

DICOM Correction Item

Correction Number	CP 745
Log Summary: Transfer Syntax UID not allowed outside file meta information	
Type of Modification	Name of Standard
Clarification	PS 3.5, 3.10 2007
Rationale for Correction The group 0002 data elements, including Transfer Syntax UID (0002, 0010) are intended only for use in the file meta information at the beginning of Part 10 files, where they are used to specify the manner in which the dataset is encoded. However, it is conceivable that such attributes could also be included nested within sequence items, perhaps for the nefarious intent of implying a change in the encoding of subsequent data elements within that sequence, such as Pixel Data. This would be a significant additional and unanticipated burden on parsers and toolkits, were this interpretation to be allowed.	
Sections of documents affected PS 3.5 7.5.1 PS 3.10 7.1	
Correction Wording:	

Amend PS 3.5 7.5.1 to forbid group 0002 elements within sequence items:

7.5.1 ITEM ENCODING RULES

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Each Item Value shall contain a DICOM Data Set composed of Data Elements. Within the context of each Item, these Data Elements shall be ordered by increasing Data Element Tag value and appear only once (as Data Set is defined in Section 7.1). There is no relationship between the ordering of the Data Elements contained within an Item and the ordering of the Data Element Tag of SQ Value Representation that contains that Item. One or more Data Elements in an Item may be of Value Representation SQ, thus allowing for recursion.

Data Elements with a group of 0000, 0002, 0004 and 0006 shall not be present within Sequence Items.

Note: The use of Transfer Syntax UID (0002,0010) in particular is forbidden, since were it to differ from the Transfer Syntax of the enclosing dataset then a change in encoding would be implied, which is not allowed.

Section 7.8 specifies rules for incorporating Private Data Elements into Sequence Items.

Amend PS 3.10 7.1 to restrict group 0002 elements use to meta information header:

7.1 DICOM FILE META INFORMATION

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Values of all Tags (0002,xxxx) are reserved for use by this Standard and later versions of DICOM. **Data Elements with a group of 0002 shall not be used in datasets other than within the File Meta Information.**

Note: PS 3.5 specifies that Elements with Tags (0001,xxxx), (0003,xxxx), (0005,xxxx), and (0007,xxxx) shall not be used.

Amend PS 3.10 7.2 to note that transfer syntax of data set does not change:

7.2 DATA SET ENCAPSULATION

The Transfer Syntax used to encode the Data Set shall be the one identified by the Transfer Syntax UID of the DICOM File Meta Information.

Notes: **1. The Transfer Syntax used to encode the Data Set cannot be changed within the Data Set; i.e., the Transfer Syntax UID Data Element may not occur anywhere within the Data Set, e.g., nested within a Sequence Item.**

2. A DICOM Data Set does not include its total length. The end of the file indication provided by the DICOM File Service (see Section 8.4) is the only indication of the end of the Data Set.

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