

DICOM Correction Proposal

STATUS	Letter Ballot
Date of Last Update	2023-09-02
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Submission Date	2023-01-19

Correction Number	CP-2281
Log Summary: Remove references to retired IODs and other retired concepts	
Name of Standard	PS3.3, PS3.4
Rationale for Correction:	<p>The standard text and also a figure still contain references to retired concepts, such as “Patient IOD”, “Study IOD” and “Study Component Service Class”.</p> <p>Furthermore, the term “Image IODs” is not always appropriate, so it is proposed to replace these terms.</p> <p>References to retired “Patient SOP Instance”, “Study SOP Instance”, “Visit SOP Instance” are replaced.</p>
Correction Wording:	

Change PS3.3 Figure 7-2c to Replace “Study IOD” in the Figure with “Study”

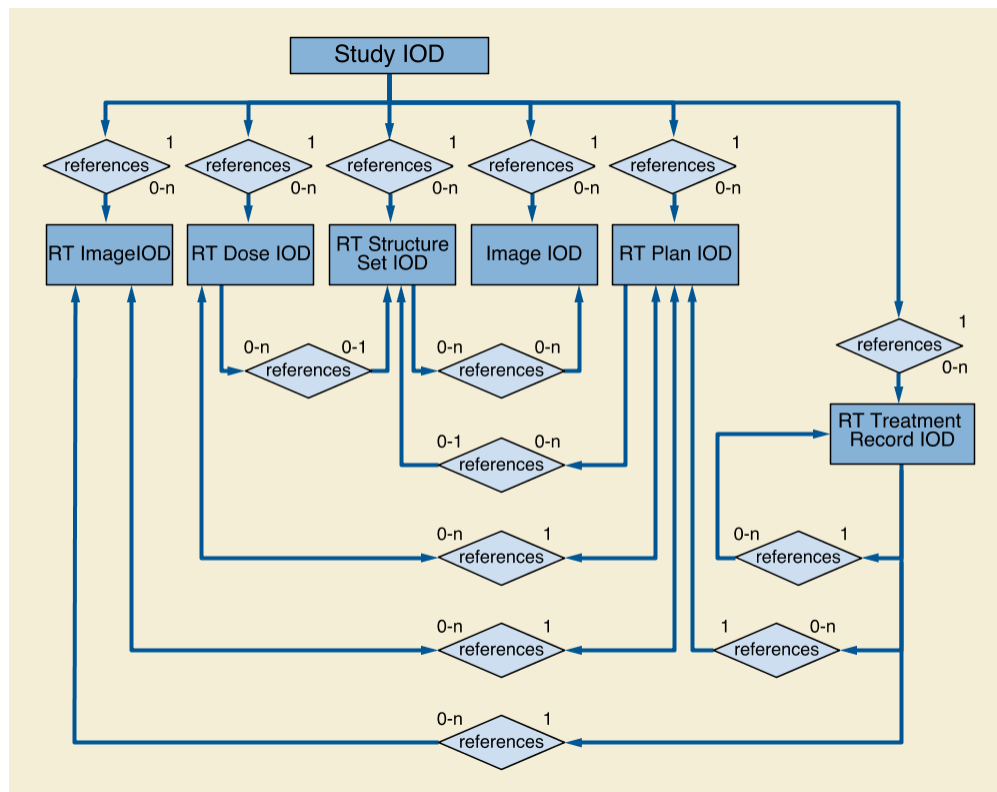


Figure 7-2c. DICOM Information Model - RADIOTHERAPY

7.6 Extension of the DICOM Model of the Real World for Clinical Trials and Research

The DICOM Model of the Real World is extended for Clinical Trials and research with the addition of several objects whose relationships to each other and existing DICOM Real World objects are shown in Figure 7.6-1.

