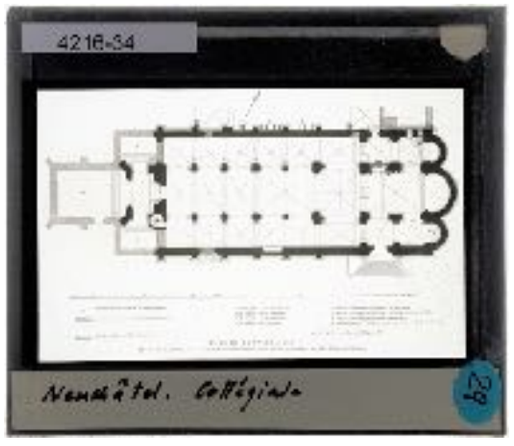
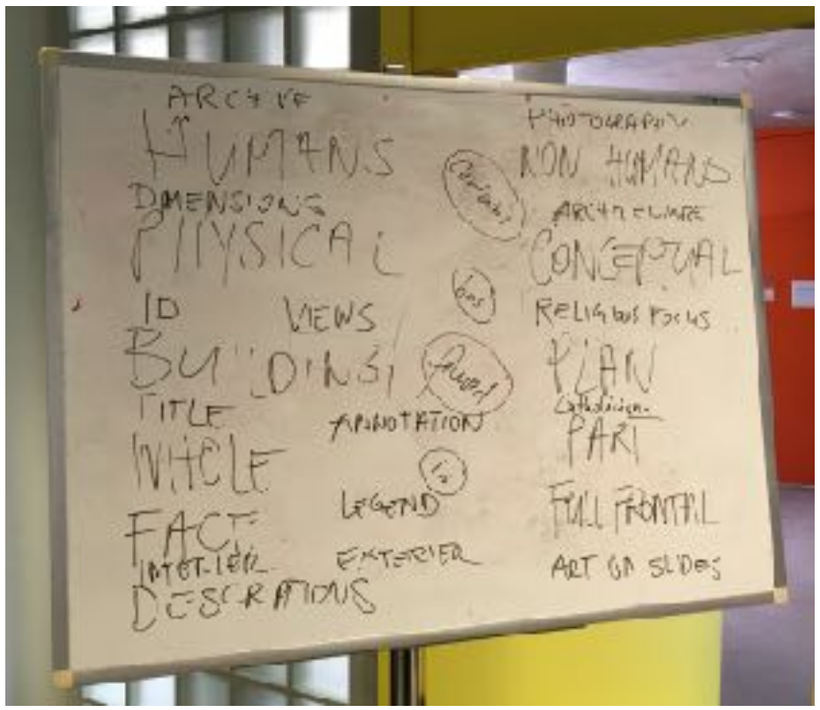


As a base for the workshop we used historic slides. This medium was the main way of conducting art historic teaching and research for many decades and today has become a topic of research on its own. Because it is such a complex thing to describe, what is the object, what the subject and because it depicts the whole range of art and architectural artefacts, it really can be tackled from many positions. What therefore immediately becomes clear is that only limited metadata describing the object will not be sufficient for researchers to grasp the whole complexity of these objects.

