Correction Number: CP-2060

Log Summary: Possible Private Creator Code conflict

Name of Standard: PS3.5 2020a

Rationale for Correction:
As Private Creator Codes are defined inside and outside sequences there might be a possible conflict.

PS3.5 Section 7.8.1 specifies:
"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."

But for Sequences the following holds:
"Since each Item within a sequence is a self contained Data Set (see Section 7.5 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."

As the sequence part mentioned that specification is local and needs to be specified it is not clear if this should also follow the global definition rule of not using different strings.

Think we should make clear if the local sequence version is allowed to differ from root level definitions or not.

[Comment: Agfa: pg. 2, Note i. - The added text states "Each item needs to claim the corresponding private block of Elements as described in Section 7.5." However, the only mention in Section 7.5 (or any of it's subsections) to private elements or blocks is the following reference back to Section 7.8: "Section 7.8 specifies rules for incorporating Private Data Elements into Sequence Items." Thus the newly added text is simply creating a circular reference. In fact, reservation of private blocks of elements within a sequence is described in the paragraph between lettered item f. and the new Example table that is added. FIXED.]

Correction Wording:

Sections are given to explain context and give full overview.
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 an 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 Section 7.5) may be used to contain these multiple each of the repeated elements in separate items. Each item needs to claim the corresponding private block of Elements, as described below.

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 required in order to identify elements (gggg,1000-10FF) if present, Private Creator Data Element (gggg,0011) is required in order to identify elements (gggg,1100-11FF) if present, through Private Creator Data Element (gggg,00FF), which identifies 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 Section 7.2.

Since each Item within a sequence are in a self contained Data Sets (see Section 7.5 on the nesting of Data Sets via Sequences of Items), any Item in the sequence that contains Private Data Elements shall also have Private Creator Data Elements reserving a block 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.

Example:

<table>
<thead>
<tr>
<th>Attribute Tag</th>
<th>Attribute Value</th>
<th>Attribute Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0029,0010)</td>
<td>&quot;Acme_CT_Parameters&quot;</td>
<td>Reservation of block for Acme CT Parameters</td>
</tr>
<tr>
<td>(0029,0011)</td>
<td>&quot;Acme_General_Parameters&quot;</td>
<td>Reservation of block for Acme General Parameters</td>
</tr>
<tr>
<td>(0029,1101)</td>
<td></td>
<td>Sequence containing repeating attributes.</td>
</tr>
<tr>
<td>%item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; (0029,0010)</td>
<td>&quot;Acme_CT_Parameters&quot;</td>
<td>Reservation of block for Acme CT Parameters</td>
</tr>
<tr>
<td>&gt; (0029,0011)</td>
<td>&quot;Acme_General_Parameters&quot;</td>
<td>Reservation of block for Acme General Parameters</td>
</tr>
<tr>
<td>&gt; (0029,1001)</td>
<td>985</td>
<td>Acme CT Parameter 1</td>
</tr>
<tr>
<td>&gt;...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%enditem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; (0029,0010)</td>
<td>&quot;Acme_General_Parameters&quot;</td>
<td>Reservation of block for Acme General Parameters</td>
</tr>
<tr>
<td>&gt; (0029,0011)</td>
<td>&quot;Acme_CT_Parameters&quot;</td>
<td>Reservation of block for Acme CT Parameters</td>
</tr>
<tr>
<td>&gt; (0029,1101)</td>
<td>986</td>
<td>Acme CT Parameter 1</td>
</tr>
<tr>
<td>&gt;...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%enditem</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
%endseq

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.