



# CIDOC CRM Diagramming Applications

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Session 3.3: Search and learning  
Application Software  
59th CIDOC CRM SIG  
September 26, 2024





# Agenda

- **CRITERIA** - Cidoc cRm In Triples mERmaid dIagrAmS
- **diagrams.net shape libraries**

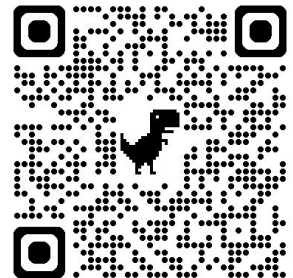


# CRITERIA

Version 2.0

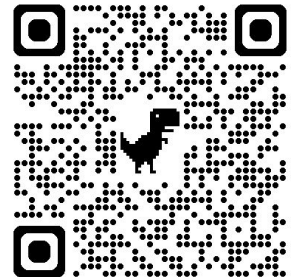
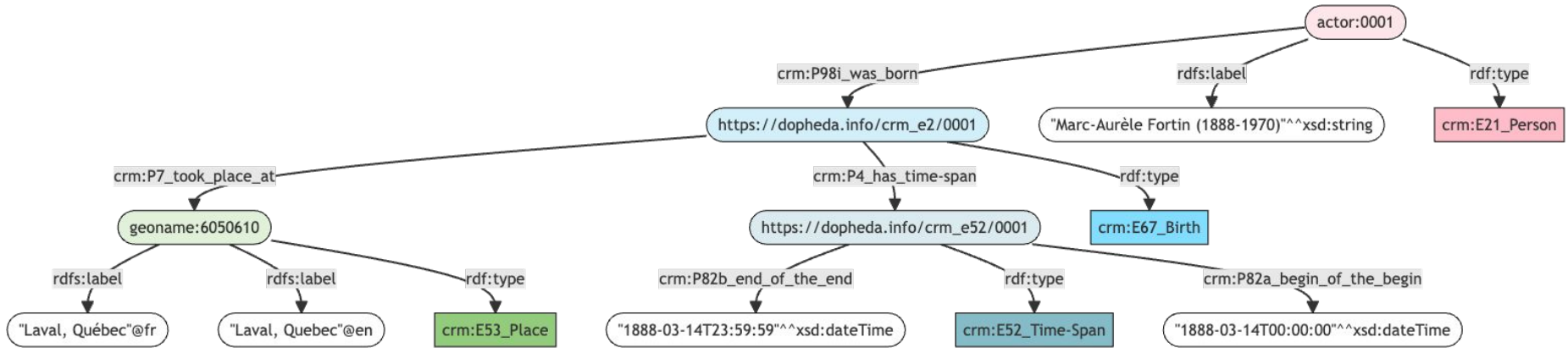
# CRITERIA

- A Python tool converting **RDF data** into **Mermaid markdown** syntax, rendered as a (flowchart) diagram by Mermaid javascript.
- Generate two types of diagrams from the same RDF data:
  - **Instance**: including all the "instances" of the RDF, i.e., both URIs and literal values.
  - **Ontology**: including ONLY the classes and the properties, i.e., the ontological part "ontology" of the pattern.



