

Exploring CIDOC CRM datasets with A-QuB

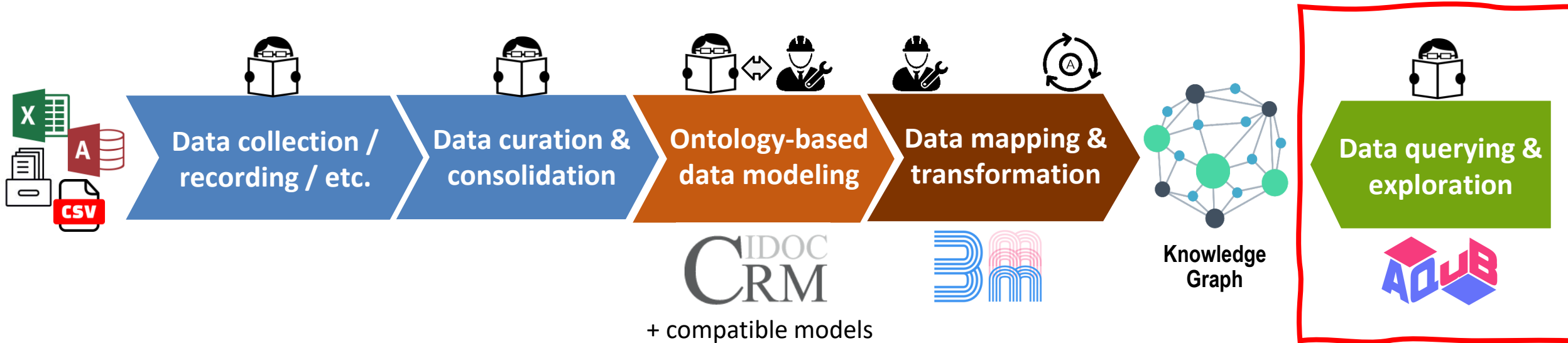
Towards a generic, user-friendly and ready-to-use
data exploration interface for end-users

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The usual workflow



 Researcher /
Domain Expert

 Data
Engineer

 Automated
process

The web application 'A-QuB'

❑ Web application operating over a knowledge graph

- It facilitates the **exploration** of semantic (RDF) data **by plain users** (like historians)
- It offers a **user-friendly** way to build and execute complex queries **step-by-step**
- It is highly **configurable** (for use over any ontology / data model)

❑ Other functionalities:

- data filtering (by string, date, number, location on map, ...)
- results browsing
- query save
- data export



❑ First version developed in 2018, in the context of the VRE4EIC project (H2020)

- **Related paper**: Kritsotakis, Vangelis, Yannis Roussakis, Theodore Patkos, and Maria Theodoridou. "Assistive Query Building for Semantic Data." In *SEMANTiCS (Posters & Demos)*. 2018. https://ceur-ws.org/Vol-2198/paper_107.pdf
- **FORTH development team**: Vangelis Kritsotakis, Yannis Roussakis, Konsolaki Konstantina, Pavlos Fafalios