Attributes of the Clinical Trial Sponsor, Clinical Trial Protocol, Clinical Trial Subject, and Clinical Trial Site objects are represented in the Clinical Trial Subject Module within the Patient **IOD**. Attributes of the Clinical Trial Time Point object are represented in the Clinical Trial Study Module within the Study **IOD**. The Clinical Trial Coordinating Center Attribute is represented in the Clinical Trial Series Module within ~~Image IOD~~ **the Series IE**.

[...]

10.6 Request Attributes Macro

Table 10-9. Request Attributes Macro Attributes

Attribute Name	Tag	Type	Attribute Description
...			
Study Instance UID	(0020,000D)	3	The unique identifier for the Study provided for this Requested Procedure.
Referenced Study Sequence	(0008,1110)	3	Uniquely identifies the Study SOP Instances associated with this SOP Instance. One or more Items are permitted in this Sequence. See Section 10.6.1.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"			
...			

10.6.1 SOP Class UID in Referenced Study Sequence

Since Referenced Study Sequence (0008,1110) is Type 2 or 3 in each usage, the Attribute may be zero length or omitted, respectively.

If Referenced Study Sequence (0008,1110) is present with an Item, the SOP Class UID of the Detached Study Management SOP Class (Retired) may be used in Referenced SOP Class UID (0008,1150).

A.16.2 X-Ray Radiofluoroscopic Image IOD Entity-Relationship Model

This IOD uses the E-R Model in Section A.1.2, with only the Image IE below the Series IE.

Note

When a Study ~~(or Study Component)~~ contains a number of Multi-frame images that do not need to be grouped under different Series, a single Series may be used with a Series number containing an arbitrary value (e.g., 1).

[...]

Change PS3.3 Section C.2.1

C.2.1 Patient Relationship Module

Table C.2-1 specifies the Attributes of the Patient Relationship Module, which reference SOP Instances related to this SOP Class.

Table C.2-1. Patient Relationship Module Attributes

Attribute Name	Tag	Attribute Description
Referenced Study Sequence	(0008,1110)	Uniquely identifies the Study SOP Instances associated with the Patient SOP Instance . One or more Items shall be included in this Sequence. See Section 10.6.1.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"		
Referenced Visit Sequence	(0008,1125)	Uniquely identifies the Visits SOP Instances associated with this Patient SOP Instance . One or more Items shall be included in this Sequence.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"		
Referenced Patient Alias Sequence	(0038,0004)	Uniquely identifies any Patient SOP Instances that also describe this Patient. These SOP Instances are aliases. Zero or more Items shall be included in this Sequence.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"		

Change PS3.3 Section C.3.1

C.3.1 Visit Relationship Module

Table C.3-1 specifies the Attributes of the Visit Relationship Module, which reference SOP Instances related to this SOP Class.

Table C.3-1. Visit Relationship Module Attributes

Attribute Name	Tag	Attribute Description
Referenced Study Sequence	(0008,1110)	Uniquely identifies the Study ies SOP Instances associated with the Visit SOP Instance . One or more Items shall be included in this Sequence. See Section 10.6.1.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"		
Referenced Patient Sequence	(0008,1120)	Uniquely identifies the Patient SOP Instance that relates to the Visit SOP Instance . Only a single Item shall be included in this Sequence.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"		

Change PS3.3 Section C.4.11

C.4.11 Requested Procedure Module

Table C.4-11. Requested Procedure Module Attributes

Attribute Name	Tag	Attribute Description
...		
Study Instance UID	(0020,000D)	Unique identifier to be used to identify the Study.
...		
Referenced Study Sequence	(0008,1110)	Uniquely identifies the Study ies SOP Instances associated with this SOP Instance. One or more Items shall be included in this Sequence. See Section 10.6.1.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"		
...		

Change PS3.3 Section C.4.13

C.4.13 Performed Procedure Step Relationship Module

Table C.4-13 specifies the Attributes of the Performed Procedure Step Relationship Module, which are used to reference other SOP Classes and other Information Entities of the DICOM real-world model as defined in Section 7.3.1.6.