Modelling requires domain knowledge and is an iterative process

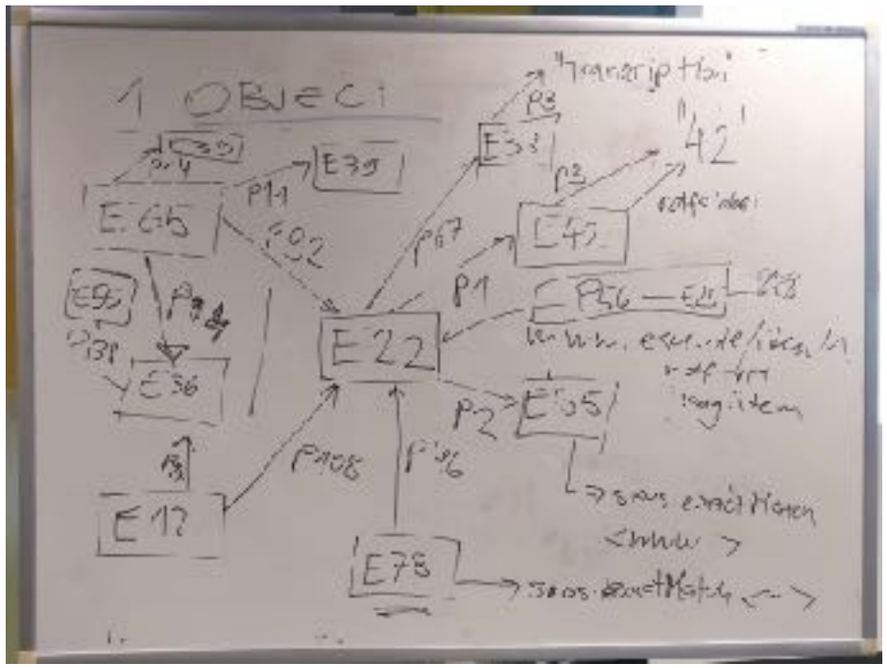


During yesterdays exercise, we had all the participants think about categories and relationships suitable to describe the photographic slides. Even though they were not familiar with the medium itself, nor had they had any additional information about the collection they came from and their use, nevertheless were they able to come up with many different ways of describing and using this small set of resources. Because of their different backgrounds, everybody from the group had slightly different points of interest and ways of approaching the problem.

The complexity of a photo archive

As already explained, photographs and especially collections of photographs are a good way to tackle data modelling. Because of their use they a use-case it offers lots of features. Similar to Dominic Oldmans example with the Wunderkammers, a photo archive contains a whole knowledge system. Depicted subject matter, classification schemas as well as educational processes can be modelled where needed.

Lots of possibilities, focus on your use-case



What is CIDOC-CRM?

- CIDOC stands for International Committee for Documentation of ICOM the International Council of Museums
- CRM is the Conceptual Reference Model of CIDOC
- in short: a model to describe cultural heritage that started in paper format in the late 80s and went through several technological advancements

In more detail

- SIG, the Special Interest Group, was tasked to standardise the model in order to make it ISO compliant.
- Nowadays the SIG is the main body and discussion forum of CIDOC-CRM, that works on the content, the publication as well as the technology involved.
- Main objective: connect data from the cultural heritage domain coming from different institutions in order to be able to make an informed scientific argument.

In more detail

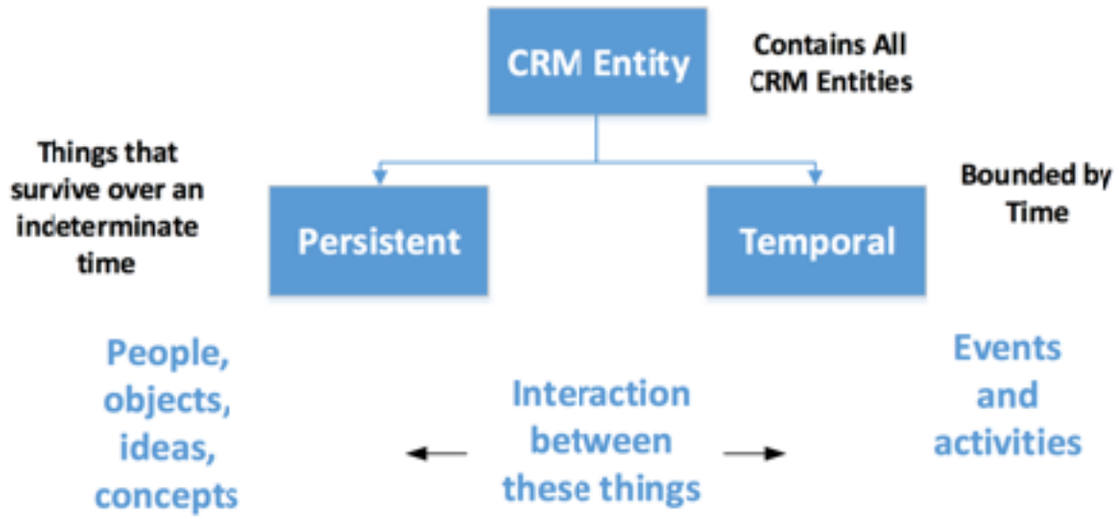
- capture not only descriptive data but also the underlying semantics
- organized in a formal structure, with „clearly“ defined concepts and relationships
- understood by humans and machines, therefore it needs to involve computer scientists and domain experts
- event based model

