



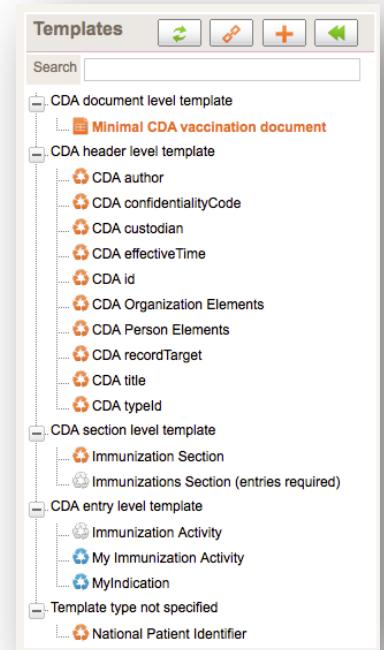
CDA Template Publication/ Validation using ART-DECOR®

Attachment WG Demo

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ART-DECOR® Tool Suite...

- ...is an open-source tool and a methodology for various **multidisciplinary** stakeholders of healthcare information exchange
- ...supports comprehensive **collaboration of team members** within/between governance groups
- ...supports **creation, maintenance and federated sharing of HL7 templates** (HL7 STU), **value sets**, and more
- ...has a built-in **schematron engine** to allow easy **comprehensive validation and testing**



Template Viewer / Editor

- Create / Maintain / Share  Templates + ...
- Derive Artefacts:
 - Documentation
 - Validation/Testing



Demo 5: Vital Signs CDA Document Templates

DECOR Project Datasets Scenarios Terminology Templates Issues

Login English (en-US) ART DECOR

Templates

CDA document level template
 ↳ Vital Signs Summary CDA document

CDA header level template
 ↳ CDA author
 ↳ CDA typeId
 ↳ CDA title
 ↳ CDA confidentialityCode
 ↳ CDA Organization Elements
 ↳ CDA recordTarget
 ↳ CDA custodian
 ↳ CDA id
 ↳ CDA effectiveTime
 ↳ CDA Person Elements
 ↳ AssignedEntityElements

CDA section level template
 ↳ Vital Signs Section

CDA entry level template
 ↳ Vital Sign Observation
 ↳ Mean blood pressure
 ↳ Body Weight
 ↳ HeartRatePeripheral

CDA recordTarget

Version	2014-07-08	Status	Active
Version Label		Id	demo5-template-2001
Name	CDArecordTarget	Display Name	CDA recordTarget

Description, model, context and examples

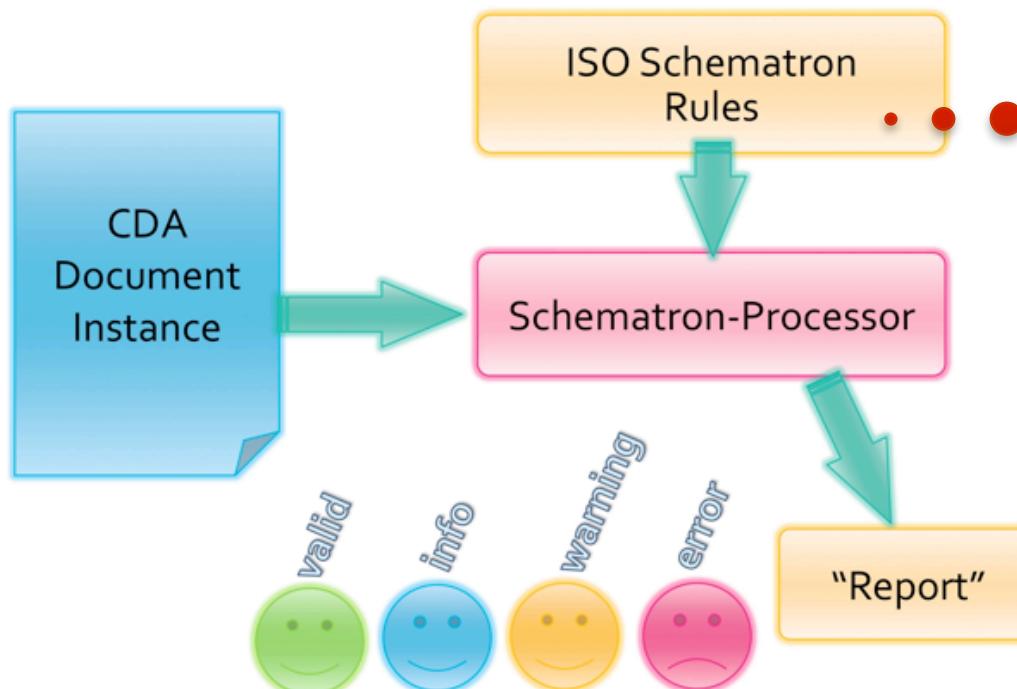
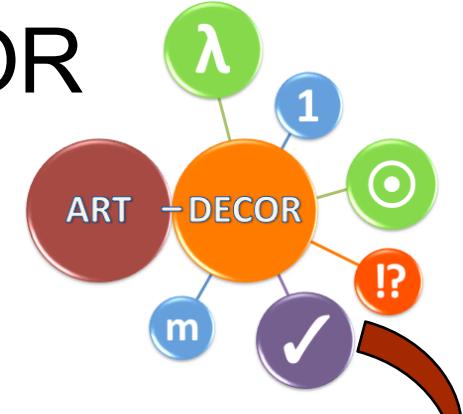
Description	The patient / client		
Classification	cdaheaderlevel		
Open/Closed	open		
Used by / Uses	Used by Template Id	as	Name
	2.16.840.1.113883.3.1937.99.60.5.10.1	Inclusion	VitalSignsCDAdocument Vital Signs Summary CDA document
	Uses Template Id	as	Name
	2.16.840.1.113883.3.1937.99.60.5.10.900207	Inclusion	NationalPatientIdentifier Burgerservicenummer
Relations	Type	Model / Template	as of
	Specialization	2.16.840.1.113883.10.12.101	2005-09-07

