

Elias Tzortzakakis (ICS-FORTH): Draw.io to Triples

Presentation at the 57th CIDOC CRM

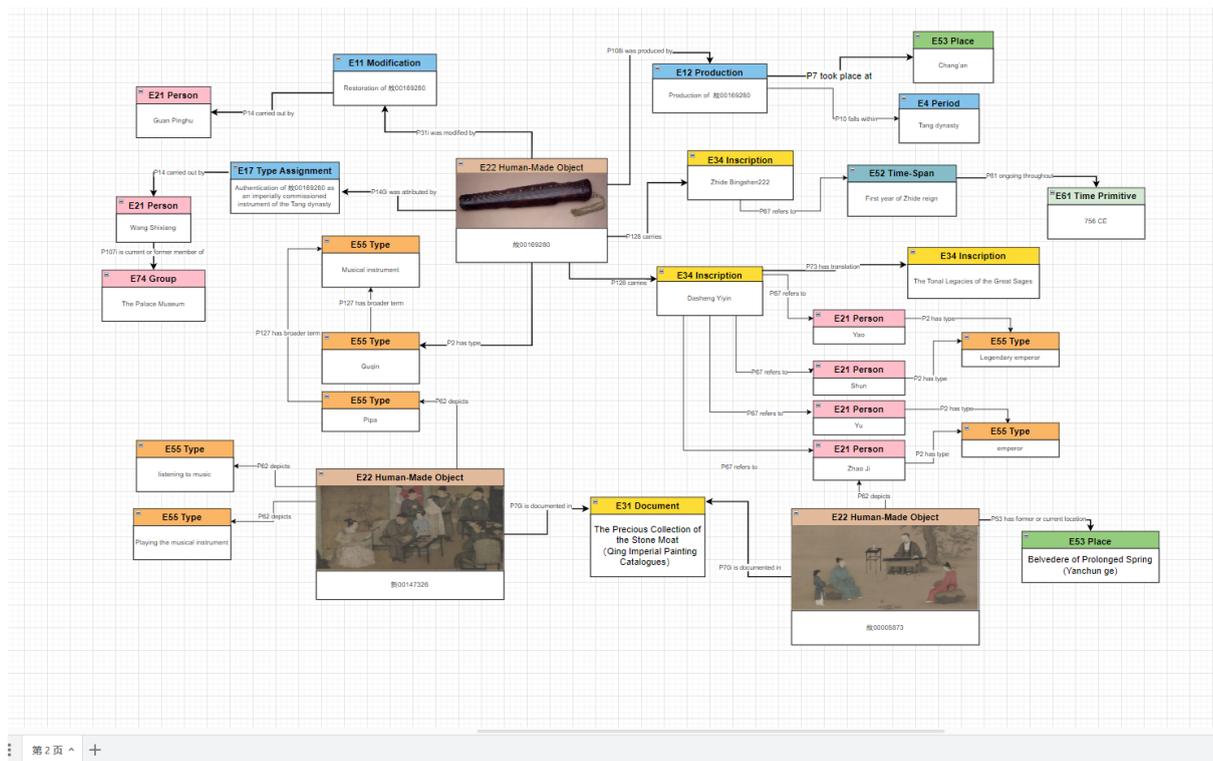
Objective

Use a draw.io diagram as the visual representation of a CIDOC-CRM example in order to

- transform the diagram to triples
- Validate the diagram

Example input

<https://app.diagrams.net/>



Example output

Info:

- Detected diagram with name: '第 2 页' and id: 'a-Vn3DHuyyXJn_90lJn'. Used namespace: 'http://www.cidoc-crm-from-draw.io/'
- The diagram included 32 instance nodes connected with 34 property nodes (arrows). The number of instances and classes in the current file may differ due to the aforementioned warning messages.

Warnings:

- The detected Property: 'P81_ongoing_throughout' of instance with id: 'wUii4lsHSiQhUUWlJ7-A-117' specifies a range to an instance of type: 'E61 Time Primitive' that has been mapped to: rdfs:Literal.

Turtle Output [Download Turtle file](#)

RDF output [Download RDF file](#)