❑ Available at: <https://github.com/isl/A-QuB-2>

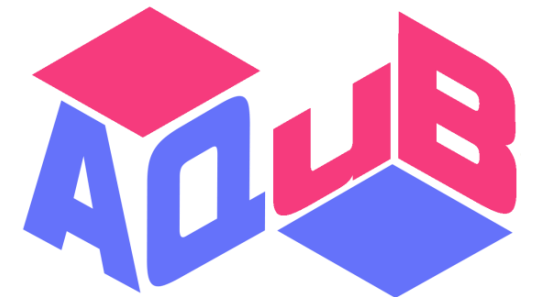
A-QuB – Architecture and Technologies

□ Architecture

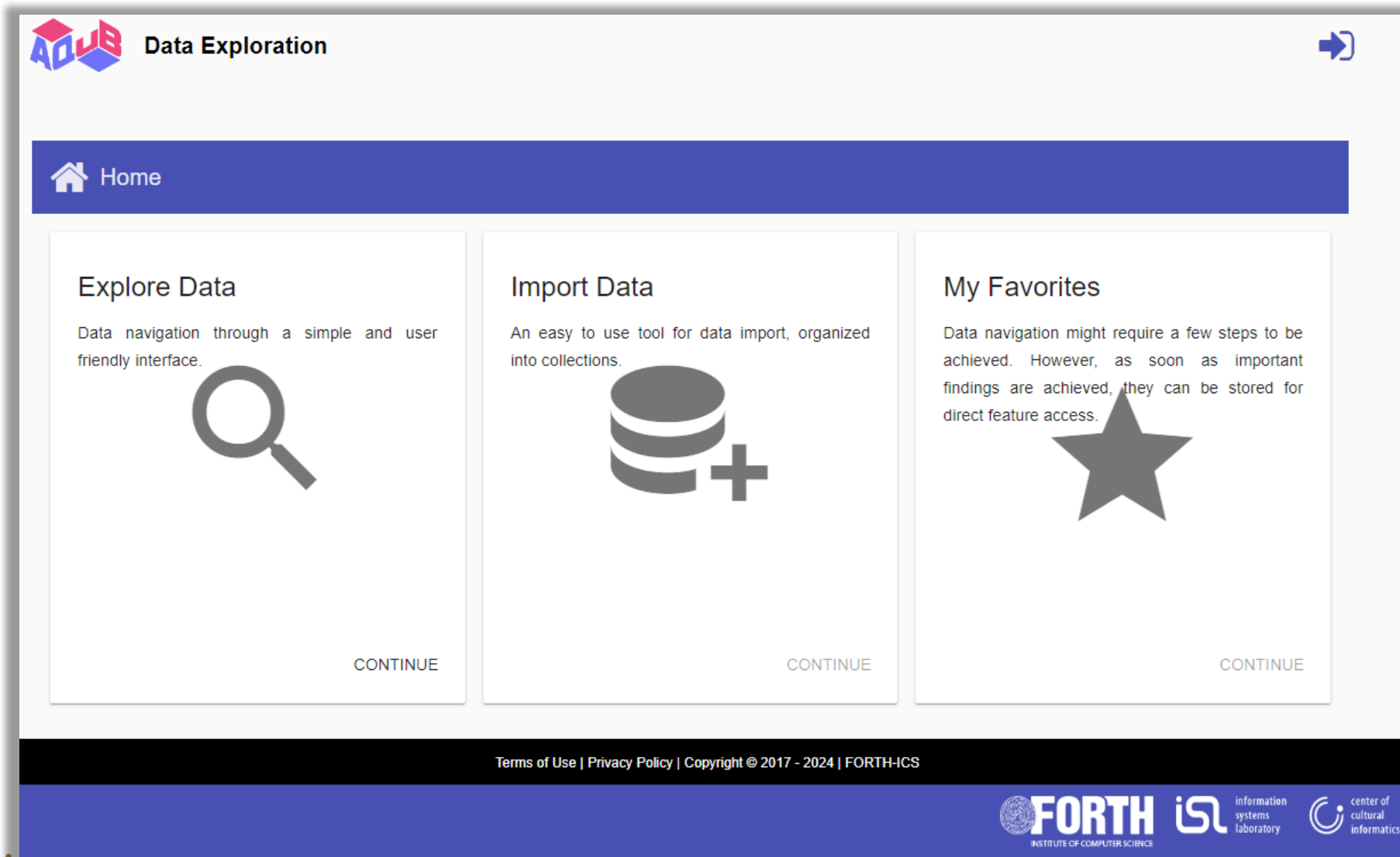


□ Technologies:

- Java / Spring framework
- Angular



A-QuB – The User Interface / Home Page



A-QuB – Import Data

The screenshot displays the A-QuB Data Exploration interface. At the top left is the A-QuB logo and the text "Data Exploration". At the top right is a home icon and the text "ADMINISTRATOR". A blue header bar contains the text "Import data from file(s)" on the left and "Content-Type: Automatic" with a help icon on the right. Below this, a file upload area shows a file named "records.trig" with a size of "87.7 KB". At the bottom, there is a dropdown menu currently set to "Automatic" with "SeaLIT" selected in a search box. To the right of the search box are "IMPORT DATA" and "RESET" buttons. The footer contains the text "Terms of Use | Privacy Policy | Copyright © 2017 - 2024 | FORTH-ICS" and logos for FORTH INSTITUTE OF COMPUTER SCIENCE, information systems laboratory, and center of cultural informatics.

A-QuB – Explore Data

A-QuB Data Exploration ADMINISTRATOR

Explore Data ☰ ☆ ⚙️ ?

