

DICOM Correction Item

Correction Number		CP-140 (Letter Ballot)
Log Summary: Remove redundant sequence item encoding descriptions		
Type of Modification	Name of Standard	
Correction	PS 3.3 1998	
Rationale for Correction		
<p>Some Sequence attributes contain the description "encoded as a sequence of items" usually followed by a list of attribute tags. This especially applies to referenced image, curve and overlay sequences but is also used elsewhere. The presence of this description is redundant with the attributes that are described in the succeeding rows of the module tables.</p> <p>Most other sequence descriptions do not include this redundant, confusing and inconsistent description.</p>		
Sections of documents affected		
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Correction Wording:		
Remove the struck-out bold text from the tables as indicated:		

**Table C.6-6
INTERPRETATION APPROVAL MODULE ATTRIBUTES**

Attribute Name	Tag	Attribute Description
Interpretation Approver Sequence	(4008,0111)	Identifies the approvers of the interpretation. Zero or more Items may be included in this Sequence. Encoded as a sequence of items: (4008,0112), (4008,0113), and (4008,0114).
>Interpretation Approval Date	(4008,0112)	Date the report or amendment was approved.
>Interpretation Approval Time	(4008,0113)	Time the report or amendment was approved.
>Physicians Approving Interpretation	(4008,0114)	Physician approving the report or amendment.
Results Distribution List Sequence	(4008,0118)	Names and addresses of persons to receive a copy of the report and amendments. Zero or more Items may be included in this Sequence. Encoded as a sequence of items: (4008,0119) and (4008,011A).
>Distribution Name	(4008,0119)	Name of one of the persons to receive a copy of the report and amendments.
>Distribution Address	(4008,011A)	Address of one of the persons to receive a copy of the report and amendments.

**Table C.7-1
PATIENT MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Referenced Patient Sequence	(0008,1120)	3	A sequence which provides reference to a Patient SOP Class/Instance pair. Only a single Item shall be permitted in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Patient Sequence(0008,1120) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Patient Sequence(0008,1120) is sent.

Table C.7-2
GENERAL STUDY MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Referenced Study Sequence	(0008,1110)	3	A sequence which provides reference to a Study SOP Class/Instance pair. The sequence may have zero or more Items. Encoded as sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Study Sequence (0008,1110) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Study Sequence (0008,1110) is sent.

Table C.7-7
GENERAL IMAGE MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Referenced Image Sequence	(0008,1140)	3	A sequence which provides reference to a set of Image SOP Class/Instance identifying other images significantly related to this image (e.g. post-localizer CT image) Encoded as sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Image Sequence (0008,1140) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Reference Image Sequence (0008,1140) is sent.
Source Image Sequence	(0008,2112)	3	A Sequence which identifies the set of Image SOP Class/Instance pairs of the Images which were used to derive this Image. Zero or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155) See C.7.6.1.1.4 for further explanation.
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Source Image Sequence (0008,2112) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Source Image Sequence (0008,2112) is sent.

**Table C.8-9
NM IMAGE MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Referenced Overlay Sequence	(0008,1130)	3	A sequence which provides reference to a set of SOP Class/Instance pairs which are related independent Overlays. Uniquely identifies Overlays significantly related to this Image. Encoded as sequence of items: (0008,1150) and (0008,1155). Zero or more Items may be included in this sequence.
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if a sequence Item is present.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if a sequence Item is present.
Referenced Curve Sequence	(0008,1145)	3	A sequence which provides reference to a set of SOP Class/Instance pairs which are related independent Curves. Uniquely identifies Curves significantly related to this Image. Encoded as sequence of items: (0008,1150) and (0008,1155). Zero or more Items may be included in this sequence.
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if a sequence Item is present.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if a sequence Item is present.

**Table C.8-18
US IMAGE MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Referenced Overlay Sequence	(0008,1130)	3	A Sequence which provides reference to a set of SOP Class/Instance pairs which are related independent Overlays. Uniquely identifies Overlays significantly related to this Image. Zero or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Overlay Sequence (0008,1130) is sent.

>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Reference Overlay Sequence (0008,1130) is sent.
Referenced Curve Sequence	(0008,1145)	3	A sequence which provides reference to a set of SOP Class/Instance pairs which are related independent Curves. Uniquely identifies Curves significantly related to this Image. Encoded as sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Curve Sequence (0008,1145) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Reference Curve Sequence (0008,1145) is sent.

