

DICOM SR Meets XML

- beyond the hype ...



David A. Clunie

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What is XML ?

- ❧ eXtended Markup Language
- ❧ Like HTML, derived from SGML
- ❧ Semantics and structure, not presentation
- ❧ Form - Document Type Definition (DTD)
- ❧ Style Sheets - CSS, XSL

Is really nothing more than an alternative encoding !

DICOM Example

								FE	FF	00	E0	FF	FF	FF	40	00
10	A0	43	53	10	00	48	41	53	20	4F	42	53	20	43	4F	
4E	54	45	58	54	20	40	00	40	A0	43	53	06	00	50	4E	
41	4D	45	20	40	00	43	A0	53	51	00	00	FF	FF	FF	FF	
FE	FF	00	E0	FF	FF	FF	FF	08	00	00	01	53	48	06	00	
30	30	30	35	35	35	08	00	02	01	53	48	06	00	4C	4E	
63	65	6D	6F	08	00	04	01	4C	4F	12	00	52	65	63	6F	
72	64	69	6E	67	20	30	62	73	65	72	76	65	72	FE	FF	
0D	E0	00	00	00	00	FE	FF	DD	E0	00	00	00	00	40	00	
23	A1	50	4E	10	00	53	6D	69	74	68	5E	4A	6F	68	6E	
5E	5E	44	72	5E	20	FE	FF	0D	E0	00	00	00	00			

DICOM Example

```
%item
(0x0040,0xa010) Relationship Type <HAS OBS CONTEXT>
(0x0040,0xa040) Value Type <PNAME >
(0x0040,0xa043) Concept Name Code Sequence
    %item
    (0x0008,0x0100) Code Value <000555>
    (0x0008,0x0102) Coding Scheme Designator <LNdemo>
    (0x0008,0x0104) Code Meaning <Recording Observer>
    %enditem
%endseq
(0x0040,0xa123) Person Name <Smith^John^^Dr^ >
%enditem
```

XML Example

```
<contentitem>
  <contentlabel>1.1</contentlabel>
  <relationshiptype>HAS OBS CONTEXT</relationshiptype>
  <conceptname>
    <codesequence>
      <codevalue>000555</codevalue>
      <codingschemedesignator>LNdemo</codingschemedesignator>
      <codemeaning>Recording Observer</codemeaning>
    </codesequence>
  </conceptname>
  <valuetype>PNAME</valuetype>
  <personname>Smith^John^^Dr^</personname>
</contentitem>
```

Issue - Coded Concepts in XML

```
<codesequence>  
  <codevalue>000555</codevalue>  
  <codingschemedesignator>LNdemo</codingschemedesignator>  
  <codemeaning>Recording Observer</codemeaning>  
</codesequence>
```

VS.

```
<RecordingObserver>
```

XML Alternatives

```
<contentitem>  
  <contentlabel>1.1</contentlabel>  
  <relationshiptype>HAS OBS CONTEXT</relationshiptype>  
  <RecordingObserver\>  
  <valuetype>PNAME</valuetype>  
  <personname>Smith^John^^Dr^</personname>  
</contentitem>
```

```
<contentitem>  
  <contentlabel>1.1</contentlabel>  
  <relationshiptype>HAS OBS CONTEXT</relationshiptype>  
  <RecordingObserver>Smith^John^^Dr^</ RecordingObserver >  
</contentitem>
```

More XML Alternatives

```
<contentitem>  
  <contentlabel>1.1</contentlabel>  
  <relationshiptype>HAS OBS CONTEXT</relationshiptype>  
  <RecordingObserver>Smith^John^^Dr^</ RecordingObserver >  
</contentitem>
```

```
<contentitem label="1.1" relationshiptype="HAS OBS CONTEXT">  
  <RecordingObserver>Smith^John^^Dr^</ RecordingObserver >  
</contentitem>
```

```
< RecordingObserver label="1.1" relationshiptype="HAS OBS CONTEXT">  
  Smith^John^^Dr^  
</ RecordingObserver >
```


SR in XML Home

- ❧ DICOM WG ?
- ❧ HL-7 WG ? Relationship to PRA.
- ❧ DICOM HL-7 joint group (IMSIG/WG20)
- ❧ Other industry collaboration (e.g. IHE) ?
- ❧ Need a standard DTD at all ?
 - proprietary or local transcoding
 - proprietary or local style sheets