Searching for...
Select Target Entity *

... related ... to entity
Select Relation Select Related Entity

SEARCH RESET

A-QuB – Selecting the querying collections

The screenshot displays the A-QuB Data Exploration interface. At the top left is the A-QuB logo and the text "Data Exploration". The main header is "Explore Data". The interface is divided into two main sections: "Searching for..." and "... related ... to entity". The "Searching for..." section has a dropdown menu labeled "Select Target Entity *". The "... related ... to entity" section has dropdown menus for "Select Relation" and "Select Related Entity". A red box highlights a hamburger menu icon in the top right corner of the "Collections" panel. The "Collections" panel is open, showing a list of collections: "Testing", "Messara", and "SeaLIT", each with a checked checkbox. A red circle highlights the list of collections. Below the list is a button labeled "APPLY CHANGES AND HIDE".

A-QuB – Searching for...



The screenshot displays the A-QuB Data Exploration interface. At the top left, the logo for the Archaeological Museum of Messara (MM) is visible, along with the text "Data Exploration". In the top right corner, there are navigation icons for a right arrow and a home icon. Below the header is a dark blue bar with a search icon and the text "Explore Data". To the right of this bar are three icons: a red circle with a white hamburger menu, a gear icon, and a question mark icon.

The main content area is divided into two panels. The left panel, titled "Searching for...", contains a dropdown menu with the following items: "Object (291)", "Monument (58)", "Place (98)", "Site (47)", "Digital Object (780)", and "Display Place (22)". A red rectangular box highlights the "Object (291)" item. A plus sign icon is located to the right of this panel. The right panel, titled "... related ... to entity", contains two dropdown menus: "Select Relation" and "Select Related Entity". A downward arrow icon is located to the right of this panel.

At the bottom left, there is a search button with a magnifying glass icon and the text "SEARCH". At the bottom right, there is a red button with a white target icon and the text "RESET".

A-QuB – Searching the entities of a specific type

The screenshot displays the A-QuB search interface. At the top, there is a blue header with the text "Explore Data" and several icons (share, menu, settings, help). Below the header, the search area is divided into two main sections. On the left, a box titled "Searching for..." contains a dropdown menu labeled "Select Target Entity *" with "Object (291)" selected. Below this is a text input field labeled "Containing keyword". A blue plus sign icon is positioned between the search and relation sections. On the right, a box titled "... related" and "... to entity" contains two dropdown menus: "Select Relation" and "Select Related Entity". Below these sections, there is a blue "SEARCH" button and a pink "RESET" button. At the bottom, a table titled "Data Results (291 results)" displays the search results. The table has a pink header row labeled "OBJECT" and four columns: "NAME", "TYPE", "COLLECTION", and "IMAGE".

OBJECT			
NAME	TYPE	COLLECTION	IMAGE
Τσαγιέρα HTR2971	Τσαγιέρα	Κεραμικά	
Αρύβαλλος AMM442	Αρύβαλλος	Κεραμικά	

A-QuB – Browsing the search results

The screenshot illustrates the A-QuB search interface. On the left, the 'Explore Data' section shows a search for 'Object (291)' with 'ΑΜΜ442' selected. A blue arrow points from the search results table to the 'Information Card of Αρύβαλλος ΑΜΜ442 (Object)'. This card lists various attributes: NAME (Αρύβαλλος ΑΜΜ442), TYPE (Αρύβαλλος), MAIN MATERIAL (Πηλός), FOUND IN (Φαιστός), COLLECTION (Κεραμικά), DATE (8ος αιώνας - 7ος αιώνας π.Χ.), LOCATION IN MUSEUM (Αίθουσα ΙΙΑ - Προθήκη 2α), and NOTE (Αρύβαλλος, Τέλη 8ου-αρχές 7ου αι. π.Χ.). A blue arrow points from the 'FOUND IN' field to the 'Information Card of Φαιστός (Site)'. This card shows: NAME (Φαιστός), LOCATION (Φαιστός), and an IMAGE of the site. A 'HIDE THIS SIDENAV' button is visible at the bottom of the site card. The bottom of the search interface includes a 'Data Results (1 results)' table, a 'DOWNLOAD CSV' button, and a pagination bar.

Search Interface:

Explore Data

Searching for...