Table C.8-26
X-Ray Image Module Attributes

Attribute Name	Tag	Type	Attribute Description
Reference Image Sequence	(0008,1140)	1C	A sequence which provides reference to a set of Image SOP Class/Instance identifying other images significantly related to this image. Shall be used to relate each plane to the corresponding plane if Image Type Value 3 is BIPLANE A or BIPLANE B. Encoded as a sequence of items: (0008,1150) and (0008,1155). When relating to the corresponding plane of a Biplane acquisition, only a single item shall be present.
> Reference SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Image Sequence (0008,1140) is present.
> Reference SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Image Sequence (0008,1140) is present.

Table C.8.9.4-1 - PET Image

Attribute Name	Tag	Type	Attribute Description
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Referenced Overlay Sequence	(0008,1130)	3	A sequence which provides reference to a set of SOP Class/Instance pairs which are related independent Overlays. Uniquely identifies Overlays significantly related to this Image. Encoded as a sequence of items: (0008,1150) and (0008,1155). Zero or more Items may be included in this sequence.
> Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Overlay Sequence (0008,1130) is sent.
> Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Overlay Sequence (0008,1130) is sent.
Referenced Curve Sequence	(0008,1145)	3	A sequence which provides reference to a set of SOP Class/Instance pairs which are related independent Curves. Uniquely identifies Curves significantly related to this Image. Encoded as a sequence of items: (0008,1150) and (0008,1155). Zero or more Items may be included in this sequence.
> Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Curve Sequence (0008,1145) is sent.
> Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Curve Sequence (0008,1145) is sent.

**Table C.9-1
OVERLAY IDENTIFICATION MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
Referenced Image Sequence	(0008,1140)	3	A Sequence which provides reference to a set of Image SOP Class/Instance pairs. Uniquely identifies the images significantly related to this overlay. One or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155).
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Image Sequence (0008,1140) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Reference Image Sequence (0008,1140) is sent.

Table C.10-1
CURVE IDENTIFICATION MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Referenced Image Sequence	(0008,1140)	3	A Sequence which provides reference to a set of Image SOP Class/Instance pairs. Uniquely identifies the images significantly related to this Curve. One or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155).
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Image Sequence (0008,1140) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Reference Image Sequence (0008,1140) is sent.
Referenced Overlay Sequence	(0008,1130)	3	A Sequence which provides reference to a set of SOP Class/Instance pairs which are related independent Overlays. Uniquely identifies Overlays significantly related to this Curve. Zero or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Overlay Sequence (0008,1130) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Reference Overlay Sequence (0008,1130) is sent.
Referenced Curve Sequence	(0008,1145)	3	A Sequence which provides reference to a set of Curve SOP Class/Instance pairs. Uniquely identifies the curves significantly related to this curve. Zero or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Curve Sequence (0008,1145) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Curve Sequence (0008,1145) is sent.

Table C.10-3
AUDIO MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Referenced Image Sequence	(0008,1140)	3	A Sequence which provides reference to a set of Image SOP Class/Instance pairs to which this audio applies. One or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155).
>Referenced SOP Class UID	(0008,1150)	1C	Uniquely identifies the referenced SOP Class. Required if Referenced Image Sequence (0008,1140) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Uniquely identifies the referenced SOP Instance. Required if Referenced Image Sequence (0008,1140) is sent.

Table C.11-3
LUT Identification Module Attributes

Attribute Name	Tag	Type	Attribute Description
Referenced Image Sequence	(0008,1140)	3	A Sequence which provides reference to a set of Image SOP Class/Instance pairs to which this Look Up Table applies. One or more Items may be included in this Sequence. Encoded as sequence of items: (0008,1150) and (0008,1155).
>Referenced SOP Class UID	(0008,1150)	1C	Required if Referenced Image Sequence (0008,1140) is sent.
>Referenced SOP Instance UID	(0008,1155)	1C	Required if Reference Image Sequence (0008,1140) is sent.