Example

```
A simple patient, named John Doeidoe
<recordTarget>
  <patientRole>
    <id root="2.16.840.1.113883.2.4.6.3" extension="100202020">
      <patient>
        <name>
          <given>John</given>
          <family>Doeidoe</family>
        </name>
        <administrativeGenderCode code="#" codeSystem="2.16.840.1.113883.5.1"/>
        <birthTime value="19620219"/>
      </patient>
    </patientRole>
  </recordTarget>
```

Validation of CDA

- ...directly derived from ART-DECOR Template + Value Set Definitions
- ...automatically + manual additions



Directly derived
from templates

- ...works best with
- ART-DECOR built-in schematron engine



GAZELLE
eHealth test framework
for interoperability

Screenshot Live Validation

Download schematron package Validate XML Instance

Validate XML Instances

Upload message/document then select a schematron set and finally validate your instance against that set

Upload message/document: example5cda.xml (10 KB)

Select: ✓ Scenario: summaryvitalsigns - Summary vital signs data (2.16.840.1.113883.3.1937.99.60.5.4.101)

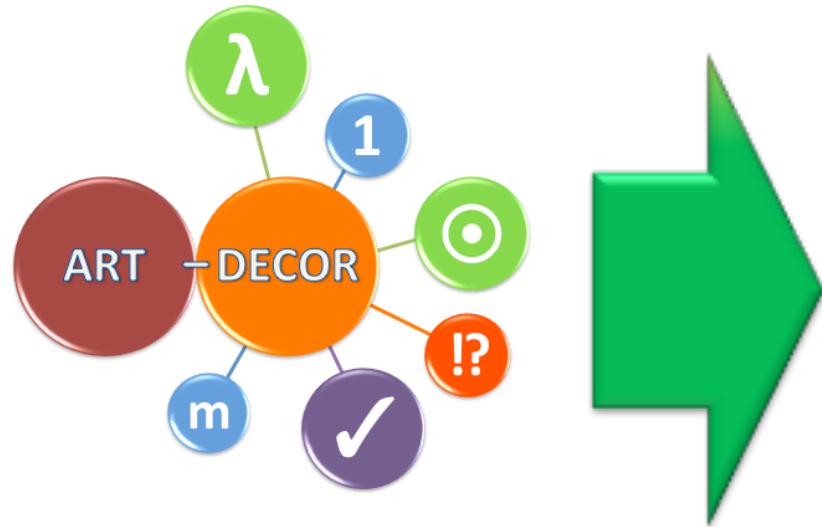
Validate

Results

Results: Schema and schematron check - 7 item(s)

Level	Description																
	Schema Validation: 0 item(s)																
	Schematron Validation: 7 item(s), 1903 rule(s) <table border="1"><thead><tr><th>Level</th><th>Description</th></tr></thead><tbody><tr><td>●</td><td>(VitalSignsCDAdocument): element hl7:code[(@code='51848-0' and @codeSystem='2.16.840.1.113883.6.1')] is mandatory [min 1x].</td></tr><tr><td>●</td><td>(VitalSignsCDAdocument): element hl7:confidentialityCode[concat(@code,@codeSystem)=doc('xmldb:exist:///db/apps/decor/releases/demo5/development/6-DYNAMIC.xml')//valueSet[1]/conceptList/concept(concat(@code,@codeSystem) or (@nullFlavor=doc('xmldb:exist:///db/apps/decor/releases/demo5/development/2.16.840.1.113883.1.11.16926-DYNAMIC.xml')//valueSet[1]/conceptList/exception/@code)) is mandatory [min 1x].</td></tr><tr><td>●</td><td>(OxygenSaturation): value SHALL use unit '%' and</td></tr><tr><td>●</td><td>(OxygenSaturation): value SHALL be in range [..100]</td></tr><tr><td>●</td><td>(BloodPressure): The value for @inversionInd SHALL be 'false'.</td></tr><tr><td>●</td><td>(SystolicBloodPressure): element hl7:code[(@code='8480-6' and @codeSystem='2.16.840.1.113883.6.1')] is mandatory [min 1x].</td></tr><tr><td>●</td><td>(DiastolicBloodPressure): value SHALL use unit 'mm[Hg]'</td></tr></tbody></table>	Level	Description	●	(VitalSignsCDAdocument): element hl7:code[(@code='51848-0' and @codeSystem='2.16.840.1.113883.6.1')] is mandatory [min 1x].	●	(VitalSignsCDAdocument): element hl7:confidentialityCode[concat(@code,@codeSystem)=doc('xmldb:exist:///db/apps/decor/releases/demo5/development/6-DYNAMIC.xml')//valueSet[1]/conceptList/concept(concat(@code,@codeSystem) or (@nullFlavor=doc('xmldb:exist:///db/apps/decor/releases/demo5/development/2.16.840.1.113883.1.11.16926-DYNAMIC.xml')//valueSet[1]/conceptList/exception/@code)) is mandatory [min 1x].	●	(OxygenSaturation): value SHALL use unit '%' and	●	(OxygenSaturation): value SHALL be in range [..100]	●	(BloodPressure): The value for @inversionInd SHALL be 'false'.	●	(SystolicBloodPressure): element hl7:code[(@code='8480-6' and @codeSystem='2.16.840.1.113883.6.1')] is mandatory [min 1x].	●	(DiastolicBloodPressure): value SHALL use unit 'mm[Hg]'
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Summary of Deliverables



- Documentation
 - HTML
 - PDF
 - Wiki
 - FHIR IG Resource
- Implementation
 - RESTful / Export
- Validation
 - Schematron
- Testing/Qualification

Publication Example: HTML

DECOR-informatie voor project: RIVM bevolkingsonderzoek darmkanker (rivmsp-)

The screenshot shows the ART-DECOR application interface. On the left, there's a navigation bar with tabs: Voorblad, Projectinformatie, Dataset, Scenari... (partially visible). Below this is a section titled "DECOR Information für Projekt: ELGA ele..." with sub-sections like "Transaktionsrepräsentierende Templates" and a list of four CDA document types with their respective models and directions.

On the right, a large window displays "Publikationen für ELGA elektronische Gesundheitsakte (elga-)" with the subtitle "ART-DECOR prerelease version". It features two tables: "Aktuell" and "Archiv".

Aktuell:

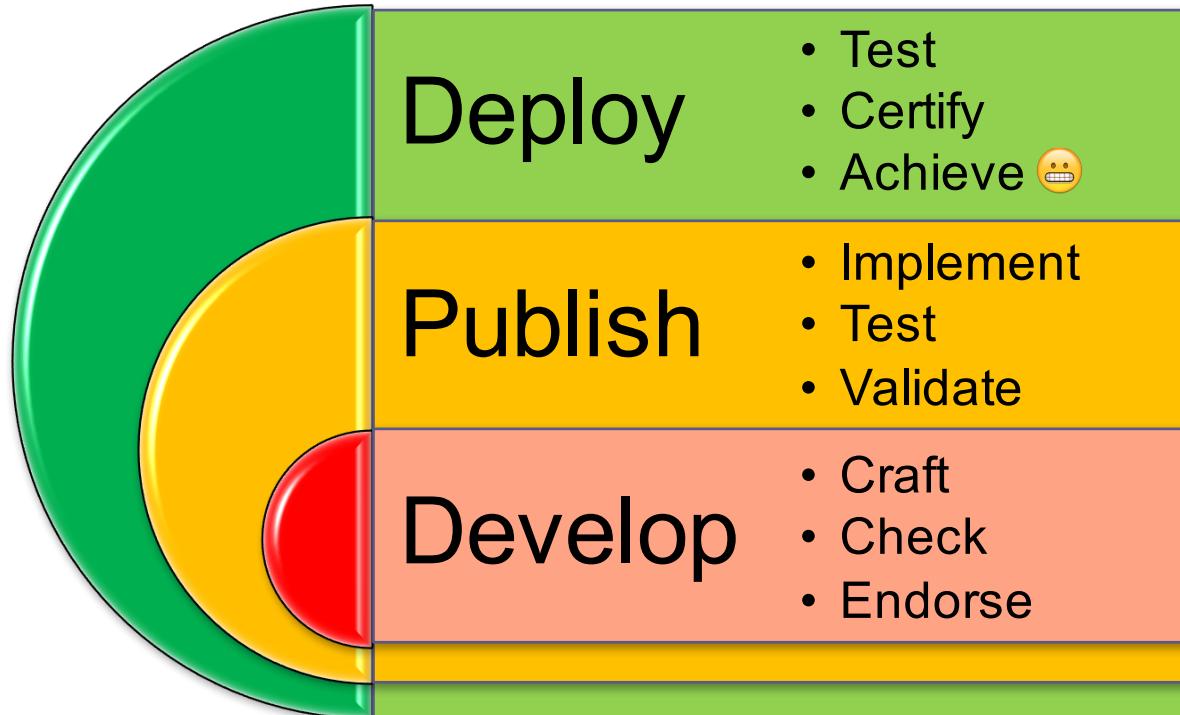
Datum	Status	HTML	PDF	Schematron	XML	Kommentar
07-12-2014 14:43	Aktiv		noch nicht verfügbar		noch nicht verfügbar	

Archiv:

Datum	Status	HTML	PDF	Schematron	XML	Kommentar
27-09-2014 16:22	Obsolet		nicht verfügbar		nicht verfügbar	
24-06-2014 10:28	Obsolet		nicht verfügbar		nicht verfügbar	
01-06-2014 17:17	Obsolet		nicht verfügbar		nicht verfügbar	
26-05-2014 18:09	Obsolet		nicht verfügbar		nicht verfügbar	
14-05-2014 23:14	Obsolet		nicht verfügbar		nicht verfügbar	
16-04-2014 11:40	Obsolet		nicht verfügbar		nicht verfügbar	
25-03-2014 13:19	Obsolet		nicht verfügbar		nicht verfügbar	
24-03-2014 20:16	Obsolet		nicht verfügbar		nicht verfügbar	
01-02-2014 13:10	Zwischenzeitlich		nicht verfügbar		nicht verfügbar	
05-01-2014 12:38	Zwischenzeitlich		nicht verfügbar		nicht verfügbar	

At the bottom of the right-hand window, it says "CDApharmazeutischeEmpfehlung 1.2.40.0.34.11.10008 - 2014-01-31".

Specification Cycles



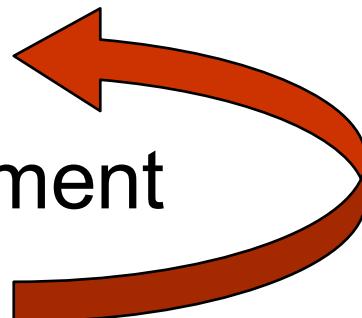
■ ART-DECOR®

- ...supports development of specification
- ...publishes endorsed artefacts in various formats
- ...supports implementation, testing, validation, certification

LIVE DEMO



- Development Phase
 1. View / refine Template
 2. Create validation environment
 3. Validate Instance



Thanks you



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