Select Target Entity *

Object (291)

AMM442 X

Containing keyword

SEARCH

Data Results (1 results)

OBJECT		
NAME	TYPE	COLLE
Αρύβαλλος ΑΜΜ442	Αρύβαλλος	Κερ

DOWNLOAD CSV

Information Card of Αρύβαλλος ΑΜΜ442 (Object)

- NAME**
 - Αρύβαλλος ΑΜΜ442
- TYPE**
 - Αρύβαλλος
- MAIN MATERIAL**
 - Πηλός
- FOUND IN**
 - Φαιστός
- COLLECTION**
 - Κεραμικά
- DATE**
 - 8ος αιώνας - 7ος αιώνας π.Χ.
- LOCATION IN MUSEUM**
 - Αίθουσα ΙΙΑ - Προθήκη 2α
- NOTE**
 - Αρύβαλλος, Τέλη 8ου-αρχές 7ου αι. π.Χ.
- IMAGE**
 -

Information Card of Φαιστός (Site)

PREVIOUS ENTITY (ΑΡΥΒΑΛΛΟΣ ΑΜΜ442 (OBJECT))

- NAME**
 - Φαιστός
- LOCATION**
 - Φαιστός
- IMAGE**
 -

HIDE THIS SIDENAV

First Previous 1 Next Last

A-QuB – Searching by relation

Inspecting the monuments and the objects found in them

The screenshot displays the A-QuB search interface. On the left, the 'Searching for...' panel has 'Monument (58)' selected. On the right, the '... related ... to entity' panel has 'is finding place of' selected as the relation and 'Object' as the related entity. A green plus sign is between the panels. Below the panels are 'SEARCH' and 'RESET' buttons. The 'Data Results (31 results)' table is shown below, with columns for 'MONUMENT' and 'OBJECT'.

MONUMENT	OBJECT
MONUMENT NAME	OBJECT NAME
Ιερό Πυθίου Απόλλωνα στη Γόρτυνα	Επιγραφή Go377
	Επιγραφή Go399
	Άγαλμα Αθηνάς με αιγίδα AMM615
	Άγαλμα Ήρας τύπου Borgese AMM616
	Αφιερωματική επιγραφή AMM593
	Κολοσσιαίο άγαλμα Πύθιου Απόλλωνος AMM629
	Πίθος AMM44
	Μόνωτο τροπιδιωτό κύπελλο Π110119
	Τμήματα από τράπεζα προσφορών AMM50
	Σφραγίδα με παράσταση ιχθύων Σ-K60
Ανάκτορο Φαιστού	Πύμα Π110527
	Σφραγίδα με παράσταση αιγάγου Σ-K345
	Λίθινος κέρνος AMM48
	Τρίφτης Π110560
	Πήλινος δίσκος κεραμικού τροχού Π3549
	Σφράγισμα AMM41
	Πίθος AMM46

A-QuB – Searching by relation value (date)

The screenshot displays the A-QuB search interface. On the left, the 'Searching for...' panel has 'Object (291)' selected in the 'Select Target Entity *' dropdown. In the center, a green plus sign indicates a search operation. On the right, the '... related ... to entity' panel has 'has production date' selected in the 'Select Relation *' dropdown and 'Date' selected in the 'Select Related Entity *' dropdown. Below the 'Date' dropdown, the 'From Date' and 'Until Date' fields are set to '8ος αιώνας π.Χ.' and '6ος αιώνας π.Χ.' respectively. A blue arrow icon points to the search button. Below the search panels, there is a blue 'SEARCH' button and a pink 'RESET' button. The 'Data Results (13 results)' table is shown below, with columns for 'OBJECT' and 'DATE'. The table contains 13 rows of data, including object names and their corresponding dates.

OBJECT	DATE
OBJECT NAME	DATE
Επιγραφή Go377	7ος αιώνας π.Χ.
Αρύβαλλος AMM442	8ος αιώνας - 7ος αιώνας π.Χ.
Πλακίδιο AMM498	7ος αιώνας π.Χ.
Αρύβαλλος AMM579	Μέσα 7ου αιώνα π.Χ.
Επιγραφή Go399	600 - 525 π.Χ.
Γεωμετρικός πίθος με αρχαϊκή επιγραφή AMM457	Τέλη 8ου αιώνα π.Χ.

Searching all objects that have production date the period 8th – 6th century BC

A-QuB – Searching by multiple relation values

**Searching all objects that
i) have a specific material
value, ii) are of a specific
cultural period, iii) are of a
specific type**

Searching for...