Table C.13-2
BASIC FILM SESSION RELATIONSHIP MODULE

Attribute Name	Tag	Attribute Description
Referenced Film Box Sequence	(2000,0500)	A Sequence which provides references to a set of Film Box SOP Class/Instance pairs. Zero or more Items may be included in this Sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155).
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
Referenced Presentation LUT Sequence	(2050,0500)	A sequence that provides references to a Presentation LUT related SOP Class/Instance pairs. Only a single Item shall be included in this sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155)

>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.

**Table C.13-4
BASIC FILM BOX RELATIONSHIP MODULE**

Attribute Name	Tag	Attribute Description
Referenced Film Session Sequence	(2010,0500)	A sequence which provides references to a Film Session SOP Class/Instance pairs. Only a single Item shall be permitted in this Sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
Referenced Image Box Sequence	(2010,0510)	A sequence which provides references to a set of Image Box SOP Class/Instance pairs. One or more Items may be included in this Sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
Referenced Basic Annotation Box Sequence	(2010,0520)	A Sequence which provides references to a set of Basic Annotation Box SOP Class/Instance pairs. Zero or more Items may be included in this Sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155).
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
Referenced Presentation LUT Sequence	(2050,0500)	A sequence which provides references to a Presentation LUT related SOP Class/Instance pairs. Only a single Item shall be included in this sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.

**Table C.13-6
IMAGE BOX RELATIONSHIP MODULE**

Attribute Name	Tag	Attribute Description
Referenced Image Sequence	(0008,1140)	A sequence which provides references to an Image SOP Class/Instance pair and a specific frame number in multi-frame instances. Only a single Item shall be permitted in this Sequence. Encoded as a sequence of items: (0008,1150), (0008,1155), and (0008,1160)

>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
>Referenced Frame Number	(0008,1160)	Identifies the frame in the multi-frame image referenced by this Image Sequence. Frame number shall be increasing sequential order beginning with the value 1.
Referenced Image Overlay Box Sequence	(2020,0130)	A sequence which provides references to an Image Overlay Box SOP Class/Instance pair and a specific frame number in multi-frame instances. Zero or one Item may be included in this Sequence. Encoded as a sequence of items: (0008,1150), (0008,1155), and (0008,1160)
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
>Referenced Frame Number	(0008,1160)	Identifies the frame in the multi-frame overlay(s) referenced by the Overlay Plane Sequence that is referenced by this Image Overlay Box Sequence. Frame number shall be increasing sequential order beginning with the value 1.
Referenced VOI LUT Sequence	(2020,0140)	A sequence which provides reference to a VOI LUT SOP Class/Instance pair. Only a single Item shall be permitted in this Sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.
Referenced Presentation LUT Sequence	(2050,0500)	A sequence which provides references to a Presentation LUT related SOP Class/Instance pairs. Only a single Item shall be included in this sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.

Table C.13-10
IMAGE OVERLAY BOX PRESENTATION MODULE

Attribute Name	Tag	Attribute Description
Referenced Overlay Plane Sequence	(2040,0010)	A sequence which provides references to a set of image overlay planes. Zero or more Items may be included in this Sequence. Encoded as a sequence of items: (0008,1150), (0008,1155), and (2040,0011).
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class that describes the overlay plane.

>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance that contains the overlay plane.
>Referenced Overlay Plane Groups	(2040,0011)	Uniquely identifies the Overlay Plane Groups (60xx) within the referenced SOP Instance that contains the Overlay Plane description. See C.13.10.1 for further description.

Table C.13-11
IMAGE OVERLAY BOX RELATIONSHIP MODULE

Attribute Name	Tag	Attribute Description
Referenced Image Box Sequence	(2010,0510)	A sequence which provides reference to an Image Box SOP Class/ Instance pair. Only a single Item shall be permitted in this Sequence. Encoded as a sequence of items: (0008,1150) and (0008,1155)
>Referenced SOP Class UID	(0008,1150)	Uniquely identifies the referenced SOP Class.
>Referenced SOP Instance UID	(0008,1155)	Uniquely identifies the referenced SOP Instance.

