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Navigating the Semantic Model: a CIDOC CRM Browser

Cinzia Luddi, Achille Felicetti

VAST-LAB, PIN, Italy



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General Goals

- **Internal use**
 - Usually: open the CIDOC CRM Document (PDF, Word), search for entity/property number/name, search in scope notes, identify properties, domain, range, check inheritance, go through relationships, follow paths ...
- **Reply to common questions**
 - “Which are the properties of a given class?” (Domain)
 - “Where a given property goes from here?” (Range)
 - “Which are the inherited properties of a given class?”
 - “Which paths connect class A with class B in the model?”
 - “Which steps should I follow to go from A to B in a meaningful way”?
 - “Which paths should I use for rendering the concept of ...?”
 - Classes’ Scope Notes

General Goals

- **Viewer/Browser Assistant**
 - To provide a quick focus on what you have in mind
 - To assist in building CIDOC CRM valid statements
- Inspired by SYNERGY “Mapping Suggester” component
- To exploring and (hopefully) provide a better knowledge of the model
- Mapping Memory Manager
 - Sequential mapping
 - “Build” paths in mind before apply
 - Starting and ending points

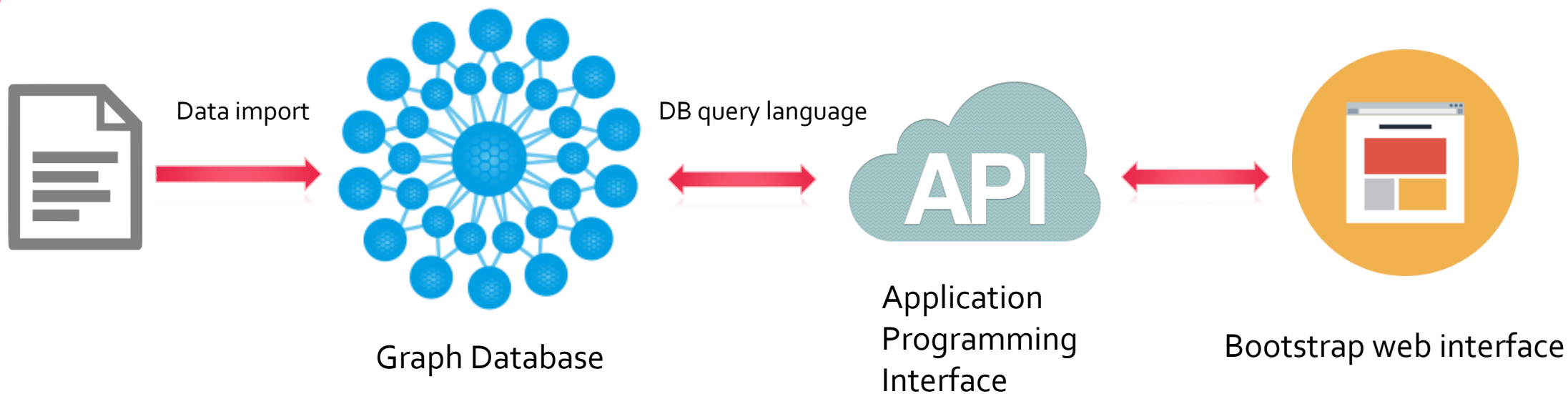
CIDOC-CRM Browser



CIDOC CRM, version 6.2, encoded in RDFS
`cidoc_crm_v6.2-draft-2015August.rdfs`

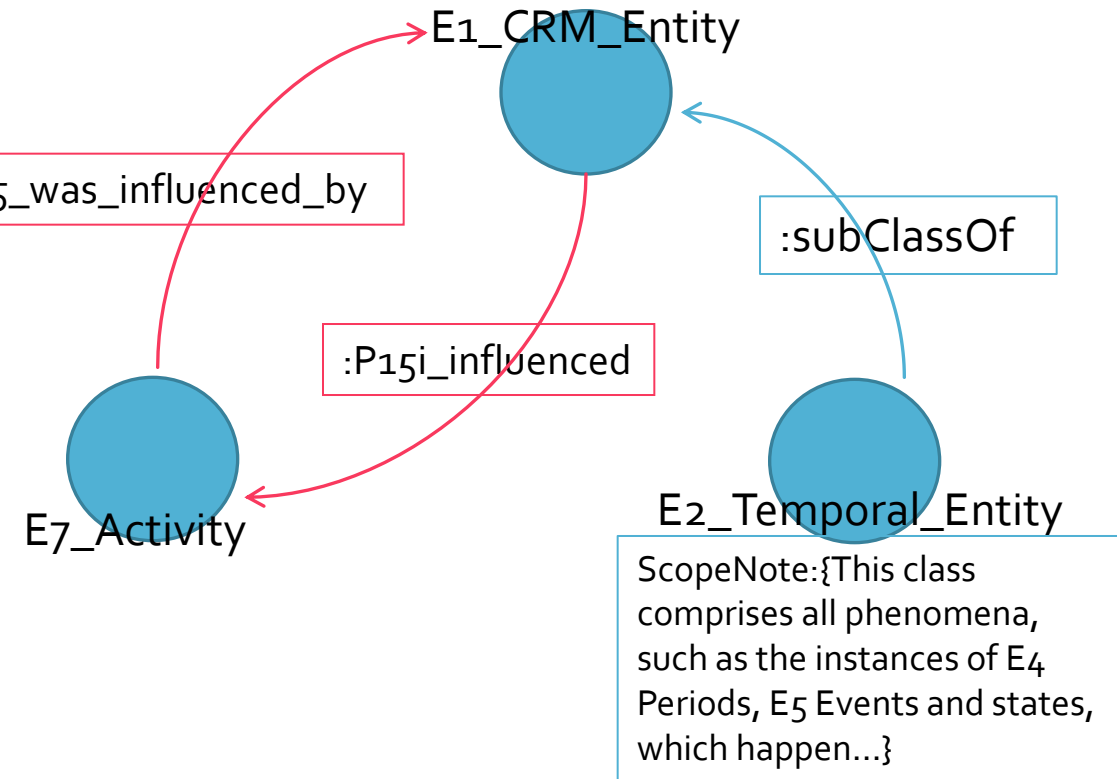
CIDOC CRM Mapping Assistant
navigation web interface

