

DICOM Correction Proposal

STATUS	Final Text
Date of Last Update	2011/08/15
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Correction Number	CP-1110
Log Summary: Encoding undefined length empty items and sequences	
Name of Standard	PS 3.5 - 2011
Rationale for Correction	For undefined length item and sequences there is no explicit specification how an empty item or sequence has to be encoded. This CP proposes to specify the encoding.
Sections of documents affected	PS 3.5 Section 7.5.1
Correction Wording:	

7.5.1 ITEM ENCODING RULES

Each Item of a Data Element of Value Representation SQ shall be encoded as a DICOM Standard Data Element with a specific Data Element Tag of Value (FFFE,E000). The Item Tag is followed by a 4 byte Item Length field encoded in one of the following two ways:

- a) Explicit Length: The number of bytes (even) contained in the Sequence Item Value (following but not including the Item Length Field) is encoded as a 32-bit unsigned integer value (see Section 7.1). This length shall include the total length of all Data Elements conveyed by this Item. This Item Length shall be equal to 00000000H if the Item contains no Data Set.
- b) Undefined Length: The Item Length Field shall contain the value FFFFFFFFH to indicate an undefined Item length. It shall be used in conjunction with an Item Delimitation Data Element. This Item Delimitation Data Element has a Data Element Tag of (FFFE,E00D) and shall follow the Data Elements encapsulated in the Item. No Value shall be present in the Item Delimitation Data Element and its Length shall be 00000000H. **An Item containing no Data Set is encoded by a Item Delimitation Data Element only.**

7.5.2 DELIMITATION OF THE SEQUENCE OF ITEMS

Delimitation of the last Item of a Sequence of Items, encapsulated in a Data Element of Value Representation SQ, shall be in one of the two following ways:

- a) Explicit Length: The number of bytes (even) contained in the Data Element Value (following but not including the Data Element Length Field) is encoded as a 32-bit unsigned integer value (see Section 7.1). This length shall include the total length

resulting from the sequence of zero or more items conveyed by this Data Element. This Data Element Length shall be equal to 00000000H if the sequence of Items contains zero Items.

- b) Undefined Length: The Data Element Length Field shall contain a Value FFFFFFFFH to indicate an Undefined Sequence length. It shall be used in conjunction with a Sequence Delimitation Item. A Sequence Delimitation Item shall be included after the last Item in the sequence. Its Item Tag shall be (FFFE,E0DD) with an Item Length of 00000000H. No Value shall be present. **An sequence containing zero Items is encoded by a Sequence Delimitation Item only.**