Table C.16-1
Printer Characteristics Module

Attribute Name	Tag	Type	Description
Print Management Capabilities Sequence	(2130,0010)	1	A list of Print Management SOP Classes (e.g. Film Session SOP Class, Basic Annotation Box) and Image Storage SOP Classes (e.g. US Image, Hardcopy Grayscale Image) that the Stored Print IOD contains or refers to. One or more Items shall be included in this sequence. Encoded as a sequence of items (0008,1150)
>Referenced SOP Class UID	(0008,1150)	1	SOP Class UID of the SOP Class, that the Stored Print IOD contains or refers to.
Printer Characteristics Sequence	(2130,0015)	2	Printer Characteristics information. Only valid if film session/box has been printed. One Item shall be included in this sequence. Encoded as a sequence of items.
>Creation Date	(2100,0040)	3	Date of print job creation
>Creation Time	(2100,0050)	3	Time of print job creation
>Originator	(2100,0070)	2	DICOM Application Entity Title that issued the print operation
>Destination	(2100,0140)	2	DICOM Application Entity Title that performed the print operation
>Printer Name	(2110,0030)	3	User defined name identifying the printer.

>Manufacturer	(0008,0070)	3	Manufacturer of the printer.
>Manufacturer Model Name	(0008,1090)	3	Manufacturer Model Name of the printer.
>Device Serial Number	(0018,1000)	3	Manufacturer's serial number of the printer.
>Software Version	(0018,1020)	3	Manufacturer's designation of software version of the printer.
>Date of Last Calibration	(0018,1200)	3	Date when the printer was last calibrated.
>Time of Last Calibration	(0018,1201)	3	Time when the printer was last calibrated.

**Table C.16-3
Image Box List Module**

Attribute Name	Tag	Type	Description
Image Box Content Sequence	(2130,0040)	1	The content of the Image Box SOP Instance. One or more Items shall be included in this sequence. Encoded as a sequence of items
> SOP Instance UID	(0008,0018)	1C	SOP Instance UID of the contained Image Box SOP Class. Required if Sequence is sent
> Image Position	(2020,0010)	1	See C.13.5 for description.
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**Table C.16-4
Annotation List Module**

Attribute Name	Tag	Type	Description
Annotation Content Sequence	(2130,0050)	3	The content of the Annotation SOP Instance. Zero or more Items shall be included in this sequence. Encoded as a sequence of items.
>SOP Instance UID	(0008,0018)	1C	SOP Instance UID of the contained Annotation SOP Class. Required if Sequence is sent.
>Annotation Position	(2030,0010)	1C	See C.13.7 for description. Required if the Annotation Content Sequence is sent.
>Text String	(2030,0020)	1C	See C.13.7 for description. Required if the Annotation Content Sequence is sent.

**Table C.16-5
Image Overlay Box List Module**

Attribute Name	Tag	Type	Description
Image Overlay Box Content Sequence	(2130,0060)	3	The content of the Image Overlay Box SOP Instance. If sent, one or more Items shall be included in this sequence. Encoded as a sequence of items.

>SOP Instance UID	(0008,0018)	1C	SOP Instance UID of the contained Image Overlay Box SOP Class. Required if Sequence is sent.
>Referenced Overlay Plane Sequence	(2040,0010)	1C	See C.13.10.1 for description. Overlay planes encoded as part of a Standalone Overlay IOD are not permitted. Required if Sequence is sent.
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Table C.16-6
Presentation LUT List Module

Attribute Name	Tag	Type	Description
Presentation LUT Content Sequence	(2130,0080)	3	The content of the Presentation LUT SOP Instance. If sent, one or more Items shall be included in this sequence. Encoded as a sequence of items.
>SOP Instance UID	(0008,0018)	1C	SOP Instance UID of the contained Presentation LUT SOP Class. Required if Sequence is sent
>Presentation LUT Sequence	(2050,0010)	1C	See C.11.3 for description; Required if Presentation LUT Shape (2050,0020) is not present. Not allowed otherwise.
>>LUT Descriptor	(0028,3002)	1C	See C.11.3 for description; Required if Presentation LUT Sequence is sent.
>>LUT Explanation	(0028,3003)	3	See C.11.3 for description;
>>LUT Data	(0028,3006)	1C	See C.11.3 for description; Required if Presentation LUT Sequence is sent.
>Presentation LUT Shape	(2050,0020)	1C	See C.11.3 for description; Required if Presentation LUT Sequence (2050,0010) is not present. Not allowed otherwise. SCPs shall support the Enumerated Values IDENTITY and LIN OD