CIDOC-CRM Browser: technologies



Graph Database Model

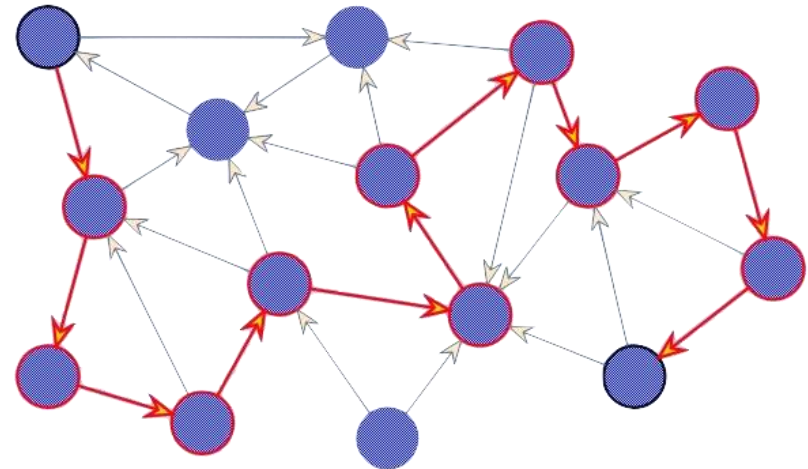
- Everything is stored in form of either an edge, a node or an attribute.
- Each node and edge can have any number of attributes.
- Both the nodes and edges can be labelled.
- Labels can be used to narrow searches.



Query connected data

Customizable parameters:

- Max path length
- Direct or indirect path
- Specific intermediate node



Live demo

Mapping Assistant

E70_Thing

Search in scope note

- E1_CRM_Entity Info
- E77_Persistent_Item Info
- E70_Thing**
- E71_Man_Made_Thing Info
- E72_Legal_Object Info

E70_Thing -> P16i_was_used_for -> E7_Activity

E70_Thing -> P43_has_dimension -> E54_Dimension

E70_Thing -> P101_had_as_general_use -> E55_Type

E70_Thing -> P130i_features_are_also_found_on -> E70_Thing

E70_Thing -> P130_shows_features_of -> E70_Thing

E70_Thing -> P12i_was_present_at -> E5_Event

E70_Thing -> P17i_motivated -> E7_Activity

E70_Thing -> P15i_influenced -> E7_Activity

E70_Thing -> P140i_was_attributed_by -> E13_Attribute_Assignment

E70_Thing -> P141i_was_assigned_by -> E13_Attribute_Assignment

E70_Thing -> P39i_was_measured_by -> E16_Measurement

E70_Thing -> P41i_was_classified_by -> E17_Type_Assignment

E70_Thing -> P62i_is_depicted_by -> F24_Physical_Man_Made_Thing

E77_Persistent_Item

Search in scope note

- E1_CRM_Entity Info
- E77_Persistent_Item**
- E39_Actor Info
- E70_Thing Info

E5_Event -> P12_occurred_in_the_presence_of -> E77_Persistent_Item

E63_Beginning_of_Existence -> P92_brought_into_existence -> E77_Persistent_Item

E64_End_of_Existence -> P93_took_out_of_existence -> E77_Persistent_Item

E81_Transformation -> P123_resulted_in -> E77_Persistent_Item

E81_Transformation -> P124_transformed -> E77_Persistent_Item

E6_Destruction -> P93_took_out_of_existence -> E77_Persistent_Item

E6_Destruction -> P12_occurred_in_the_presence_of -> E77_Persistent_Item

E7_Activity -> P12_occurred_in_the_presence_of -> E77_Persistent_Item

E8_Acquisition -> P12_occurred_in_the_presence_of -> E77_Persistent_Item

E9_Move -> P12_occurred_in_the_presence_of -> E77_Persistent_Item

E70_Thing

Search in scope note

E77_Persistent_Item

E70_Thing
P16i_was_used_for
E7_Activity
P20_had_specific_purpose
E5_Event
P12_occurred_in_the_presence_of
E77_Persistent_Item

E70_Thing
P16i_was_used_for
E7_Activity
P20_had_specific_purpose
E5_Event
P12_occurred_in_the_presence_of
E77_Persistent_Item

E70_Thing
P101_had_as_general_use
E55_Type
P21i_was_purpose_of
E7_Activity
P20_had_specific_purpose
E5_Event
P12_occurred_in_the_presence_of
E77_Persistent_Item

E70_Thing
P101_had_as_general_use
E55_Type
P32i_was_technique_of
E7_Activity
P20_had_specific_purpose
E5_Event
P12_occurred_in_the_presence_of

- **Properties**
 - “What are domain and range of a given property?”
 - “By which classes a given property is inherited?”
 - “Which paths a given property is involved in?”
 - Refine the path according with properties
 - Properties’ Scope Notes

Future Work

- Integrate into 3M and SYNERGY for mapping operations
- Possibility to upload extensions (CRMsci, CRMarchaeo)
- Agnostic interface: to be used with other ontologies



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Thank you

- Achille Felicetti
- *PIN, Università degli Studi di Firenze, Italy*
- *achille.felicetti@pin.unifi.it*



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 **ARIADNE**