Table C.4-13. Performed Procedure Step Relationship Module Attributes

Attribute Name	Tag	Attribute Description
...		
Referenced Patient Sequence	(0008,1120)	Uniquely identifies the Patient SOP Instance . Only a single Item shall be included in this Sequence.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"		
...		

Change PS3.3 Section C.7.2.1

C.7.2.1 General Study Module

Table C.7-3 specifies the Attributes, which identify and describe the Study performed upon the Patient.

Table C.7-3. General Study Module Attributes

Attribute Name	Tag	Type	Attribute Description
Study Instance UID	(0020,000D)	1	Unique identifier for the Study.
...			
Study Description	(0008,1030)	3	Institution-generated description or classification of the Study (component) performed.
...			
Referenced Study Sequence	(0008,1110)	3	A Sequence that provides reference to a Study SOP Class/Instance pair . One or more Items are permitted in this Sequence. See Section 10.6.1.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"			

Attribute Name	Tag	Type	Attribute Description
...			

Change PS3.3 Section C.13.2

C.13.2 Basic Film Session Relationship Module

Table C.13-2. Basic Film Session Relationship Module Attributes

Attribute Name	Tag	Attribute Description
...		
Proposed Study Sequence	(2130,00A0)	Attributes that may be used to identify and describe the Patient, Study and Series that are the subject of this Film Session. Only a single Item is permitted in this Sequence.
...		
>Study Instance UID	(0020,000D)	See Section C.4.1 Study Relationship Module Section C.7.2.1 General Study Module for description.
>Study Date	(0008,0020)	See Section C.4.5 Study Acquisition Module Section C.7.2.1 General Study Module for description.
>Study Time	(0008,0030)	See Section C.4.5 Study Acquisition Module Section C.7.2.1 General Study Module for description.
>Study ID	(0020,0010)	See Section C.4.2 Study Identification Module Section C.7.2.1 General Study Module for description.
>Study Description	(0008,1030)	See Section C.4.9 Study Component Acquisition Module Section C.7.2.1 General Study Module for description.
>Accession Number	(0008,0050)	See Section C.4.1 Study Relationship Module Section C.7.2.1 General Study Module for description.
>Referring Physician's Name	(0008,0090)	See Section C.3.4 Visit Admission Module for description.
>Name of Physician(s) Reading Study	(0008,1060)	See Section C.7.2.1 General Study Module for description.
>Admitting Diagnoses Description	(0008,1080)	See Section C.7.2.2 Patient Study Module for description.
>Series Number	(0020,0011)	See Section C.7.3.1 General Series Module for description.

Change PS3.3 Section C.17.2.8

C.17.2.8 Referenced Request Macro

Table C.17-3c defines the Attributes of a Requested Procedure that was associated with production of a Document.

Table C.17-3c. Referenced Request Macro Attributes

Attribute Name	Tag	Type	Attribute Description
Study Instance UID	(0020,000D)	1	Unique identifier for the Study.
Referenced Study Sequence	(0008,1110)	2	Uniquely identifies the Study SOP Instance . Zero or one Item shall be included in this Sequence. See Section 10.6.1.
>Include Table 10-11 "SOP Instance Reference Macro Attributes"			
...			

Change PS3.3 Section C.38.1

C.38.1 Inventory Module

Table C.38.1-1 specifies the Attributes of the Inventory Module.

The Attributes of the Information Entities of the Inventory Information Model (such as Study, Series, Patient, etc. - see Section 7.13.6) are hierarchically encoded within Sequence Attributes in this Module.