Until 1998 CIDOC existed as an Entity Relationship model, being derived from the technology of relational databases.
Not being flexible enough, it meant supporting a highly complex system that is impossible to maintain.
In 1996 CIDOC-CRM was born as a project to replace the E-R-model.

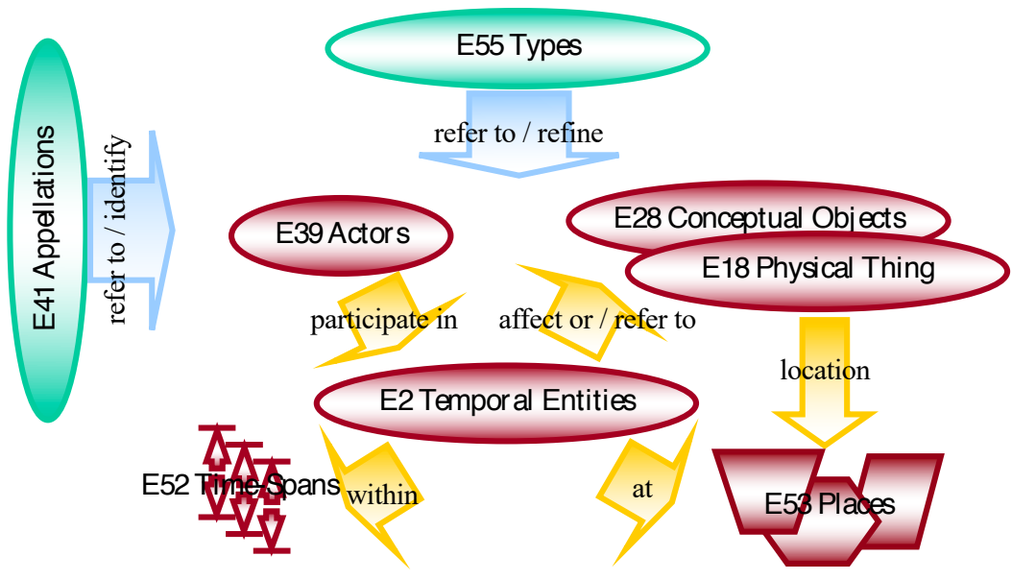
Definition - general

- The CIDOC CRM is an ontology - a form of knowledge representation. An ontology represents the categorical knowledge within a domain, in this case the cultural heritage domain. The function of a domain ontology is to mediate the variability within a domain and provide a framework under which we can collaborate despite having different datasets. It is a language, not a statement of current scholarly convictions.

Persistent and Temporary Things



There are the two key (disjoint) branches of the CIDOC CRM. There are things that have a persistent identity that can by their nature survive one or more events (physical things or ideas and concepts), and there are the temporal concepts (or phenomena) that have a nature of happening rather than being, over a limited time frame (an event or activity, like creation, or a historical period). Persistent entity types define instances that are initiators, recipients or witnesses of events and activities. They may originate, survive or terminate in events. This is the essence of the CIDOC CRM's event based model.



The CIDOC CRM is event based. At the core of this event model are Temporal Entities (E2) - things that have happened in the past.

[?] Only Temporal Entities can be linked to time and have Time Spans (E52). Objects (Conceptual (E28) and Physical Things (E18), Actors/People (E39), and Places (E53) cannot be directly linked to time. Therefore they must be linked to an event – a Temporal Entity (E2).

[?] A Place (E53) could be a geographical location on earth, but equally it could be a location defined as the front of a ship or the inside of a ring. These are places that are geometrically defined.

