Issue 627 - Explicitly document cross-references btw family models

Session 3.2
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Issue 627 – Explicitly document cross-references btw family models

Issue 627 initial goals (18/01/2023):
• Document dependencies among CRM extensions
• Parse all FM documents (11) and maintain a repository for each with:
  • RDFs main module, pc module \textit{(under construction)}, supplement module
  • documentation of references to other models
  • documentation of the results of the RDFs generation policies appliance

Additional goals, set during implementation:
• Try to adapt older FMs to the most recent stable version of base and other FM
• Detect documentation issues
• Generate owl encoding
• URI resolution using the namespace pattern \texttt{http://www.cidoc-crm.org/extensions/\{ext\}/} (\textit{decision of issue 577}) \textit{(partially done)}
• Html representation
# FMs Crmbase ISO Compatibility statuses

## Release Candidate

<table>
<thead>
<tr>
<th>Stable status and CRMbase 7.1.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CRMarchaeo 2.0 <em>(crmbase 7.1.2)</em></td>
</tr>
<tr>
<td>2. CRMsci 2.0 <em>(crmbase 7.1.2)</em></td>
</tr>
<tr>
<td>3. CRMtex 2.0 <em>(crmbase 7.1.2)</em></td>
</tr>
<tr>
<td>4. LRMoo 0.9.6 <em>(crmbase 7.1.2)</em></td>
</tr>
</tbody>
</table>

## Draft

<table>
<thead>
<tr>
<th>Either draft status or CRMbase 6.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CRMinf 1.0 <em>(Draft 2023 crmbase 7.1.2)</em></td>
</tr>
<tr>
<td>2. CRMdig 4.0 <em>(Draft 2022 crmbase 7.1.1)</em></td>
</tr>
<tr>
<td>3. CRMact 0.2 <em>(Draft 2022 crmbase 7.1.1)</em></td>
</tr>
<tr>
<td>4. CRMgeo 1.2 <em>(Stable 2015 crmbase 6.2)</em></td>
</tr>
<tr>
<td>5. CRMsoc 0.1 <em>(Draft 2019 crmbase 6.2.5)</em></td>
</tr>
<tr>
<td>6. CRMba <em>(Stable 2016 crmbase 6.2.2)</em></td>
</tr>
<tr>
<td>7. PRESSoo 1.3 <em>(Official2017 crmbase 6.2)</em></td>
</tr>
</tbody>
</table>
ISO Compatibility status: Release Candidate

Stable FM version / Compatible with CRMbase 7.1.*

Prepared the Encodings column in each FM Resources page containing:

- Resolvable namespace link (*HTML/RDF requests*)
- RDFs link-group containing base RDFs, owl, repository link and if necessary pc(draft) and supplement module
- XML & HTML for declarations
- Dependencies of each FM to other models are included in the HTML
- External uri references and details regarding RDFs generation policies are included in the repository link (label: more)

<table>
<thead>
<tr>
<th>Version</th>
<th>Release Date</th>
<th>Available Documents</th>
<th>Status</th>
<th>Encodings</th>
<th>CIDOC-CRM Compatible Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version 2.0</td>
<td></td>
<td></td>
<td></td>
<td>- RDFs (main, pc(draft), owl, more)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- XML</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Classes &amp; Properties declarations</td>
<td></td>
</tr>
</tbody>
</table>
ISO Compatibility status: Draft

- FM versions characterized as Draft versions by model maintainers group OR FM versions compatible to CRMbase 6.*
- **Empty** Encodings column in each FM Resources page
- Created a repository for each FM where the references to CRMbase and other CRM extensions were upgraded whenever possible to the most recent stable versions compatible with CRM base iso version.
- This repository has similar contents to the Release Candidate versions (RDFs modules, owl, external dependencies, RDFs generation policies, HTML, etc.) with a clear note that these encodings should be considered as drafts.
- These repositories can actually assist the next FM version preparation by revealing issues that should be addressed.
Extensions, useful links page

CIDOC CRM | Useful links for the under development Encodings column of the Family Models Resources page.

