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INCITS 398-2005- Report on Alleged Defects

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Several organizations (e.g., NIST, other CBEFF Team Members, current users and developers of CBEFF structures, organization that are writing CBEFF decoders) have reviewed the published standard and have found the following alleged defects. Where remedies appear straightforward, proposed modifications are included. We intend to propose an amendment to the standard to address these issues within INCITS M1.

Annex A – Patron Format A Description

The *Fields Present Mask* is an optional field. Conformance with patron Format A can be achieved in the current standard with or without this specific field. If present, it is required to *follow* an optional field (Sub-header/Basic Structure Count). In the case where decoders of data structures conforming to this Patron Format do not have external information on the specific structure, they can not determine where the mask field is because it depends on an optional field that might not be present.

Proposed changes (to make the data structure as self describing as possible):

- (a) Make the mask field mandatory for this Patron Format
- (b) Make every field before the mask mandatory (invert the position of the sub-header field and the mask).

2. The *Patron Header Version Field* is listed as optional in Patron Format A. Table 1 specifies it as optional, but Clause 5.2.1.4 list this field as mandatory.

Proposed changes:

Make this field optional by changing the word “Required” to “Optional” in 5.2.1.4 .

Nested Structures

Need to include a more detailed analysis and provide more detailed information on how to encode/decode these structures. Need to include details on how to decode the structure in the cases where (a) the encoding rules are fully known and (b) the encoding rules are not known. Need clarifications and additional requirements such as:

1. Only Biometric Sub-headers where the Sub-header/Basic Structure Count = 0 shall be followed by a Biometric Data Block (BDB). Any level higher than the lowest level of the structure shall not include a BDB. Clause 5.2.1.16 must also include this requirement.
2. The BDB is listed as required in Table 1. It should be specified that the BDB is only mandatory for single records. A clarification related to item 1 above must be included as a footnote of the Table referring to the nested structure

requirements. A clarification on the use of BDBs in nested structures should be also included in clause 5.2.2.

3. Need to specify how to allow for the use of records that conform to different Patron Formats within a nested structure for applications that combine records from different sources (conforming to different CBEFF Patron Formats). Need to change the footnote under Clause 5.2.1.19. Currently it is not possible without previous knowledge to identify different Patron Formats under a sub-header other than the first sub-header. Need to also review the statements/requirements under Patron Format B (Annex B) as needed.
4. Need to make the Sub-header/Basic Structure Count field mandatory for nested structures. Unless full previous knowledge of the full nested structure is available, it is not possible to decode a substructure unless this field is included (Not possible to decode the “next byte” of a sub-header, for example).
5. The lack of a length field creates decoding problems also. It might need to specify a length field. If some records in the structure do not conform to a Patron Format that allows a decoder to determine the length of the structure, a length field might be required in order to decode the structure.
6. More information is needed in order to decode the nested structure. It would be useful to include more explanation on how to use the Sub-header Count and Patron Format Identifier fields to enable decoding of an entire nested structure. A new field in the Root and Sub-headers that would include the number of Sub-headers in the next level below plus the Patron Format IDs of each of the substructures that follow them may be necessary.
7. The example in Figure 2 needs to be change to address the different instances listed above (or other Figures need to be developed). For example, Figure 2 is not quite correct as shown. If the Root Biometric Header conforms to Patron Format B, a Biometric Type field should not be included.
8. Rules need to be defined on what fields must be included in a Biometric Sub-header when all the lower level records within that sub-structure have common characteristics (e.g., same Format Owner, modality, etc.).
9. Annex B – Patron Format B Description must be redone according to the revisions made in the standard for nested structures due to items 1-7 above.

Other Requirements

Patron Formats

1. The standard does not clarify that new Patron Formats can include additional fields that are not specified in the standard (even non-CBEFF conformant fields).
2. The standard does not include information on who has maintenance responsibility for new Patron Formats. Information on a Registry for patron format identifiers does not exist and should be included.
3. Identification of the format or content of the “signature” block is not included. A Format Owner/Type that allows decoders to identify what standard/organization specified the content of the block is missing and should be included. A CBEFF Registry must be established that would include information on these Format Owners/Types. This is really a security block, not a signature block only.