Table C.38.1-1. Inventory Module Attributes

Attribute Name	Tag	Type	Attribute Description
...			
>Retrieve AE Title	(0008,0054)	1C	AE Title from which this Study may be retrieved. Required if Study SOP Instances for this Study may be retrieved using a C-MOVE or C-GET based SOP Class (see PS3.4) and Study Access End Points Sequence (0008,0421) does not include Retrieve AE Title (0008,0054). May be present otherwise.
>Retrieve URL	(0008,1190)	1C	Base URI of the origin server to retrieve Study data through the Studies Service (see Section 10 "Studies Service and Resources" in PS3.18). Required if Study SOP Instances for this Study may be retrieved using the web-based Studies Service (see PS3.18) and Study Access End Points Sequence (0008,0421) does not include Retrieve URL (0008,1190). May be present otherwise.

Attribute Name	Tag	Type	Attribute Description
>Stored Instance Base URI	(0008,0407)	3	Base URI for accessing Study SOP Instances for this Study through a non-DICOM protocol. See Section C.38.1.2.6.
>Instance Availability	(0008,0056)	3	Specifies how rapidly the SOP Instances for this Study becomes available for transmission after a retrieval request. See Section C.38.1.2.9.
>File Set Access Sequence	(0008,0419)	3	Non-DICOM protocol methods to access the set of stored SOP Instances comprising the for this Study . Note "File Set" as used here may not be identical to the File-set concept defined in PS3.10 and used in Storage Media File-set ID (0088,0130). Only a single Item is permitted in this Sequence.
>>Folder Access URI	(0008,0408)	3	Access URI for a folder containing all SOP Instances for this Study. See Section C.38.1.2.7.
>>File Access URI	(0008,0409)	3	Access URI for a container file containing all SOP Instances for this Study. See Section C.38.1.2.7.
...			

Change PS3.3 Section F.5.1

F.5.1 Patient Directory Record Definition

The Directory Record is based on the specification of Section F.3. It is identified by a Directory Record Type of Value "PATIENT". Table F.5-1 lists the set of keys with their associated Types for such a Directory Record Type. The description of these keys may be found in the Modules related to ~~the Patient IOD or~~ the Patient IE of **ImageComposite** IODs. This Type of Directory Record may reference a Lower-Level Directory Entity that includes one or more Directory Records as defined in Table F.4-1.

Table F.5-1. Patient Keys

Key	Tag	Type	Attribute Description
Specific Character Set	(0008,0005)	1C	Required if an extended or replacement character set is used in one of the keys.
Patient's Name	(0010,0010)	2	
Patient ID	(0010,0020)	1	
Any other Attribute of the Patient IE Modules		3	

For a given File-set, the Patient ID shall be unique. This means that it shall not appear in different Patient Directory Records.

Change PS3.4 Section C.3.4

C.3.4 Additional Query/Retrieve Attributes

Some optional Attributes that may be used in Query/Retrieve Information Models that are not Attributes of an Information Object Definition and, therefore, are not defined in PS3.3. These Attributes are defined in Table C.3-1.

Table C.3-1. Additional Query/Retrieve Attributes

Attribute Name	Tag	Attribute Description
...		
Study Update DateTime	(0008,041F)	<p>DateTime of last update to Study metadata (e.g., Patient, Study or Procedure, Imaging Service Request, or Series Attributes) or to the set of SOP Instances in the Study.</p> <p>Note</p> <p>May also reflect DateTime of update to the storage location of Study SOP Instances for the Study if the SCP supports Attributes for stored SOP Instance access through a non-DICOM protocol (see Section C.6.4.1.3),</p>

Change PS3.4 Section F.2

F.2 Conformance Overview

The application-level services addressed by this Service Class Definition are specified via the following distinct SOP Classes:

- Modality Performed Procedure Step SOP Class
- Modality Performed Procedure Step Notification SOP Class
- Modality Performed Procedure Step Retrieve SOP Class

Each SOP Class operates on a subset of the Modality Performed Procedure Step IOD and specifies the Attributes, operations, notifications, and behavior applicable to the SOP Class. Conformance of Application Entities shall be defined by selecting one or more of the ~~Study and Study Component Management SOP and Meta~~ SOP Classes. For each SOP Class conformance requirements shall be specified in terms of the Service Class Provider (SCP) and the Service Class User (SCU).

