DICOM Correction Item

Correction Number                                         CP-1036

Log Summary: Correct Image and Frame Type Enhanced XA/XRF

Type of Modification Name of Standard
Correction       PS 3.3, 3.6 - 2009

Rationale for Correction

In Enhanced XA/XRF the Image Type and Frame Type attributes are not used as with the other Enhanced SOP Classes. Furthermore it does not fit the VM of the Frame Type attribute.

To harmonize the use of Image Type and Frame the same fixed, four values are used as with the other Enhanced SOP Classes and a new attribute is introduced to keep the existing Image Type Value 3.

Sections of documents affected

PS 3.3 Section C.8.19.2, PS 3.6 Section 6

Correction Wording:

Add new Imaging Plane attributes in PS 3.3 table C.19.2-1

C.8.19.2 Enhanced XA/XRF Image Module

Table C.8.19.2-1 Enhanced XA/XRF Image Module Table

<table>
<thead>
<tr>
<th>Attribute Name</th>
<th>Tag</th>
<th>Type</th>
<th>Attribute Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Type</td>
<td>(0008,0008)</td>
<td>1</td>
<td>Image identification characteristics. See C.8.19.2.1.1 for specialization.</td>
</tr>
<tr>
<td>Planes in Acquisition</td>
<td>(0018,9410)</td>
<td>1</td>
<td>The multiplicity of planes used simultaneously during the acquisition. See C.8.19.2.1.3.</td>
</tr>
</tbody>
</table>
### Plane Identification

| Plane Identification | (0018,9457) | 1C | Identification of the plane used to acquire this image. Defined Terms: MONOPLANE, PLANE A, PLANE B. Notes: 1. MONOPLANE may only be used for a single plane system. 2. PLANE A and PLANE B must be used for two plane systems, independent if the acquisition is single plane or biplane. 3. The value has to be in accordance with Image Type (0008,0008) value 3 the value of the Planes in Acquisition (0018,94x1) attribute. If this value is SINGLE PLANE all three Defined Term are applicable. Required if Image Type (0008,0008) Value 3 Planes in Acquisition (0018,94x1) is not equal to UNDEFINED. |

### Acquisition Number

| Acquisition Number | (0020,0012) | 3 | A number identifying the single continuous gathering of data over a period of time that resulted in this image. |

### Referenced Other Plane Sequence

| Referenced Other Plane Sequence | (0008,9410) | 1C | A sequence that identifies the SOP Class/Instance pairs of the corresponding plane for a Biplane acquisition device. Only a single item shall be permitted in this Sequence. Required if Image Type (0008,0008) Value 3 Planes in Acquisition (0018,94x1) is BIPLANE A or BIPLANE B. |

>Include ‘Image SOP Instance Reference Macro’ Table 10-3

### Replace the description of the Image Type attribute in PS 3.3 section C.8.19.2.1

C.8.19.2.1 Enhanced XA/XRF Image Module Attribute Description

C.8.19.2.1.1 Image Type

The Image Type attribute identifies important image characteristics in a multiple valued data element. For X-Ray, Image Type is specialized as follows:

- **Value 1** shall identify the Pixel Data Characteristics in accordance with Section C.7.6.1.1.2; Enumerated Values are: ORIGINAL and DERIVED.
- **Value 2** shall identify the Patient Examination Characteristics in accordance with Section C.7.6.1.1.2; Enumerated Values are: PRIMARY and SECONDARY.

Note: X-Ray images generally use PRIMARY value for images captured from patient exposure.
c. Value 3 shall identify the image set in terms of the imaging planes. Enumerated Values are:

**SINGLE PLANE**  Image is a single plane acquisition;

**BIPLANE A**  Image is the first plane (e.g., Frontal) of a Bi-plane acquisition;

**BIPLANE B**  Image is the second plane (e.g., Lateral) of a Bi-plane acquisition

**UNDEFINED**  Image is created by using data from one or two planes (e.g., reconstructed projection). May only be used when Image Type Value 1 equals DERIVED.

d. Other Values are implementation specific (optional).

C.8.19.1.1 Image Type and Frame Type

In addition to the requirements specified in C.8.16.1 Image Type, the following additional requirements and Defined Terms are specified.

C.8.19.1.1.1 Pixel Data Characteristics

Value 1 of Image Type (0008,0008) and Frame Type (0008,9007) is discussed in C.8.16.1.1. No additional requirements or Defined Terms.

C.8.19.1.1.2 Patient Examination Characteristics

Value 2 of Image Type (0008,0008) and Frame Type (0008,9007) is discussed in C.8.16.1.2. No additional requirements or Defined Terms.

C.8.19.1.1.3 Image Flavor

Value 3 of Image Type (0008,0008) and Frame Type (0008,9007) is discussed in C.8.16.1.3. No additional requirements or Defined Terms.

C.8.19.1.1.4 Derived Pixel Contrast

Value 4 of Image Type (0008,0008) and Frame Type (0008,9007) is discussed in C.8.16.1.4. The value shall be NONE.

Add new section C.8.19.2.1.3 to PS 3.3

C.8.19.2.1.3 Planes in Acquisition

The Planes in Acquisition (0018,94x1) attribute identifies the multiplicity of planes used simultaneously during the acquisition. Enumerated Values are:
**SINGLE PLANE**  
*Image is a single plane acquisition;*

**BIPLANE**  
*Image is part of a Bi-plane acquisition;*

**UNDEFINED**  
*Image is created by using data from one or two planes (e.g., reconstructed projection). May only be used when Image Type Value 1 equals DERIVED.*

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### Add new attribute to PS 3.6 Section 6

<table>
<thead>
<tr>
<th>Tag</th>
<th>Name</th>
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<td>PlanesInAcquisition</td>
<td>CS</td>
<td>1</td>
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</tbody>
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