Relevant Issue: 627 explicitly document cross-references btw family models.

<table>
<thead>
<tr>
<th>Family Model (HTML representation)</th>
<th>Dependencies</th>
<th>Useful links</th>
<th>Encodings Status</th>
<th>Current maintainers</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMarchaeo v2.0</td>
<td>Cidoc-CRM v7.1.2, CRMsci v2.0</td>
<td>Resources page, gitlab repository (more), Documentation issues, External References</td>
<td>Release Candidate</td>
<td>CEO, GH, AF, MK</td>
</tr>
<tr>
<td>CRMsci v2.0</td>
<td>Cidoc-CRM v7.1.2</td>
<td>Resources page, gitlab repository (more), Documentation issues, External References, RDFS Generation Policies</td>
<td>Release Candidate</td>
<td>TV, AK, MD</td>
</tr>
<tr>
<td>CRMtex v2.0</td>
<td>Cidoc-CRM v7.1.2, CRMinf v0.7(d), CRMsci v2.0, FRBRoo v2.4</td>
<td>Resources page, gitlab repository (more), Documentation issues, External References</td>
<td>Release Candidate</td>
<td>PF, AF, FM, MD</td>
</tr>
<tr>
<td>LRMoo v0.9.6</td>
<td>Cidoc-CRM v7.1.2</td>
<td>Resources page, gitlab repository (more), Documentation issues, External References, RDFS Generation Policies</td>
<td>Release Candidate</td>
<td>PR</td>
</tr>
<tr>
<td>CRMgeo based on v1.2 (2015)</td>
<td>Cidoc-CRM v7.1.3, GeoSPARQL v1.1</td>
<td>Resources page, gitlab repository (more), Documentation issues, External References</td>
<td>Draft</td>
<td>GH</td>
</tr>
</tbody>
</table>

https://www.cidoc-crm.org/extensions/
Extensions, useful links page table columns

- **Family Model (HTML representation):** usually* the extension namespace link that is resolvable in HTML and RDF requests
- **Dependencies:** The external models that have been used
- **Useful links:** includes notable links to the most recent development repository of each FM including:
  - **Resources page**
  - **Gitlab repository (more):** The latest development repository that is usually displayed as “more” in the Encodings column
  - **Documentation issues:** includes issues detected during parsing of the specification document
  - **External References:** direct link to the repository text that lists all the model external uri references
  - **RDFs generation policies:** direct link to the repository text that lists all the outcomes of the RDFs generation policies
- **Encodings status:** Release Candidate/Draft
- **Current Maintainers:** the current WG of each FM

* Except for LRMoo, PRESSoo that follow different namespace pattern
Detected documentation (?) issues

• Inverse property names missing
  • CRMarchaeo ['E55. AP29: E4', 'E55. AP30: E4', 'E55. AP31: E4']
  • CRMdig ['D2. L60: E1']
  • CRMba ['BP11. BP11.2: E24', 'B5. BP15: B3']

• Missing some declarations of superClassOf / superPropertyOf statements
  • CRMarchaeo, CRMinf, CRMdig

• Missing some quantification, FOL, example statements
  • CRMarchaeo, CRMsci, LRMoo, CRMgeo, CRMdig, CRMba, PRESSoo

• References to external non-stable or older (non iso-ready) versions of other FMs
  • CRMtex, PRESSoo

• Links to google docs which should probably be removed
  • CRMarchaeo, CRMtex

• Editing suggestions / comments that make the final text unclear
  • CRMinf
Conclusions / Next steps

• Each FM maintainer group should review the documentation issues and decide on
  • whether these issues require action (new version)
  • whether these encodings are ready for use

• Should the DRAFT HTML/RDF uri resolution be disabled or the draft note is enough for avoiding misusage

• Do we agree on the format of the Encodings column in the Resources page of Release candidate FMs?