Change PS3.4 Section F.7.2.1

F.7.2.1 Create Modality Performed Procedure Step SOP Instance

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

Note

The modality should inform the Information System as soon as possible that the performance of the Procedure Step has been started by sending the N-CREATE Service Request. This allows an SCP of the Modality Worklist SOP Class (if supported) to update the Modality Worklist. Some of the Attribute Values are already known at the beginning of the Procedure Step, they are required to be sent in the N-CREATE command. Other mandatory Attributes are known only at the end of the Performed Procedure Step, they are assigned a value in the N-SET command.

The same SOP Instance UID is shared by all three Modality Performed Procedure Step SOP Classes. This means that the SOP Instance created and set using the services of the Modality Performed Procedure Step SOP Class can be retrieved using its SOP Instance UID within the service of the Modality Performed Procedure Step Retrieve SOP Class. Changes in its state can be notified by using its SOP Instance UID within the service of the Modality Performed Procedure Step Notification SOP Class. The SOP Class UID specified in the DIMSE N-CREATE and N-SET request primitives shall be the UID of the Modality Performed Procedure Step SOP Class.

~~The Modality Performed Procedure Step SOP Instance UID shall not be used to identify a SOP Instance of the Study Component Service Class.~~

Change PS3.4 Section F.8.2.1

F.8.2.1 Get Performed Procedure Step Information

This operation allows an SCU to get information about a specific real-world Performed Procedure Step that is represented as a Modality Performed Procedure Step Retrieve SOP Instance by a Modality Performed Procedure Step Retrieve SCP. The operation is performed on a Modality Performed Procedure Step IOD. This operation shall be invoked through the DIMSE N-GET Service used in conjunction with the appropriate Modality Performed Procedure Step Retrieve SOP Instance.

The same SOP Instance UID is shared by all three Modality Performed Procedure Step SOP Classes. This means that the SOP Instance created and set using the services of the Modality Performed Procedure Step SOP Class can be retrieved using its SOP Instance UID within the service of the Modality Performed Procedure Step Retrieve SOP Class. Changes in its state can be notified by using its SOP Instance UID within the service of the Modality Performed Procedure Step Notification SOP Class. The SOP Class UID specified in the DIMSE N-GET request primitive shall be the UID of the Modality Performed Procedure Step Retrieve SOP Class.

~~The Modality Performed Procedure Retrieve Step SOP Instance UID shall not be used to identify a SOP Instance of the Study Component Service Class.~~

Note

An Application Entity may support the SCU role of the Modality Performed Procedure Step Retrieve SOP Class in order to obtain information about Performed Procedure Steps created by other Application Entities.

Change PS3.4 Section F.9.2.1

F.9.2.1 Receive Modality Performed Procedure Step Event Notification

This notification allows an SCU to receive from the SCP an unsolicited notification of a change in a Modality Performed Procedure Step SOP Instance. These notifications shall be invoked by the SCP through the use of the DIMSE N-EVENT-REPORT Service used in conjunction with the related Modality Performed Procedure Step SOP Instance.

The SCU shall return, via the N-EVENT-REPORT response primitive, the N-EVENT-REPORT Response Status Code applicable to the associated request. The SCU shall accept all Attributes included in any notification. This Service Class Specification places no requirements on what the SCU shall do as a result of receiving this information.

The same SOP Instance UID is shared by all three Modality Performed Procedure Step SOP Classes. This means that the SOP Instance created and set using the services of the Modality Performed Procedure Step SOP Class can be retrieved using its SOP Instance UID within the service of the Modality Performed Procedure Step Retrieve SOP Class. Changes in its state can be notified by using its SOP Instance UID within the request primitive of the Modality Performed Procedure Step Notification SOP Class.

~~The Modality Performed Procedure Step Notification SOP Instance UID shall not be used to identify a SOP Instance of the Study Component Service Class.~~