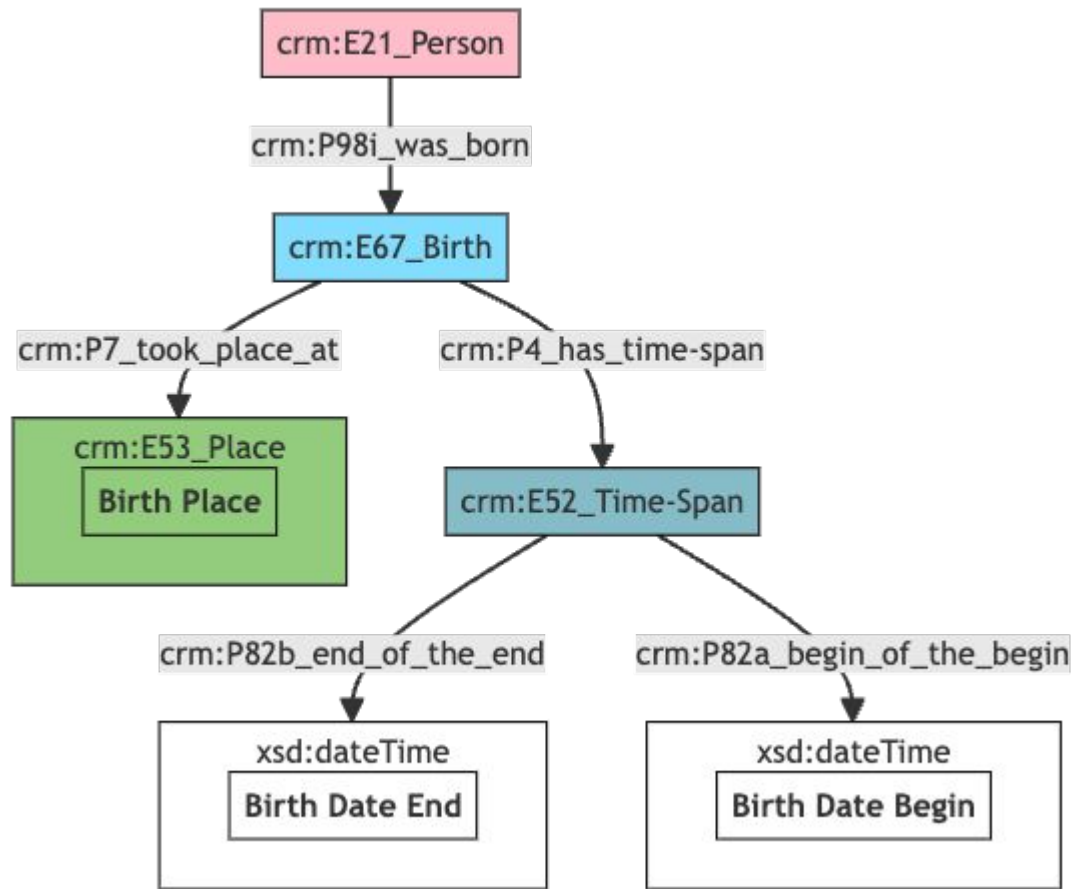
# CRITERIA

- Instance example



# CRITERIA

- Ontology example



# CRITERIA

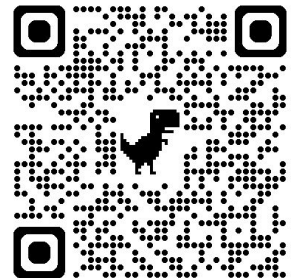
Optional functions:

- **Node annotation:** utilizing SHACL syntax to annotate a node in the ontological diagram, such as node name, example value, or link to node documentation.
- Configuration:
  - **Colour scheme:** customize the background colour, the border colour, and the font color of class nodes and instance nodes.
  - **Source ontologies:** overwrite the default ontologies
    - CIDOC CRM (v7.1.1) *(to be updated to v7.1.3)*
    - FRBRoo (v2.4)
    - CRMpc (v7.1.1) *(to be updated to v7.1.3)*
    - CRMdig (v3.2.2) (retrieved from [FORTH's 3M])
    - CRMarcheo (v1.4.1)
    - CRMsci (1.2.6)



# CRITERIA

- NOT suitable for visualizing an entire dataset, or even an entire data model pertaining to an entity, for the following reasons:
  - Mermaid handles nodes of the same level in its flowchart by spreading them either horizontally or vertically so that the result quickly becomes crowded;
  - The levels flow in either top-down or left-right directions, making the connections between nodes in non-consecutive levels difficult to read.
- Intended user groups:
  - Ontologist/Data modeller
  - CIDOC CRM user/learner
  - Developer (technical and/or content)





# CRITERIA

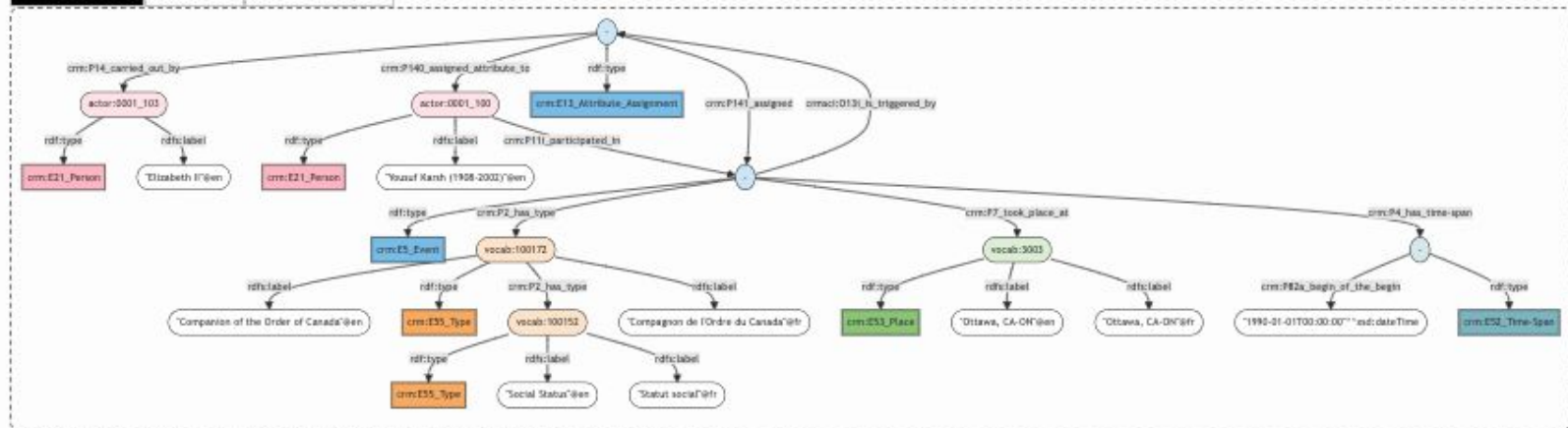
## Target Model Specification (TMS)

