1	Status	Letter Ballot
2	Date of Last Update	2024/03/21
3	Person Assigned	David Clunie
4		mailto:dclunie@dclunie.com
5	Submitter Name	David Clunie
6		mailto:dclunie@dclunie.com
7	Submission Date	2023/10/22

8	Correction Number CP-2362
9	Log Summary: Clarify the content of Extended Offset Table present in Concatenation
10	Name of Standard
11	PS3.3
12	Rationale for Correction:
13 14	When CP 1818 added Extended Offset tables for large compressed images that may have more frames than fit in the Basic Offset Table, the behavior when split into Instances of Concatenations was not specified.
15	Further, the need for the offset and length table values to be different in each instance was not recognized.
16 17 18	This may be obvious, since it cannot really be otherwise (there is no mechanism to describe byte offsets to other instances than the current instance, and there would be no reason to replicate offsets interpretable only in other instances, and the size of a single replicated table would be large), but it should be stated explicitly to avoid confusion.
19	Correction Wording:

1   *Amend DICOM PS3.3 as follows (changes to existing text are bold and __underlined__ for additions and ~~struckthrough~~ for removals):*

2   C.7.6.3 Image Pixel Module

3   **Table C.7-11a. Image Pixel Module Attributes**

Attribute Name	Tag	Type	Attribute Description
Extended Offset Table	(7FE0,0001)	3	Byte offsets of the Frames in the Sequence of Items in Encapsulated Pixel Data encoded in Pixel Data (7FE0,0010). See Section C.7.6.3.1.8. May only be present when: • Pixel Data (7FE0,0010) is present, and the Transfer Syntax uses Encapsulated Pixel Data, and • the Transfer Syntax encodes Frames in separate Fragments, and • the Basic Offset Table in the first Item is not present (its Item has zero length), and • each Frame is entirely contained within one Fragment. **Note** 1. Unlike a Basic Offset Table, an Extended Offset Table**, if the Attribute is present,** is not permitted to be empty. 2. **If this Instance is part of a Concatenation, only the offset and lengths of the frames encoded in the Pixel Data (7FE0,0010) of this Instance are indexed in the Extended Offset Table (7FE0,0001) and Extended Offset Table Lengths (7FE0,0002) in this Instance, not those of the entire Concatenation. I.e., the Values of these two Attributes are specific to each Instance. See also Section C.7.6.16.2.2.4.**
Extended Offset Table Lengths	(7FE0,0002)	1C	Byte lengths of the Frames in the Sequence of Items in Encapsulated Pixel Data encoded in Pixel Data (7FE0,0010). See Section C.7.6.3.1.8. Required if Extended Offset Table (7FE0,0001) is present and every frame is encoded as a single fragment. **Note** The length information is not sent when there are multiple fragments per frame, since it is necessary to assemble the frame from fragments with delimiters rather than assuming a single contiguous span of bytes.

32   C.7.6.3.1 Image Pixel Module Attribute Descriptions

33   C.7.6.3.1.8 Extended Offset Table

34   The Extended Offset Table (7FE0,0001) Value shall contain byte offsets to the first byte of the Item Tag of the first fragment for every
35   frame in the Pixel Data Sequence **of this Instance**.

36   The byte offsets are measured from the first byte of the first Item Tag following the empty (zero length) Basic Offset Table item, i.e.,
37   the Item Tag of the first fragment of the first frame.

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 Concatenation UID (0020,9161).

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

In a Concatenation the Dimension Index Sequence (0020,9222) Items of the Shared Functional Groups (5200,9229) shall be identical and have the same values for all individual SOP Instances. The Items of the Per-frame Functional Groups (5200,9230) shall be identical for all individual SOP Instances but the values may change per frame. For all other Attributes of all the Modules of the IOD, the same Attributes shall be present and the values shall be identical, with the exception of the following Attributes:

• Number of Frames (0028,0008)

• Concatenation Frame Offset Number (0020,9228)

• In-concatenation Number (0020,9162)

• SOP Instance UID (0008,0018)

• Instance Creation Time (0008,0013)

• **Extended Offset Table (7FE0,0001)**

• **Extended Offset Table Lengths (7FE0,0002)**

> **Note**
>
> The intent of Concatenations is to split what might have been encoded in a single SOP Instance into smaller fragments for more convenient storage or transmission. All the multiple SOP Instances of a Concatenation should be able to be assembled into a valid single SOP Instance. Hence it is not permitted to change such Attributes as Photometric Interpretation (0028,0004), Rows (0028,0010), Columns (0028,0011), etc. **Assembly (into a single SOP Instance) of multiple SOP Instances of a Concatenation that contained Extended Offset Tables would require regeneration of new offsets and lengths in Extended Offset Table (7FE0,0001) and Extended Offset Table Lengths (7FE0,0002), or their omission, or the inclusion of the information in the Basic Offset Table if it is of sufficient size.**

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