Select Target Entity *

Object (291) ▾

Containing keyword

... related **... to entity** ✕

Select Relation * Select Related Entity *

has material ▾ Material ▾

Λίθος ✕

Containing keyword

AND

... related **... to entity** ✕

Select Relation * Select Related Entity *

was produced during period ▾ Cultural Period ▾

Νεολιθική περίοδος ✕

Containing keyword

AND

... related **... to entity** ✕

Select Relation * Select Related Entity *

has type ▾ Type ▾

Συσσωμάτωμα ✕

Containing keyword

A-QuB – Searching by relation chain

Searching all objects that have as finding place the site in which another object was found on

The screenshot illustrates the A-QuB search interface for a relation chain search. It consists of several components:

- Searching for...:** A panel with a dropdown menu for 'Select Target Entity *' (set to 'Object (291)') and a text input for 'Containing keyword'.
- ... related:** A panel with a dropdown menu for 'Select Relation *' (set to 'has finding place') and a search input for 'Containing keyword'.
- ... to entity:** A panel with a dropdown menu for 'Select Related Entity *' (set to 'Site') and a search input for 'Containing keyword'.
- Search Results:** A panel showing the results of the search, including a list of objects and a thumbnail image. The results are: 'Κεφάλι γυναικείου ειδωλίου AMM463', 'Ειδώλιο ανθρωπόμορφο Ειδώλια', and 'Object__156__AMM_463_06-2023142927__3739.jpg'.
- SEARCH:** A blue button with a magnifying glass icon.
- RESET:** A red button with a circular arrow icon.
- Data Results (14 results):** A table with two columns: 'OBJECT' and 'SITE'. The table contains three rows of data.

OBJECT	SITE
OBJECT NAME	SITE NAME
Ωοκέλυφο κύπελλο Π23628	Άγιος Ιωάννης, Φαιστός
Κεφάλι γυναικείου ειδωλίου AMM463	Άγιος Ιωάννης, Φαιστός
Ωοκέλυφο κύπελλο Π23629	Άγιος Ιωάννης, Φαιστός

A-QuB – Data export for external/offline analysis

Downloading the search results for external analysis

The screenshot shows the A-QuB search interface. On the left, there is a 'Searching for...' panel with a dropdown for 'Object (291)' and a 'Containing keyword' field. A green plus sign is next to it. To the right, a '... related ... to entity' panel shows 'has material' as the relation and 'Material' as the related entity. Below these panels is a 'SEARCH' button. The main area displays 'Data Results (236 results)' with a table. The table has columns for 'OBJECT' and 'OBJECT NAME'. Below the table is a 'DOWNLOAD CSV' button highlighted with a red box. At the bottom, there are pagination controls: 'First', 'Previous', '1', '2', '3'.

The screenshot shows an Excel spreadsheet with a pivot table and a horizontal bar chart. The pivot table is titled 'Count of object2' and shows the count of objects grouped by material. The bar chart is titled 'Count of object2 by material' and shows the same data as a horizontal bar chart. The chart has a dropdown menu for 'material' set to 'material'. The data is as follows:

Material	Count
Πηλός	159
Λίθος	42
Χαλκός	20
Χρυσός	3
Κονίαμα	3
Όστρεα	2
Λευκή πάστα	2
Λίθος (μάρμαρο)	1
Χαλκός, Οστό	1
Ελεφαντόδοντο	1
Οστό	1
Άργυρος	1
Οργανικά κατάλοιπα	1

For example, we can quickly create a chart grouping all objects by main material

Other systems offering a similar interface

❑ ResearchSpace

<https://researchspace.org/>

The screenshot shows the ResearchSpace interface. At the top, there are tabs for 'Keyword search', 'Semantic search', and 'Records'. Below this, a search query is displayed: 'Find: People WAS CREW AT Ship where ships arrived at Barcelona'. The query is visualized as a flow: 'Person' (with a person icon) 'was crew at' 'Ship' (with a ship icon). A 'WHERE' filter is applied, showing 'Ship' 'arrived at' 'Place' 'Barcelona' (with a location pin icon). Below the query, it says 'Found 604 matches'. There are buttons for 'Timeline', 'Chart', and 'List'. A 'Filter Results' section is visible, with a search box containing 'subject' and a list of results including 'Agustin Farche Saura', 'Agustin Fernandez', and 'Agustin Gonda Aradiano'.

