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| 8 | Correction Number CP-1844 | |
| 9 | Log Summary: Restore group length VR definition even though retired | |
| 10 | Name of Standard | |
| 11 | PS3.5 2019a | |
| 12 | Rationale for Correction: | |
| 13 | CP 172 generalized the VR definition for group length data elements rather than depending on their description per group in PS3.6, | |
| 14 | which also had the effect of defining the VR for private group length data elements. | |
| 15 | When CP 707 retired group length data elements it removed the VR definition. | |
| 16 | Restore the VR definition and also mention that private group length data elements exist and are retired. | |
| 17 | Correction Wording: | |

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

7.2 Group Length

Group Length (gggg,0000) ~~Standard~~ Data Elements were implicitly defined for Standard and Private Data Element groups with a Value Representation of UL and a Value Multiplicity of 1, but have been retired. See PS3.5-2007.

All implementations shall be able to parse Group Length elements, and may discard and not insert or re-insert them; if present they shall be consistent with the encoding of the Data Set even if the Transfer Syntax is changed resulting in a change in the actual length of a group of elements. No implementation shall require the presence of Group Length elements.

Note

1. Elements in groups 0, 2, 4 and 6 are not Standard Data Elements. Mandatory requirements for Group Length for groups 0 and 2 are specified elsewhere in the standard.
2. It is recommended that Group Length elements be removed during storage or transfer in order to avoid the risk of inconsistencies arising during coercion of data element values and changes in Transfer Syntax.

7.8 Private Data Elements

Implementations may require communication of information that cannot be contained in Standard Data Elements. Private Data Elements are intended to be used to contain such information. Such Private Data Elements shall not change the semantics of the Information Object Definition or SOP Class Definition.

Private Data Elements have the same structure as Standard Data Elements specified earlier in ??? (i.e., Data Element Tag field, optional VR field, length field, and value field). The Group Number used in the Element Tag of Private Data Elements shall be an odd number. Private Data Elements shall be contained in the Data Set in increasing numeric order of Data Element Tag. The Value Field of a Private data element shall have one of the VRs specified by this standard in ???.

For each Information Object Definition or SOP Class Definition, certain Data Elements are required (Data Element Type 1, 1C, 2, or 2C) as specified in ??? and ???. Private Data Elements shall not be used in place of required Standard Data Elements.

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.
- b. Private Creator Data Element (gggg,0010), is a Type 1 Data Element that identifies the implementer reserving element (gggg,1000-10FF), Private Creator Data Element (gggg,0011) identifies the implementer reserving elements (gggg,1100-11FF), and so on, until Private Creator Data Element (gggg,00FF) identifies the implementer reserving elements (gggg,FF00-FFFF).
- 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. The versions of this standard prior to V3.0 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. The versions of this standard prior to V3.0 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), and (0007,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 ????
- f. **Data Elements numbered (gggg,0000), where gggg is odd, were Group Length Elements, which have been retired. See Section 7.2 Group Length.**

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 Elements 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,xxee,"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 ??? 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.