

DICOM Correction Item

Correction Number	CP-528
Log Summary: Encoding of empty Functional Group Items	
Type of Modification	Name of Standard
Clarification	PS 3.3 - 2004
Rationale for Correction <p>Enhanced MR, MR-Spectroscopy and CT contain Functional Groups that describe the plane orientation and positioning. These Functional Groups are mandatory (M). In a number of cases the result may be an empty sequence because the sequence must be provided, but there are no items that contains values.</p> <p>For example: The Plane Position and Plane Orientation Macro contain both a Type 1 sequence with a single attribute. The attribute itself is Type 1C with a certain condition. If the condition is not met, the attribute is not available, which results in an empty sequence.</p> <p>Some implementers have been confused and rather than sending empty Sequences, have sent Sequences containing empty Items, which is incorrect since the empty item then violates the constraints on the mandatory attributes defined for such Items.</p> <p>Though the standard is unambiguous in this regard, to prevent confusion by implementers a note is added that explains this situation in addition to an already existing note for the Shared and Per-Frame Functional Group Sequence.</p>	
Sections of documents affected PS 3.3 Section C.7.6.16.1.1	
Correction Wording:	

C.7.6.16.1.1 Functional Group

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- Notes:
1. In the case of a SOP Instance containing a single frame, some Functional Group Macros may be contained in the Shared Functional Groups Sequence (5200,9229) and others in the one Item of the Per-frame Functional Groups Sequence (5200,9230).
 2. Even if there are no Functional Group Macros in the Per-frame Functional Groups Sequence (0008,9230) an empty Item is encoded for every frame.
 - 3. It may happen that a mandatory Functional Group Macro Item containing no values is required in either the Shared Functional Groups Sequence (5200,9229) or the Per-frame Functional Groups Sequence (5200,9230). In that case the Functional Group Macro is encoded as an empty Sequence (i.e. a sequence of zero length or a sequence with undefined length with only an end of sequence delimiter; see PS 3.5).**