<https://rs.sealitproject.eu/>

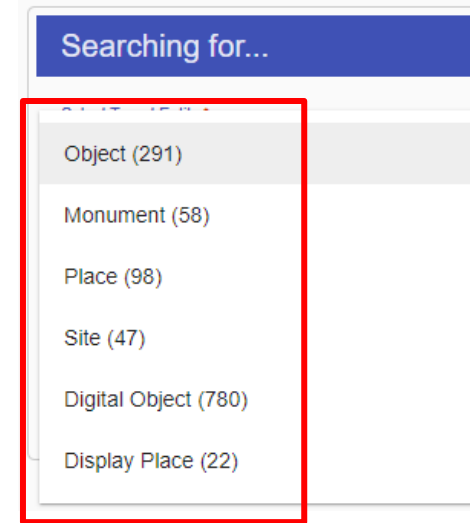
❑ Sparnatural

<https://sparnatural.eu/>

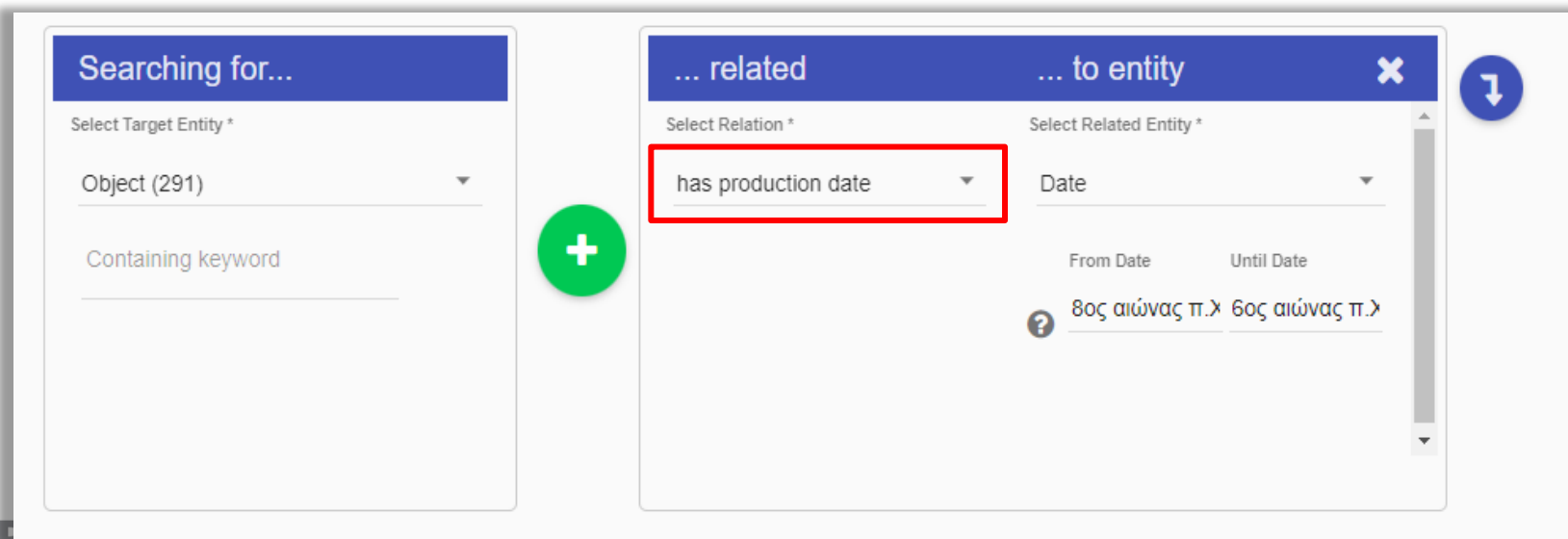
The screenshot shows the Sparnatural interface with a complex semantic query. The query is visualized as a tree structure. The root node is 'Artwork' (with a paintbrush icon) 'displayed at' 'Museum' (with a museum icon). This is connected to a 'Where' node, which is further connected to 'Museum' 'country' 'Country' 'France (222)'. This is connected to an 'And' node, which is further connected to 'Museum' 'displays' 'Artwork'. This is connected to another 'Where' node, which is further connected to 'Artwork' 'author' 'Person' 'Michelangelo' 'Caravaggio'. This is connected to an 'And' node, which is further connected to 'Artwork' 'author' 'Person'. This is connected to a final 'Where' node, which is further connected to 'Person' 'birth date' 'Date' 'From 01-01-1500 to 31-12...'. Each node has a close button (X) and a plus sign (+) for expansion.

