



greenCDA and greenCCD

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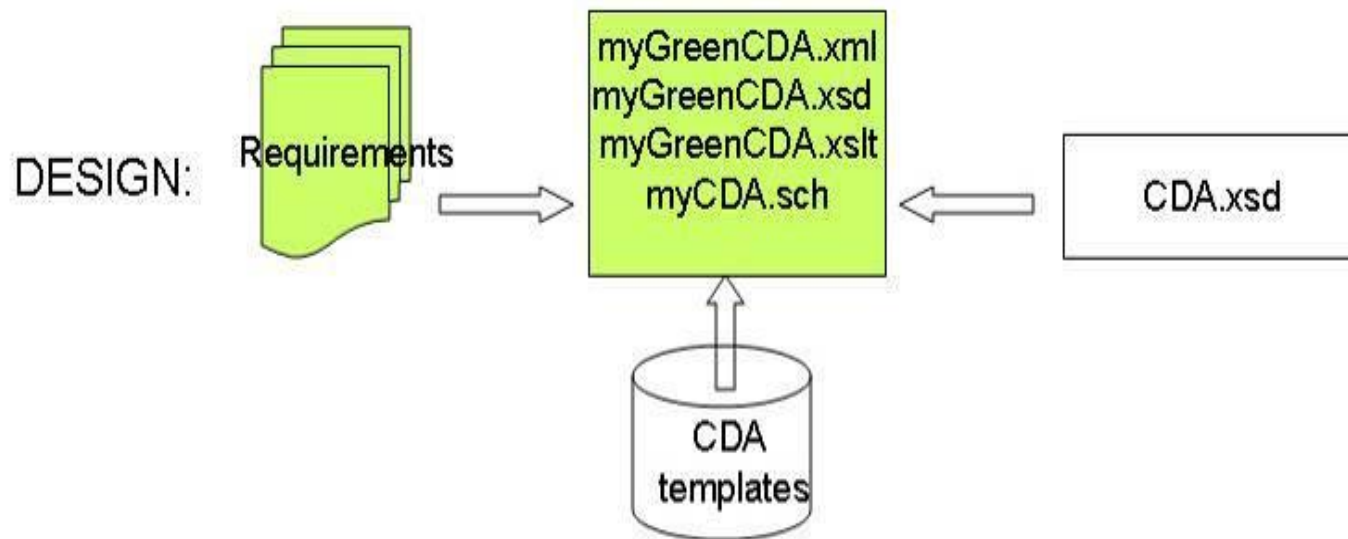
The Problem

- Creation of an instance conforming to a particular CDA Implementation Guide may require knowledge of:
 - CDA R2 base specification;
 - HL7 Version 3 data type specification;
 - CDA templates defined in the particular IG;
 - CDA templates referenced by the particular IG;
 - Terminology code lists defined/referenced by the particular IG;
- Validation of an instance conforming to a particular CDA IG may require:
 - W3C Schema validation;
 - Schematron validation;

A Solution

- Create an “authoring schema” that simplifies the creation and processing of a particular CDA IG:
 - Clinically meaningful XML element and attribute names;
 - 100% transformable into conformant CDA IG;
 - Hides certain CDA complexities (such as moodCodes, fixed attributes, etc).
- We call this strategy: **greenCDA**
 - **greenCDA** schemas are modular, corresponding to CDA templates.

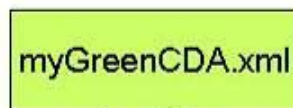
The Process – build the **greenCDA** module



The Process – create a conformant instance

IMPLEMENT:

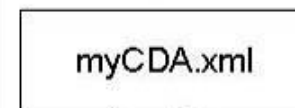
Create:



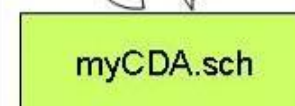
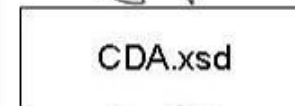
sender



recipient



Validate:



An example - build the **greenCDA** module

Requirements

CDA Data Location	HITSP Data Element Identifier and Name
cda:observation[cda:templateId/@root = '2.16.840.1.113883.10.20.1.31']	Result Event Entry
cda:id	15.01 - Result ID
cda:effectiveTime	15.02 - Result Date/Time
cda:code/@code	15.03 - Result Type
cda:statusCode	15.04 - Result Status
cda:value	15.05 - Result Value
cda:interpretationCode/@code	15.06 - Result Interpretation
cda:referenceRange	15.07 - Result Reference Range

greenCDA schema

```
<result>
  <resultID>
  <resultDateTime>
  <resultType>
  <resultStatus>
  <resultValue>
  <resultInterpretation>
  <resultReferenceRange>
</result>
```

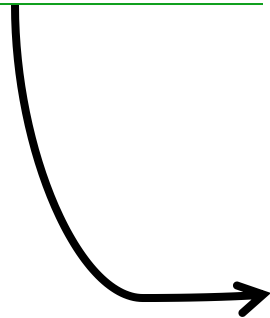
An example - create a conformant instance

greenCDA instance

```
<result>  
  <resultID>  
  <resultDateTime>  
  <resultType>  
  <resultStatus>  
  <resultValue>  
  <resultInterpretation>  
  <resultReferenceRange>  
</result>
```

Conformant CDA instance

```
<!-- These examples assume the default namespace is 'urn:hl7-org:v3' -->  
<observation classCode='OBS' moodCode='EVN'>  
  <templateId root='2.16.840.1.113883.10.20.1.31' />  
  <templateId root='2.16.840.1.113883.3.88.11.83.15' />  
  <templateId root='1.3.6.1.4.1.19376.1.5.3.1.4.13' />  
  <code code='...' displayName='...' codeSystem='2.16.840.1.113883.6.1'  
codeSystemName='LOINC' />  
  <effectiveTime low value='...' />  
  <statusCode value='N' />  
  <value xsi:type='PQ' value='100' unit='g/dl' />  
  <interpretationCode code='N' codeSystem='2.16.840.1.113883.5.83' />  
  <referenceRange>  
    <observationRange>  
      <text>M 13-18 g/dl; F 12-16 g/dl</text>  
    </observationRange>  
  </referenceRange>  
</observation>
```



greenCDA Implementation Guide

[CDAR2_IG_GREENMOD4CCD_R1_I1_2010SEP]



greenCDA: An Implementation Methodology for CDA

Release 1

Informative Document

First Release

February 2011

- Describes **greenCDA** process;
- Contains a complete **greenCCD** (HITSP/C32 conformant) example.



greenCDA Implementation Guide

■ Contents

File	Description
Implementation Guide	Implementation methodology
green_ccd.xsd	Sample greenCCD (HITSP/C32) schema
green_cda_narrative.xsd	An XHTML subset for the greenCDA narrative block.
green_ccd.xml	A sample XML instance conforming to green_ccd.xsd
green_ccd.xslt	An XSLT 2.0 transform to convert green_ccd.xml to normative CDA XML (conformant HITSP/C32).
normative_cda_output.xml	The result of running green_ccd.xslt against green_ccd.xml
cda.xsl	A display stylesheet for viewing normative_cda_output.xml in a browser

Thank you!