Delete files & Retry

```
1 @prefix crm: <http://www.cidoc-crm.org/cidoc-crm/> .
2 @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
3
4 <http://www.cidoc-crm-from-draw.io/> a rdfs:Resource ;
5 rdfs:label "CIDOC-CRM v7.1.1.2 example produced by input file: 'test.drawio.xml' " ;
6 rdfs:comment ""
7 - Warning: The detected Property: 'P81_ongoing_throughout' of instance with id: 'wUii4lsHSiQhUUWlJ7-A-117' spe-
8 - been mapped to: rdfs:Literal.
9 - info: Detected diagram with name: '第 2 页' and id: 'a-Vn3DHuyyXJn_90lJn'. Used namespace: 'http://www.cidoc-
10 - info: The diagram included 32 instance nodes connected with 34 property nodes (arrows). The number of instan-
11 - aforementioned warning messages.
12 "" .
13
14 <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-5> a crm:E22_Human-Made_Object ;
15 rdfs:label "故00169280" ;
16 crm:P108i_was_produced_by <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-13> ;
17 crm:P128_carries <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-22>,
18 <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-8> ;
19 crm:P138i_has_representation <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-130> ;
20 crm:P140i_was_attributed_by <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-72> ;
21 crm:E2_has_type <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-36> ;
22 crm:P31i_was_modified_by <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-1> .
23
24 <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-87> a crm:E22_Human-Made_Object ;
25 rdfs:label "新00147326" ;
26 crm:P138i_has_representation <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-55> ;
27 crm:P62_depicts <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-21>,
28 <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-34>,
29 <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-35> ;
30 crm:P70i_is_documented_in <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-91> .
31
32 <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-97> a crm:E22_Human-Made_Object ;
33 rdfs:label "故00005873" ;
34 crm:P138i_has_representation <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-105> ;
35 crm:P53_has_former_or_current_location <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-102> ;
36 crm:P62_depicts <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-97> ;
37 crm:P70i_is_documented_in <http://www.cidoc-crm-from-draw.io/wUii4lsHSiQhUUWlJ7-A-91> .
38
39 <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-1> a crm:E11_Modification ;
40 rdfs:label "Restoration of 故00169280" ;
41 crm:P14_carried_out_by <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-8> .
42
43 <http://www.cidoc-crm-from-draw.io/D3tYJO4zNhl_pl3f19GN-105> a crm:E36_Visual_Item ;
44 rdfs:label
45 "data:image/png;base64,iVBORw0KGgoAAAANSUHEUgAAAZEAAAEECAyAAADpigmAAAAAXNSR0IARs4c6QAAAAARQU1BAACxjvw8YQOU.
46 RbQyRLWx5qSGRom9GV/DtA9+AD3wdPrLLdLDFCUPkqIGTTHs8OU3dw5AA2h08vN7zhX63euPQlWtNfOaa65Q6cL/7f/y37xfLiXN799n
47 dnSw3D64BTN4wLFPg9Tzbu8BdCj0lykDh8/bd+XK5Yuh/66yXlpOMXkMDjzC4uVzus3b3I2cg+GMCgL5cCFImHfYJGz95juG8WfPeB.
48 r5erV6MrmsC8y2M3sUWYmK0t233C+H799HnxzQ7UlgHUsBrS70I4Nc+0uXUuFRXboc2d++Fvcm5KA/GYfC2Fa9IEmv6hoAOLy6KnlNG.
49 aXR4e3l1N+799EXbhJ937x+WlnptKXx01le3quc6MhLRgivrMAUP2eR0V7ds2vrOod8Tf6100f1ykOnzedThlh8Nns/ePx802k9XFZ2ry5:
50 Vm2dm5FPqvlzsh8ul0D85e7dcef9mebNcWm7sXVyuRLjvnhymje8s+1cvLq9D6saly/HRy8vTo9fLwW7y4i8XL15anr88WY7EPvi/isz7.
51 Hr5aLqbdYJ3a/gp0vlyfxx2X30RX92r/168EJxDhx01v700tL8Pv4eFxbHA5fMM/dX1wdVmeH792bulfrU+9ih6vL+8vb06P18vVXi2f3:"
```

Requirements

- **Instances:** Each set of boxes must define 1 instance. It must consist of
 - 1 Class definition box
 - 0..1 rdfs:label box
 - 0..1 image (image existence is actually translated to P138i has representation(x,y) where x the current Class instance and y a E36 Visual item with rdfs:label the base64 encoding of the image)
- **Properties:** Each arrow must have been appropriately connected to the instances and include an integrated (not a separate object) text value that identifies it

Error Handling

- No triples file creation in case there exist error messages. Error messages refer to detected inconsistency cases such as incorrect domain/range specification of properties. May result in correction of:
 - arrow direction
 - arrow identifier label
 - property domain or range instance
- Output of Warnings and partial output with additional information of what could not be transformed into triples (e.g. for manual handling)
 - Interpretation of instances as Primitive classes
 - Properties with domain a primitive class
 - Unknown classes/properties usage

https://isl.ics.forth.gr/cidoc_services/

Username/password crm_user/cidoc_services

Then navigate to option “Draw.io diagrams to triples”

<https://demos.isl.ics.forth.gr/RDFV/>

TODOS

- MD proposed to add this as a didactic tool
- Reporting of wrong labels
- Multiple inheritance
- PC classes
- Configuration input
 - Namespace

- Models to load (different CRM version, FMs, PC Classes etc)