### Examples

#### Example 1

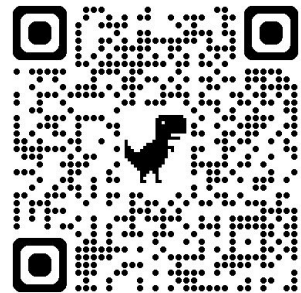
In 1990 (P82a\_begin\_of\_the\_begin, Social Status Date Begin), Yousuf Karsh was awarded the Companion of the Order of Canada (P2\_has\_type, Social Status Type) by Queen Elizabeth II (P190\_has\_symbolic\_content, Social Status Ascribing Actor Appellation) in Ottawa, CA-ON (P7\_took\_place\_at, Social Status Place). The social status was maintained even after Yousuf Karsh's death in 2002 (Hillmer 2018; Skidmore 2015).

Diagram Turtle JSON-LD



# CRITERIA

- Command Line Interface (CLI)
  - This method is of interest to users who want to use CRITERIA programmatically, for example, for batch process and/or implementation purposes in a larger system.
- Live demonstrator:
  - This option is of most interest to users who want to generate diagrams on the go and quickly.



# CRITERIA - Live demo





# diagrams.net libraries

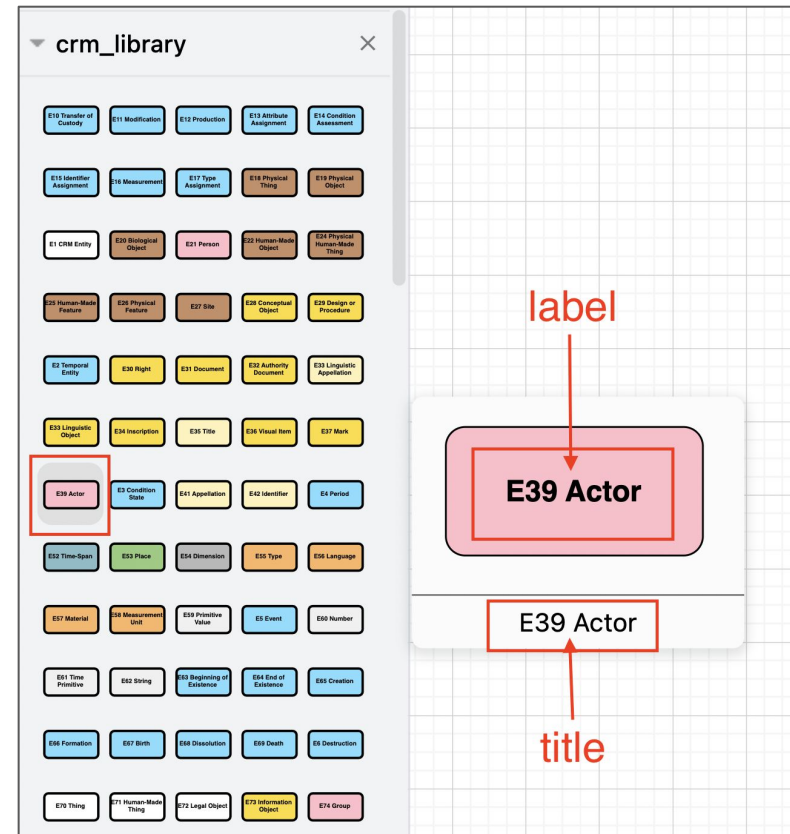
# diagrams.net libraries

- A collection of **custom shape library files (.xml) of CIDOC CRM ontologies** used to represent semantic patterns through **diagrams.net**, an open source diagramming application.
- Eight libraries for the following CIDOC CRM ontologies (officially released in RDFS format).
  - CIDOC CRM base (version 7.1.3): includes two libraries, one with properties' quantification, and one without.
  - FRBRoo (version 2.4)
  - PRESSoo (version 1.0)
  - CRMdig (version 3.2.2)
  - CRMpc (version 7.1.3)
  - CRMarchaeo (version 1.4.1)
  - CRMgeo (version 1.2)
- *This work is inspired by [the work of Nicola Carboni](#).*



# diagrams.net libraries

- A custom library is a set of pre-designed shapes that can be easily dragged and dropped in the drawing canvas to facilitate the drawing process.
- Each library contains the shapes of all the **classes** as well as the connectors for the **properties** of each ontology.
- The colour scheme and the styling of the shapes are based on a proposal by CIDOC CRM SIG for CIDOC CRM.



# diagrams.net libraries



# "Wish list"

- A "complete" RDFS of ontologies.
- A dedicated triple for other information such as quantifications.



# Thank you!

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