

DICOM Correction Item

Correction Number		CP 753
Log Summary: Correct Concatenation UID element number		
Type of Modification	Name of Standard	
Correction	PS 3.3 2007	
Rationale for Correction		
Concatenation UID element number is inconsistent in PS 3.3		
Sections of documents affected		
PS 3.3 7.5.1, C.7.6.16		
Correction Wording:		

PS 3.3: Correct incorrect element number:

7.5.1 **CONCATENATION**

For implementation specific reasons (such as practical limits on the maximum size of an individual SOP Instance) the content of a multi-frame image may need to be split into more than one SOP Instance. These SOP Instances together form a Concatenation, which is a group of SOP Instances within a Series that is uniquely identified by the Concatenation UID (0020,**9133 9161**).

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C.7.6.16 Multi-frame Functional Groups Module

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**Table C.7.6.16-1
 MULTI-FRAME FUNCTIONAL GROUPS MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
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Concatenation Frame Offset Number	(0020,9228)	1C	Offset of the first frame in a multi-frame image of a concatenation. Logical frame numbers in a concatenation can be used across all its SOP instances. This offset can be applied to the implicit frame number to find the logical frame number in a concatenation. The offset is numbered from zero; i.e., the instance of a concatenation that begins with the first frame of the concatenation has a Concatenation Frame Offset Number (0020,9228) of zero. Required if Concatenation UID (0020,9161) is present.
Representative Frame Number	(0028,6010)	3	The frame number selected for use as a pictorial representation (e.g. icon) of the

			multi-frame Image.
Concatenation UID	(0020,9161)	1C	Identifier of all SOP Instances that belong to the same concatenation. Required if a group of multi-frame image SOP Instances within a Series are part of a Concatenation.
In-concatenation Number	(0020,9162)	1C	Identifier for one SOP Instance belonging to a concatenation. See C.7.6.16.2.2.4 for further specification. The first instance in a concatenation (that with the lowest Concatenation Frame Offset Number (0020,9228) value) shall have an In-concatenation Number (0020,9162) value of 1, and subsequent instances shall have values monotonically increasing by 1. Required if Concatenation UID (0020,9161) is present.
In-concatenation Total Number	(0020,9163)	3	The number of SOP Instances sharing the same Concatenation UID.

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C.7.6.16.2.2.4 Concatenations and Stacks

Due to implementation specific reasons (such as maximum object size) the information of a multi-frame image may be split into more than one SOP Instance. These SOP Instances form together a Concatenation. This is a group of SOP Instances within a Series that is uniquely identified by the Concatenation UID (0020,~~9133~~ **9161**).

The Dimension Index Sequence (0020,9222) for each SOP Instance with the same Concatenation UID (0020,~~9133~~ **9161**) shall contain exactly the same tags and values.

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Stacks describe application-specific groups of frames that have a geometric relationship. Stacks have a Stack ID (0020,9056) that contains a descriptive name that identifies the stack. A Stack ID (0020,9056) may be re-used in another SOP Instance even outside a concatenation. The value of Stack ID (0020,9056) is unique within the scope of a particular Dimension Organization UID (0020,9164) if present, otherwise it is unique within in the scope of a particular Concatenation UID (0020,~~9133~~ **9161**). See Figure C7.6.16-3 for an example.

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In order to allow interoperable operations on stacks, 2 different frames with the same Stack ID (0020,9056) can only have the same In-Stack Position Number (0020,9057) if they have the same values for the following attributes:

1. Dimension Organization UID (0020,9164) or if absent Concatenation UID (0020,~~9133~~**9161**) to qualify the Stack ID
2. Image Position (Patient) (0020,0032)
3. Image Orientation (Patient) (0020,0037)
4. Rows (0028,0010) * Pixel Spacing (0028,0030) (= field of view in the row direction)
5. Columns (0028,0011) * Pixel Spacing (0028,0030) (= field of view in the column direction)
6. Slice Thickness (0018,0050)

PS 3.6: For reference, here is the correct element number in the data dictionary:

(0020,9161) Concatenation UID

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