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Correction Number CP-2026

Log Summary: Clarify private block assignment

Name of Standard

PS3.5 2020d

Rationale for Correction:

The description of required private creators states that the first unassigned creator in a group be used, i.e., creator 0x0010 identifying block 0x1000; there is no reason to require this and it poses a problem when blocks are later entirely removed, e.g., during de-identification.

Reword accordingly and clarify with some de-identification use cases.

Correction Wording:
Amend PS3.5 as follows (changes to existing text are bold and underlined for additions and struckthrough for removals):

7.8.1 Private Data Element Tags

It is possible that multiple implementers may define Private Elements with the same (odd) group number. To avoid conflicts, Private Elements shall be assigned Private Data Element Tags according to the following rules.

a. Private Creator Data Elements numbered (gggg,0010-00FF) (gggg is odd) shall be used to reserve a block of Elements with Group Number gggg for use by an individual implementer. The implementer shall insert an identification code in the first unused (unassigned) Element in this series to reserve a block of Private Elements. The VR of the private identification code shall be LO (Long String) and the VM shall be equal to 1. A Private Creator identifier may be used only once within a Group; reserving multiple blocks of Elements in the same Group with the same identifier is not allowed. The Private Creator Data Elements shall only contain characters from the Default Character Repertoire and not an Extended or Replacement Character Repertoire, even though the LO VR is one that is affected by the Specific Character Set (0008,0005).

Note

i. If an implementer needs multiple repetitions of a private element, a private Sequence attribute (see ???) may be used to contain these multiple items.

ii. An implementer may use the same Private Creator identifier for multiple Groups.

iii. The first Private Creator Data Element does not have to be (gggg,0010), nor do they have to be sequentially assigned. In particular, if a block of Private Data Elements is entirely removed along with its Private Creator Data Element, such as during de-identification, the other private blocks do not need to be renumbered.

iv. A Private Creator Data Element may be present even though no corresponding Private Data Elements are used. In particular, if a block of Private Data Elements is entirely removed, such as during de-identification, the corresponding Private Creator Data Element does not need to be removed, though it may be.

b. Private Creator Data Element (gggg,0010), is a Type 1 Data Element that required in order to identify the implementer reserving elements (gggg,1000-10FF), if present. Private Creator Data Element (gggg,0011) identifies the implementer reserving elements required in order to identify elements (gggg,1100-11FF) if present, and so on, until through Private Creator Data Element (gggg,00FF), which identifies the implementer reserving elements (gggg,FF00-FFFF), if present.

c. Encoders of Private Data Elements shall be able to dynamically assign private data to any available (unreserved) block(s) within the Private group, and specify this assignment through the blocks corresponding Private Creator Data Element(s). Decoders of Private Data shall be able to accept reserved blocks with a given Private Creator identification code at any position within the Private group specified by the blocks corresponding Private Creator Data Element.

Note

1. Older versions of this Standard described shadow groups. These were groups with a group number one greater than the standard groups. Elimination of conflicts in Private Data Element Tags have made this distinction obsolete and this terminology has been retired.

2. Older versions of this Standard specified private group element numbers (gggg,10FF-7FFF) reserved for manufacturers and private group element numbers (gggg, 8100-FFFF) reserved for users. Elimination of conflicts in Private Data Element Tags has made this distinction obsolete and this specification has been retired.

3. The requirements of this section do not allow any use of elements in the ranges (gggg,0001-000F) and (gggg,0100-0FFF) where gggg is odd.

d. Elements with Tags (0001,xxxx), (0003,xxxx), (0005,xxxx), (0007,xxxx) and (FFFF,xxxx) shall not be used.

e. Whether or not Private Data Elements contain identifying information related to de-identification is defined by the Private Data Element Characteristics Sequence (0008,0300). See PS3.3 Section C.12.1.

f. Data Elements numbered (gggg,0000), where gggg is odd, were Group Length Elements, which have been retired, See ???.

Since each Item within a sequence is a self contained Data Set (see ??? on the nesting of Data Sets via Sequences of Items), any Item that contains Private Data shall also have Private Creator Data Elements reserving blocks of Elements for those Private
Data Elements. The scope of the reservation is just within the Item. Items do not inherit the Private Data Element reservations made by Private Creator Data Elements in the Data Set in which the Item is nested.

Note

1. If a sequence is itself a Private Data Element and the Items within the sequence also have Private Data Elements, then there will be Private Creator Data Elements both outside the sequence and within the sequence Items.

2. Different Items may reserve the same block of Private Data Elements for different private creators. This is necessary to allow the nesting of Data Sets collected from multiple sources into folders.

3. The recommended convention for referencing a Private Data Element is (gggg,xx,ee,”pcde”), where gggg is the group number, xx is the string “xx”, ee is the element number within a reserved block, and pcde is the quoted value of the Private Creator Data Element that reserved the block, e.g., (0029,xx43,”Acme_CT_Parameters”). Alternatively, when a block of Private Data Elements is being described, one may factor out the description of the Private Creator Data Element value, e.g., Private Creator Data Element (0029,00xx) = "Acme_CT_Parameters", and (0029,xx43), (0029,xx44), etc.

7.8.2 Encoding of Private Elements

The Value Representations used for Private Data Elements shall be the same as those VRs specified for Standard Data Elements in ???. The encoding shall conform to the requirements for those VRs and shall be in accordance with the negotiated Transfer Syntax. A Private Data Element with SQ VR (a Private Data Sequence) may include Items with both Standard and Private Data Elements. Standard Data Elements used within a Private Data Sequence shall use the VRs as defined in PS3.6 for those data elements.

The semantics of Standard Data Elements within a Private Data Sequence, and the definition of Attribute Values, are implementation dependent.

For a Standard Extended SOP Class the Attributes Pixel Data (7FE0,0010), Float Pixel Data (7FE0,0008), Double Float Pixel Data (7FE0,0009), Waveform Data (5400,1010) and Overlay Data (60xx,3000) shall not be included within a Private Sequence Item, nor within a standard Sequence Item nested directly or indirectly within a Private Sequence Item.