Class UID	(0008,1150)	-/1C (Required if sequence is present)
		>Referenced SOP Instance UID	(0008,1155)	-/1C (Required if sequence is present)
	

Item 9: Amend PS 3.3, C.4.19, Table C.4-19 (from Supplement 52)

C.4.19 General Purpose Scheduled Procedure Step Information Module

Table C.4-19 General Purpose Scheduled Procedure Step Information Module Attributes

Attribute Name	Tag	Attribute Description
...
Referenced Study Component Sequence Referenced Performed Procedure Step Sequence	(0008,1111)	List of any Modality or General Purpose Performed Procedure Steps, or other Study Components, that may be used to perform the procedure step. This sequence may contain references to performed procedure steps resulting from previous contributions to the performance of the procedure step (e.g. an image processing procedure step interrupted, and completed later). Zero or more Items may be included in this sequence.
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the SOP Instance.
...

Item 10: Amend PS 3.4, K.6.2.2.2, Table K.6-2 (from Supplement 52)

K.6.2.2.2 General Purpose Worklist Attributes

Table K.6-2 defines the Attributes of the General Purpose Worklist Information Model:

