Providing ART-DECOR ValueSets via FHIR Terminology Servers – A Technical Report

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Jahrestagung der GMDS 2021
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  - IHE ValueSets for Sharing
  - provision in a local FHIR Terminology Server (Ontoserver)
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- Generate CodeSystems from the available ValueSet resources
Integrating the Healthcare Enterprise (IHE)

- IHE defines several integration profiles
  - e.g., XDS.b: Cross-Enterprise Document Sharing for exchange of documents (e.g. patient files)
- XDS.b requires use of coded information in the meta-model
  - “Container format” that can be used for exchange of machine-readable documents (e.g. HL7 CDA) alongside human-readable documents (e.g. scanned PDF documents)
  - Identification of metadata elements in container using standard terminology
ART-DECOR

• “Advanced Requirements Tooling using Data Elements, Codes, OIDs and Rules”
  – System for development of data set specifications
  – Used extensively for HL7 Clinical Document Architecture (CDA) profiling

• Implementation-independent logical models of the data sets
  – Transformation of models to e.g. FHIR, openEHR, CDA et al.
ART-DECOR and IHE ValueSets

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ART-DECOR and IHE ValueSets

Warning! Code systems integrated in DECOR are a temporary solution. We are working on a more capable and scalable solution for ART-DECOR 2.0. This is why there currently is no editor.

DICOM PS3.16 CID 29 Acquisition Modality

Usage (...)

Id
DICOM_Acquisition_Modality

Gültigkeit
Reference to another code system with id='1.2.840.10008.6.1.19' and name='DICOM PS3.16 CID 29 Acquisition Modality'

Name
DICOM_Acquisition_Modality

Bezeichnung

DICOM PS3.16 CID 29 Acquisition Modality

<table>
<thead>
<tr>
<th>0-L</th>
<th>1</th>
<th>Einweiser</th>
<th>Prozessrollen für Autoren</th>
<th>Die Person, die die Einweisung veranlasst hat. (Sie wird auch als Zuweiser bezeichnet.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-L</td>
<td>2</td>
<td>Entlassender</td>
<td>Prozessrollen für Autoren</td>
<td>Die Person, die für die Entlassung verantwortlich ist.</td>
</tr>
<tr>
<td>0-L</td>
<td>3</td>
<td>Überweiser</td>
<td>Prozessrollen für Autoren</td>
<td>Die Person, die die Überweisung veranlasst hat.</td>
</tr>
</tbody>
</table>

Specifications for terminology

• Terminology must be exchangeable across institutions
  – Specifications for the representation and exchange of terminological artefacts needed
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• Utilization of terminology servers (TS) and standard-compliant resources
  – HL7 FHIR R4 Terminology Package
    ■ Resources
    ■ Operations
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CodeSystem/ValueSet Dichotomy in HL7 FHIR
Conversion Process

• Input: native ART-DECOR JSON

Images: ART-DECOR native JSON for IHEXDSauthorRole ValueSet, [http://art-decor.org/decor/services/RetrieveValueSet?prefix=ihede-&language=de-DE&version=1.2.276.0.76.11.30&effectiveDate=2021-06-25T13%3A21%3A07&format=json](http://art-decor.org/decor/services/RetrieveValueSet?prefix=ihede-&language=de-DE&version=1.2.276.0.76.11.30&effectiveDate=2021-06-25T13%3A21%3A07&format=json) [accessed: 2021-09-21]
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- **Only render resources that are not elsewhere defined**
  - OID matcher: ignore entire OID subtrees
  - e.g. HL7 Terminology 2.16.840.1.113883.5
Lessons Learned

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- One resource converted manually using GUI tooling → tools exist!
- Go FHIR, it’s not that hard!

Discussion

• In a FHIR-based world, terminology should be FHIR also

• Need for terminology servers to distribute resources across the ecosystem
Contact

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