• Keeping current issue for all issues that need to be addressed in each FM may become never-ending and confusing. Proposal for closing the current issue 627 and continue whenever needed with FM specific issues
Thank you!

https://www.cidoc-crm.org/extensions/
Next development steps

- PC module implementation
- URI resolution improvement
- HTML representation improvement
  - Complete (including external references) hierarchical trees
  - Complete properties list
  - RDF URI display in most recent version
  - Versioning
- Model validation service
Example case: CRMsci - https://cidoc-crm.org/crmsci/

Stable version 2.0 released on March 2023 based on version 7.1.2
Namespace: http://www.cidoc-crm.org/extensions/crmsci/
Repository: https://gitlab.isl.ics.forth.gr/cidoc-crm/compatible-models/crmsci
  • (Rdf, Supplement, Owl, PC module is not required)

Documentation issues
• 1 Property without quantification (O15)
• 2 Properties without FOL specifications (O17, O28)

Model specification statistics:
• 23 Classes / 29 Properties / 38 External references to Cidoc-CRM 7.1.2

RDFs generation policies
• 23 Classes / 29 forward Properties / 28 inverse Properties
• 1 property pointing to rdfs:Literal (O30 determined position)
• 1 inverse property (O30i was determined by) cannot be expressed in RDFs

TV, AK, MD
• Ready?
Example case: CRMinf - [https://cidoc-crm.org/crminf/](https://cidoc-crm.org/crminf/)

**Draft** version 1.0 released on October 2023 based on version 7.1.2


- (Rdf, Owl, PC module and Supplement module are not required)

**Documentation issues:**

- Documentation includes *change suggestions* which were all accepted in order to produce encodings
- Documentation includes *comments* which were all ignored in order to produce encodings
- superClassOf and superPropertyOf are not specified at all

**Model specification statistics:**

- 15 Classes / 17 Properties
- 21 External references to Cidoc-CRM 7.1.2 (16), CRMsci 2.0 (3), CRMarchaeo 2.0 (2)

**RDFs generation policies**

- 1 Class ([I6 Belief](#)) implemented as rdfs:Literal
- 1 property ([J5 holds to be](#)) points to rdfs:Literal

PF, MD, SdS (doc issues? Can referenced classes be used? Can replace 0.7 b?)
Example case: CRMdig - https://cidoc-crm.org/crmdig/

Draft version 1.0 released on December 2022 based on version 7.1.1
Namespace: http://www.cidoc-crm.org/extensions/crmdig/
Repository: https://gitlab.isl.ics.forth.gr/cidoc-crm/compatible-models/crmdig
• (Rdf, Owl, PC module and Supplement module are not required)

Documentation issues:
• 1 property without inverse name (L60 documents)
• No Class or Property examples
• No Property Quantification
• 9 superPropertyOf statements are missing

Model specification statistics:
• 14 Classes / 23 Properties
• 29 External references to Cidoc-CRM 7.1.2

RDFs generation policies
• L60i should be implemented or not? Should it use the forward direction name?

GB, RS, MD
• Can it be considered stable?
Example case: CRMtex - https://cidoc-crm.org/crmtex/

Stable version 2.0 released on June 2023 based on version 7.1.2
Namespace: http://www.cidoc-crm.org/extensions/crmtex/
Repository: https://gitlab.isl.ics.forth.gr/cidoc-crm/compatible-models/crmtex
• (Rdf, Owl, PC module pending - required for 1 property)

Documentation issues
• minor issues some links to be removed

Model specification statistics:
• 14 Classes / 17 Properties
• 34 External references to Cidoc-CRM 7.1.2, Crminf 0.7(b), CRMsci 2.0, FRBRoo 2.4

RDFs generation policies - No differentiations from model specification

PF, AF, FM, MD
• Add in resources CRMsci, Crminf, FRBR?
• Which versions of external resources? Switch to Irmoo?
• Ready?