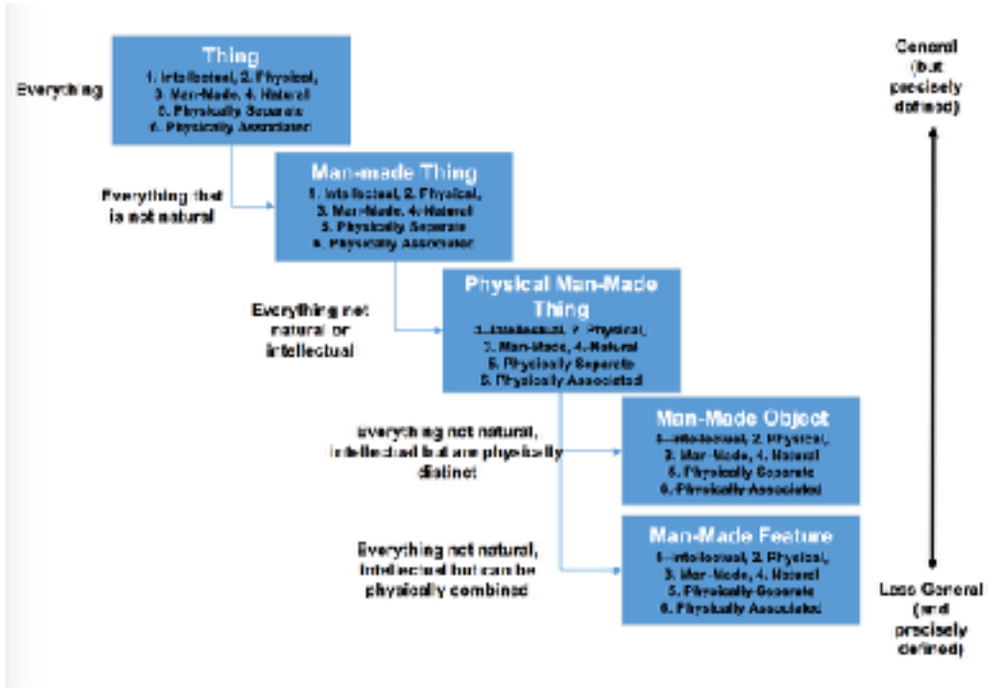
[?] Actors (E39) are entities with legal responsibility and an actor could be an individual or a group, for example, a school of artists or a company, and so on. Actors interact with things – both Physical Things (E18) and Conceptual Things (E28).

[?] Physical Things (E18) are destroyed when they cease to be functional in the sense of our domain of documentation and therefore destruction is not necessarily linked to physically disappearing. A thing could be physically destroyed and transformed (created) into something else preserving parts of it. That new thing then becomes part of our domain of interest.

[?] Conceptual Objects (E28) cannot be destroyed unless all carriers of it are destroyed. A carrier could be a book, a computer disk, a painting, etc., but it could also be the human mind. So destroying a conceptual object requires destroying all of its carriers, including people.

[?] It is very common to apply names to things and this is an Appellation (E41). An object title and inventory number are forms of appellation. The CRM allows us to name anything. Things can have multiple names and these names can change over time as a result of an event. This means that the use and application of names can be

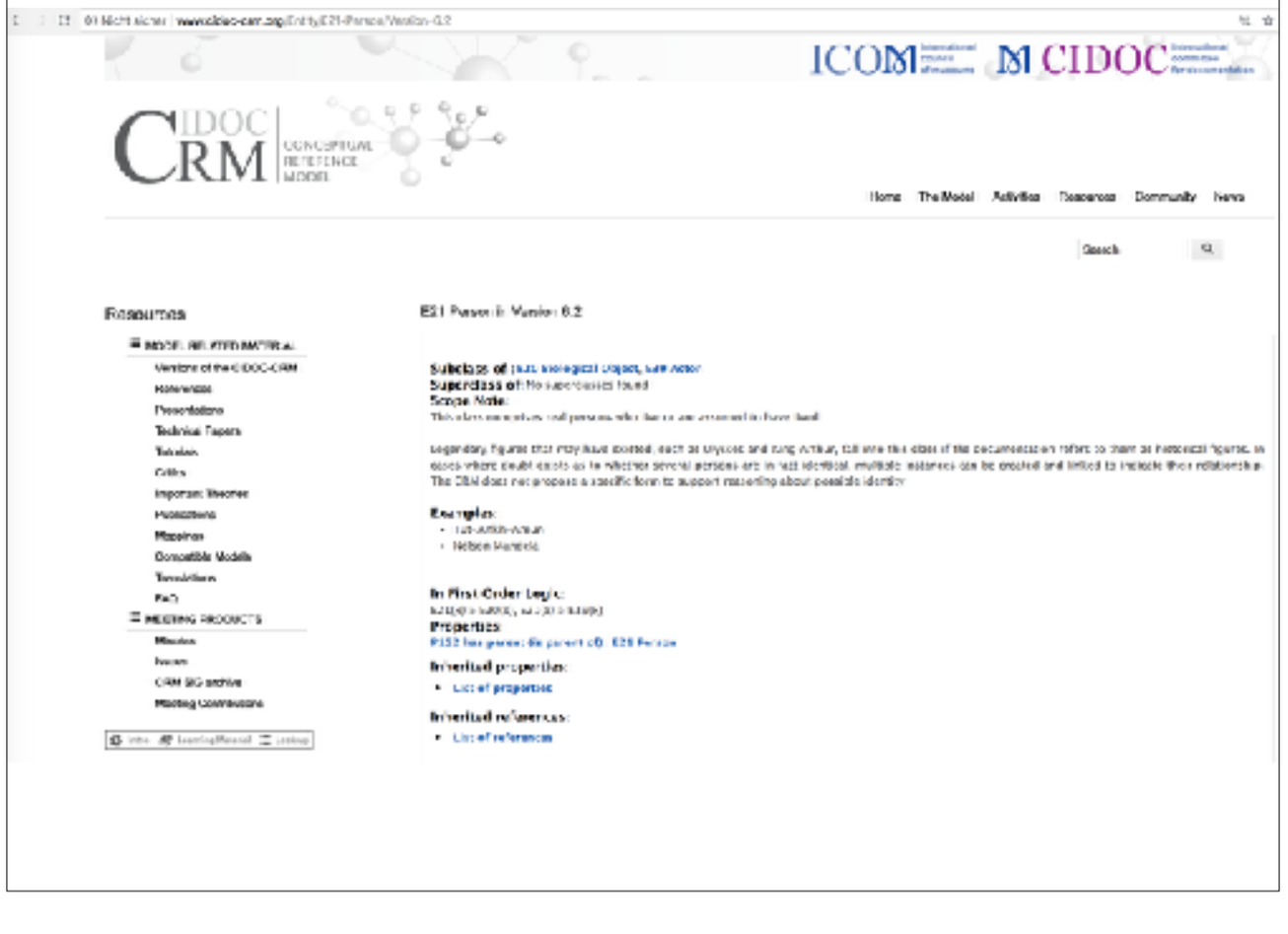
Poly-hierarchical



Entity types and relationships both exist in a hierarchy of meanings that provide different levels of generalisation (or specialisation depending on the way you look at it). This is important because we cannot always be precise about everything we want to describe, but when we can, we should. However, there is a point at which specialisations cease to become useful for harmonising data and where institutions might disagree. The diagram below shows how this hierarchy works. Entity types have sub types that are increasingly more specialised. Take a general entity like Thing. A ‘CRM’ Thing refers to things that have a stability of form, it could be man-made or natural, physical or intellectual, a feature of something else or a distinct object. If we know little about a Thing then we might use just this broader definition.

The key to understanding the CRM is understanding its structure - an understanding of the entity types and properties (and their descriptions through “scope notes”), the framework of relationships and how those relationships can be applied to the entity types, and applying these to an organisation’s understanding of their own data. This is not a technological undertaking.

By using events, CRM allows for making differentiated levels statements about individual entries.

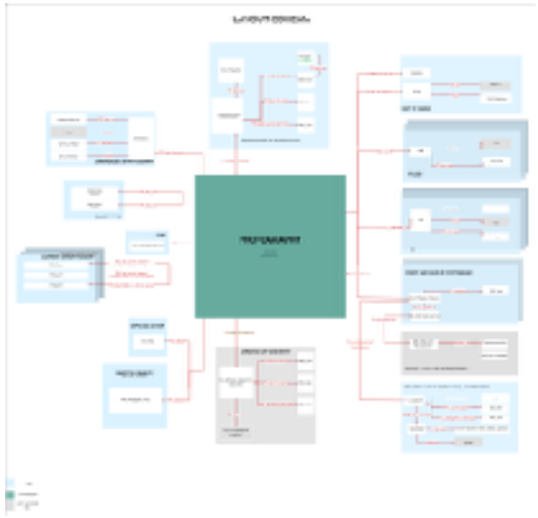

CIDOC CRM
CONCEPTUAL REFERENCE MODEL
ICOM
CIDOC
Home
The Model
Activities
Resources
Community
News
Search
Resources
E21 Person (): Version 6.2
Subclass of:
Superclass of: No superclasses found
Scope Note:
Examples:
In First Order Logic:
Properties:
Inherited properties:
List of properties
Inherited references:
List of references