A-QuB – The configuration model

- Definition of the searching **categories of entities**



- Definition of the **entity relationships**



A-QuB – The configuration model

- File: config.properties

Defining the categories of entities

```
entities = 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15
```

```
entities.1.name = Object
```

```
entities.1.instancesQuery = SELECT COUNT(DISTINCT ?uri) [[FROM_GRAPHS]] WHERE { ?uri a <http://www.cidoc-crm.org/cidoc-crm/
```

```
entities.1.searchQuery = SELECT DISTINCT ?uri ?name ?type ?collection ?image [[FROM_GRAPHS]] WHERE { ?uri a <http://www.cidoc-crm.org/cidoc-crm/
```

```
entities.1.sourceUriVariable = ?uri
```

```
entities.1.exploreQuery = SELECT ?name ?type ?condition ?main_material ?found_in ?found_in__found_in ?collection (CONCAT(?name, ?found_in))
```

```
entities.1.exploreVariableTypes = found_in:4
```

```
entities.1.entityType = LITERAL
```

```
entities.2.name = Monument
```

```
entities.2.instancesQuery = SELECT COUNT(DISTINCT ?uri) [[FROM_GRAPHS]] WHERE { ?uri a <http://www.cidoc-crm.org/cidoc-crm/
```

```
entities.2.searchQuery = SELECT DISTINCT ?uri ?name ?site [[FROM_GRAPHS]] WHERE { ?uri a <http://www.cidoc-crm.org/cidoc-crm/
```

```
entities.2.sourceUriVariable = ?uri
```

```
entities.2.exploreQuery = SELECT ?name ?type ?loc ?loc__location ?si ?si__site ?responsible_organisation (CONCAT(?name, ?loc, ?si))
```

```
entities.2.exploreVariableTypes = loc:3;si:4
```

```
entities.2.entityType = LITERAL
```

```
entities.3.name = Place
```

A-QuB – The configuration model

- File: config.properties

Defining the entity relationships

```
relations = 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35

relations.1.name = has condition
relations.1.sourceEntity = 1
relations.1.destinationEntity = 11
relations.1.relationGraphPattern = ?object[[i]] <http://www.cidoc-crm.org/cidoc-crm/P102 has title> ?title
relations.1.sourceUriVariable = ?object[[i]]
relations.1.sourceShownVariables = ?object_name[[i]]
relations.1.destinationUriVariable = ?condition[[j]]
relations.1.destinationShownVariables = ?condition[[j]]
relations.1.sourceFilterPattern = [[REGEX(?object_name[[i]])]] [[VALUES(?object[[i]])]]
relations.1.destinationFilterPattern = [[REGEX(?condition[[j]])]] [[VALUES(?condition[[j]])]]

relations.2.name = has material
relations.2.sourceEntity = 1
relations.2.destinationEntity = 7
relations.2.relationGraphPattern = ?object[[i]] <http://www.cidoc-crm.org/cidoc-crm/P45 consists of> ?material
relations.2.sourceUriVariable = ?object[[i]]
```

The problem...

- Configuring the system for use in a particular use case (dataset) can be **very time consuming**
 - depending on the complexity of the data (number of categories, number of category relationships, etc.)
 - need to define the graph patterns for the categories and relationships
- AQuB for Messara Museum
 - 15 categories, 35 relationships
 - Configuring AQuB took several days
- SeaLiT Project (Maritime History):
 - Around 15 categories and **>200 relationships!**
 - Configuring ResearchSpace took months!

Towards a generic configuration

- Creation of a generic configuration for CIDOC CRM
- Rely on the idea of “**Fundamental Categories and Relationships**”

Tzompanaki, K., & Doerr, M. (2012). Fundamental Categories and Relationships for intuitive querying CIDOC-CRM based repositories. *ICS-FORTH Technical Report, 429*.

[https://publications.ics.forth.gr/tech-reports/2012/2012.TR429 Intuitive querying CIDOC-CRM.pdf](https://publications.ics.forth.gr/tech-reports/2012/2012.TR429%20Intuitive%20querying%20CIDOC-CRM.pdf)

Towards a solution

- Creation of a generic configuration for CIDOC CRM
- Rely on the idea of “**Fundamental Categories and Relationships**”

Tzompanaki, K., & Doerr, M. (2012). Fundamental Categories and Relationships for intuitive querying CIDOC-CRM based repositories. *ICS-FORTH Technical Report, 429*.

