**DICOM Correction Item**

**Correction Number**
CP-865

**Log Summary:** SOP Instance Reference macro in HL7 Structured Document Reference Sequence

**Type of Modification**
Correction

**Name of Standard**
PS 3.3 2008

**Rationale for Correction**

The HL7 Structured Document Reference Sequence provides a mapping from "pseudo" SOP Class and Instance UIDs that may be used as references elsewhere in an IOD, to where the referenced document might be retrieved.

The descriptions of the Referenced SOP Class and Instance UIDs contain content that makes refactoring of these two attributes into the SOP Instance Reference macro (used in all other such uses) difficult.

**Factor out the specific description into the enclosing sequence and use the generic macro.**

**Sections of documents affected**
PS 3.3 C.12.1

**Correction Wording:**

_For reference PS 3.10.8:_

**10.8 SOP INSTANCE REFERENCE MACRO**

Table 10-11 specifies the attributes that reference an SOP instance.

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referenced SOP Class UID</td>
<td>(0008,1150)</td>
<td>1</td>
<td>Uniquely identifies the referenced SOP Class.</td>
</tr>
<tr>
<td>Referenced SOP Instance UID</td>
<td>(0008,1155)</td>
<td>1</td>
<td>Uniquely identifies the referenced SOP Instance.</td>
</tr>
</tbody>
</table>

_Amend PS 3.3 C.23.1:_

**C.12.1 SOP Common Module**

...  

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Type</th>
<th>Attribute Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>HL7 Structured Document</td>
<td>(0040,A390)</td>
<td>1C</td>
<td>Sequence of items defining mapping</td>
</tr>
</tbody>
</table>
Reference Sequence

between HL7 Instance Identifiers and/or access mechanism for unencapsulated HL7 Structured Documents referenced from the current SOP Instance as if they were DICOM Composite SOP Class Instances defined by SOP Class and Instance UID pairs. May also define a means of accessing the Documents.

One or more Items may be included in this sequence.

See C.12.1.1.6.

Required if unencapsulated HL7 Structured Documents are referenced within the Instance. Every such document so referenced is required to have a corresponding Item in this Sequence.

| >Referenced SOP Class UID | (0008,1150) | 4 | Unique identifier for the class of HL7 Structured Document. |
| >Referenced SOP Instance UID | (0008,1155) | 4 | Unique identifier for the HL7 Structured Document as used in DICOM instance references. |

>Include 'SOP Instance Reference Macro' Table 10-11

| >HL7 Instance Identifier | (0040,E001) | 1 | Instance Identifier of the referenced HL7 Structured Document, encoded as a UID (OID or UID), concatenated with a caret (^) and Extension value (if Extension is present in Instance Identifier). |
| >Retrieve URI | (0040,E010) | 3 | Retrieval access path to HL7 Structured Document. Includes fully specified scheme, authority, path, and query in accordance with RFC 2396 |

C.12.1.1.6  HL7 Structured Document Reference Sequence

The HL7 Structured Document Reference Sequence (0040,A390) identifies instances of Structured Documents defined under an HL7 standard. The HL7 standards that define such documents include the Clinical Document Architecture (CDA) and Structured Product Labeling (SPL) standards.

References to unencapsulated HL7 Structured Documents from within DICOM SOP Instances shall be encoded with a SOP Class UID and SOP Instance UID pair. The Abstract Syntax of an HL7 Structured Document is defined by its Hierarchical Message Description; the Object Identifier of the Hierarchical Message Description shall be used as the SOP Class UID for the Structured Document reference.

Notes: 1. The Hierarchical Message Description Object Identifiers are specified in the HL7 OID Registry (http://hl7.org/oid). The HL7 OIDs for these types of documents are:

| CDA Release 1 | 2.16.840.1.113883.1.7.1 |
| CDA Release 2 | 2.16.840.1.113883.1.7.2 |
| SPL Release 1 | 2.16.840.1.113883.1.7.3 |
2. The Hierarchical Message Description Object Identifiers do not imply a network or media storage service, as do SOP Class UIDs. However, they do identify the Abstract Syntax, similar to SOP Class UIDs.

The HL7 Structured Document instances are natively identified by an attribute using the Instance Identifier (II) Data Type, as defined in HL7 v3 Data Types - Abstract Specification. A UID as defined by the DICOM UI Value Representation is a valid identifier under the II Data Type; however, an II attribute is not always encodable as a UID. Therefore a UID shall be constructed for use within the DICOM Data Set that can be mapped to the native instance identifier encoded as an HL7 II Data Type. This mapping is performed through the combination of the local Referenced SOP Instance UID (0008,1155) and the HL7 Instance Identifier (0040,E001) attributes in the HL7 Structured Document Reference Sequence (0040,A390).

Notes:
1. An HL7 II is not encodable as a UID if it exceeds 64 characters, or if it includes an extension. See HL7 v3 DT R1.
2. Even though an II may contain just a UID, applications should take care to use the II specified in HL7 Instance Identifier (0040,E001) to access the Structured Document. If the instance identifier used natively within the referenced document is encodable using the UI VR, i.e., it is an ISO 8824 OID up to 64 characters without an extension, it is recommended to be used as the Referenced SOP Instance UID within the current Instance.
3. The Referenced SOP Instance UID used to reference a particular HL7 Structured Document is not necessarily the same in all DICOM Instances. For example, two SR Documents may internally use different SOP Instance UIDs to reference the same HL7 Structured Document, but they will each contain a mapping to the same HL7 Instance Identifier as the external identifier.
4. The HL7 Instance Identifier is encoded in attribute (0040,E001) as a serialization of the UID and Extension (if any) separated by a caret character. This is the same format adopted in the IHE Cross-Enterprise Document Sharing (XDS) profile (see http://www.ihe.net).
5. See Figure C.12-3.
Figure C.12-3 HL7 Structured Document References