Result of First iteration

Clear focus on the workflow

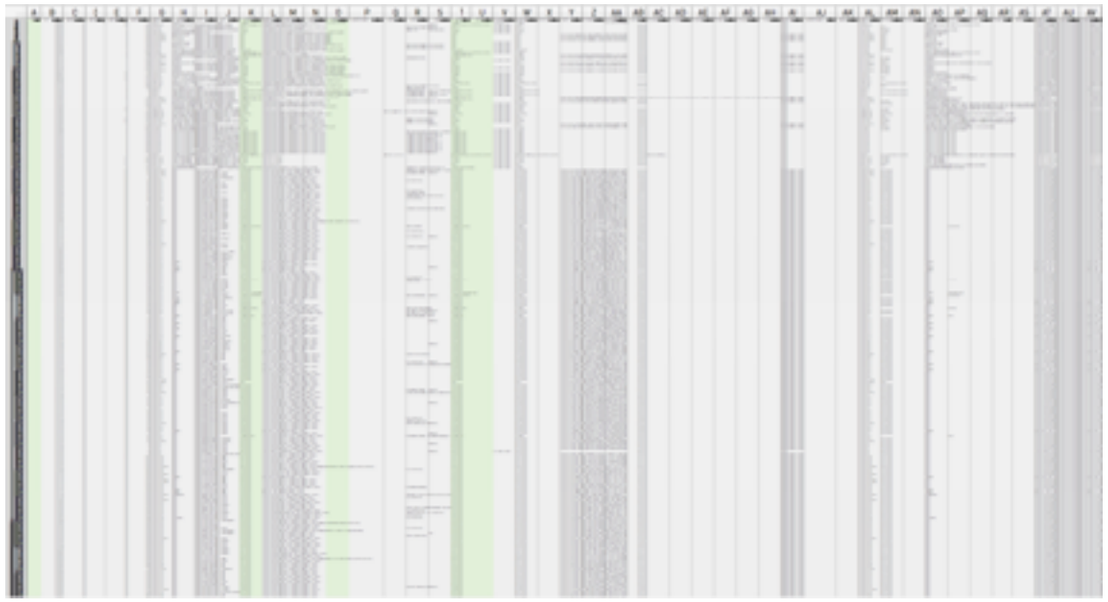
Current iteration

Reusing standards

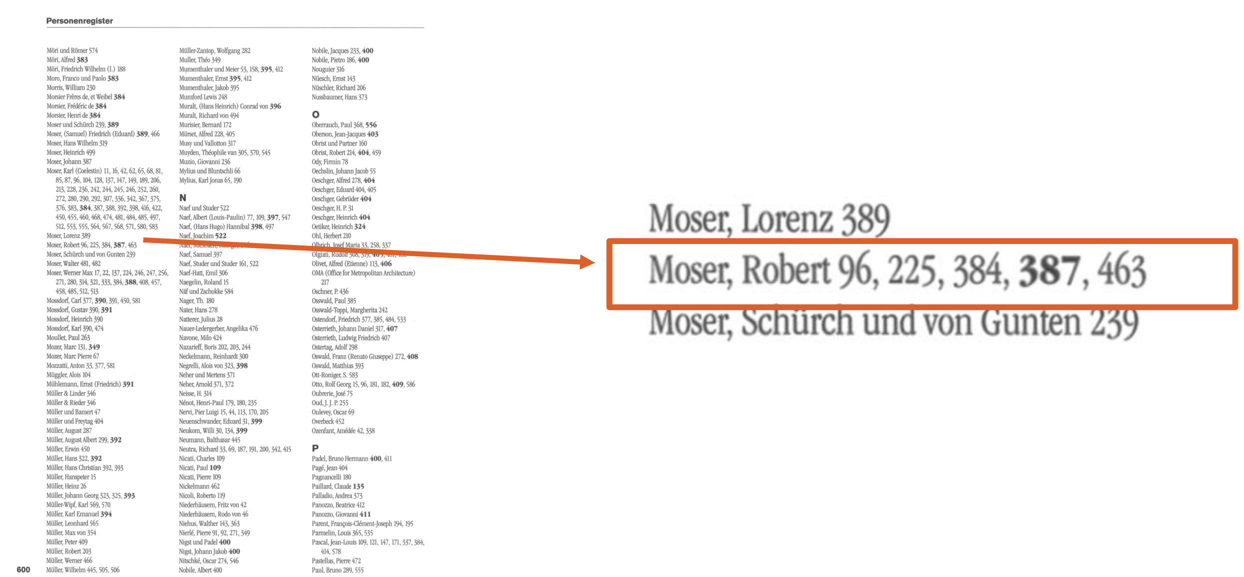


...

Here is how it looks like



Free text = implicit knowledge



Personenregister

Moser, Lorenz 389
Moser, Robert 96, 225, 384, **387**, 463
Moser, Schürch und von Gunten 239

Unique identifiers


Moser

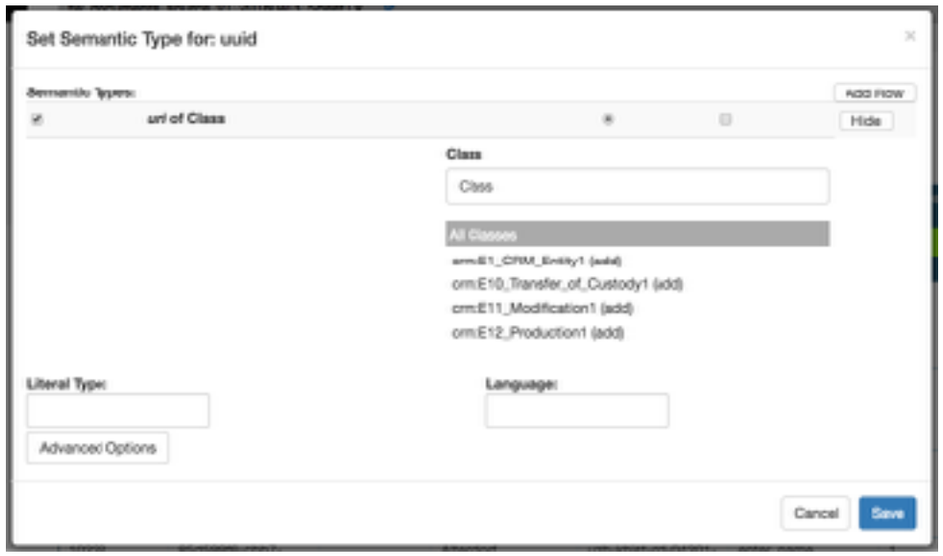
Moser, Robert

Moser, Robert

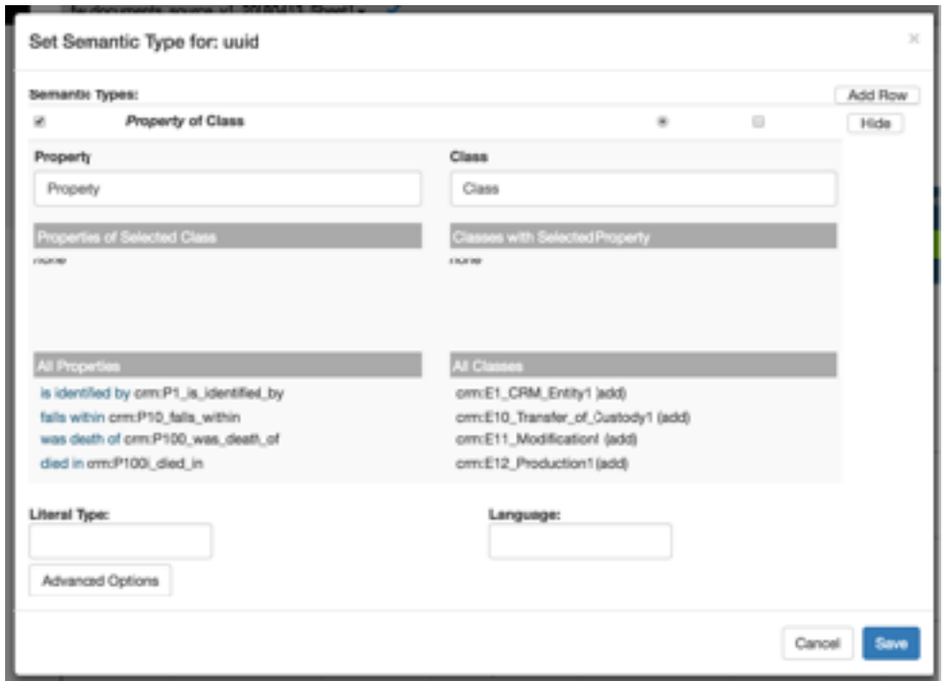
A	B
UUID	NAME
A13CC1BF-4FB0-4EFF-9C48-51644AD9AA36	Moser, Robert
EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7	Moser, Robert

Classes and Properties

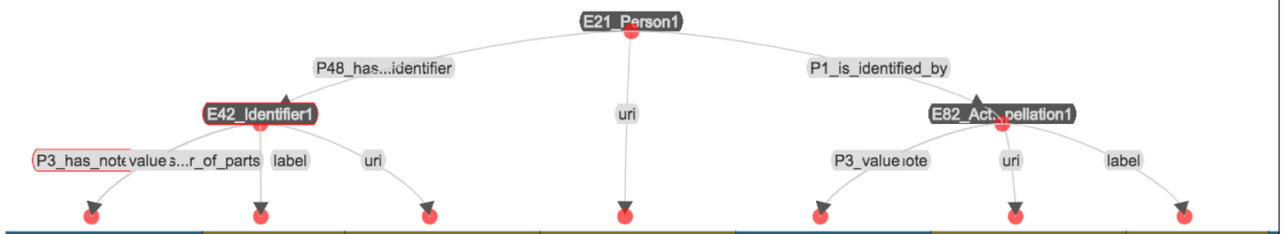
Stating what class an object belongs to



Adding relationships



Karma



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EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7	UUID	actor/EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7/u…	actor/EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7	Moser, Robert	actor/EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7/n…	preferred name

Being explicit takes space (and effort)

A	B
UUID	NAME
A13CC1BF-4FB8-4E7F-9E48-91044AB9AA36	Moser, Robert
EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7	Moser, Robert

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<http://sari/actor/EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7> <http://www.cidoc-crm.org/cidoc-crm/P1_is_identified_by> <http://sari/actor/EAF28CCB-2B36-48FD-BCB7-B0DB612FFFB7/name>
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