[https://publications.ics.forth.gr/tech-reports/2012/2012.TR429 Intuitive querying CIDOC-CRM.pdf](https://publications.ics.forth.gr/tech-reports/2012/2012.TR429%20Intuitive%20querying%20CIDOC-CRM.pdf)

Creating a generic configuration

7 fundamental Categories:

- Actor
- Place
- Thing
- Period/Event
- Concept/Type
- Time
- Dimension

```
entities.1.name = Actor
entities.1.instancesQuery = SELECT COUNT(DISTINCT ?uri) [[FROM_GRAPHS]] W
entities.1.searchQuery = SELECT DISTINCT ?uri ?label ?class ?type [[FROM
    ?uri a <http://www.cidoc-crm.org/cidoc-crm/E39 Actor> . OPTIONAL
    OPTIONAL {?uri <http://www.cidoc-crm.org/cidoc-crm/P2 has type>
entities.1.exploreQuery = SELECT ?label ?name ?type ?type_more ?birth_pe
entities.1.exploreVariableTypes =
entities.1.sourceUriVariable = ?uri
entities.1.entityType = LITERAL
```

```
entities.2.name = Place
entities.2.instancesQuery = SELECT COUNT(DISTINCT ?uri) [[FROM_GRAPHS]] W
entities.2.searchQuery = SELECT DISTINCT ?uri ?label ?class ?type [[FROM
    ?uri a <http://www.cidoc-crm.org/cidoc-crm/E53 Place> . OPTIONAL { ?
    OPTIONAL {?uri <http://www.cidoc-crm.org/cidoc-crm/P2 has type> ?t .
entities.2.exploreQuery = SELECT ?label [[FROM_GRAPHS]] WHERE { [[URI]] <
entities.2.exploreVariableTypes =
entities.2.sourceUriVariable = ?uri
entities.2.entityType = LITERAL
```

```
entities.3.name = Thing
entities.3.instancesQuery = SELECT COUNT(DISTINCT ?uri) [[FROM_GRAPHS]] W
entities.3.searchQuery = SELECT DISTINCT ?uri ?label ?class ?type [[FROM
```


Creating a generic configuration

116 fundamental Relationships

- connecting the fundamental categories pairwise

```
relations.1.name = has type
relations.1.sourceEntity = 1
relations.1.destinationEntity = 5
relations.1.relationGraphPattern = ?actor[[i]] a <http://www.cidoc-crm.org/cidoc-crm/E39 Actor> ; <http://www.cidoc-crm.org/cidoc-crm/E39 Actor>
relations.1.sourceUriVariable = ?actor[[i]]
relations.1.sourceShownVariables = ?actor_label[[i]]
relations.1.destinationUriVariable = ?type[[j]]
relations.1.destinationShownVariables = ?type_label[[j]]
relations.1.sourceFilterPattern = [[REGEX(?actor_label[[i]])]] [[VALUES(?actor[[i]])]]
relations.1.destinationFilterPattern = [[REGEX(?type_label[[j]])]] [[VALUES(?type[[j]])]]

relations.2.name = has type
relations.2.sourceEntity = 2
relations.2.destinationEntity = 5
relations.2.relationGraphPattern = ?place[[i]] a <http://www.cidoc-crm.org/cidoc-crm/E53 Place> ; <http://www.cidoc-crm.org/cidoc-crm/E53 Place>
relations.2.sourceUriVariable = ?place[[i]]
```

Creating a generic configuration

Searching for...

Select Target Entity *

Thing (54)

Containing keyword

+ ... related ... to entity

Select Relation Select Related Entity

Important:
Inference for the **SubclassOf** relationship must be enabled (or materialized)

SEARCH RESET

Results

Search the results

LABEL	CLASS ↑	TYPE
ship Andrea	Ship	brigantino
ship Angelina	Ship	brigantino

Creating a generic configuration

Searching for...
Select Target Entity *
Actor (195)
Containing keyword

+

... related ... to entity
Select Relation *
was present at
Select Related Entity *
Period/Event
Containing keyword

SEARCH

Important:
Inference for the **SubpropertyOf** relationships must be enabled (or materialized)

Results

ACTOR LABEL

Francesco Saverio Proto

EVENT LABEL

Voyage of ship Andrea

Birth of Francesco Saverio Proto

Employment of Francesco Saverio Proto

Payment to Francesco Saverio Proto

Voyage of ship Andrea

Creating a generic configuration

Searching for...
Select Target Entity *
Actor (195)
Containing keyword

... related
Select Relation *
was present at

... to entity
Select Related Entity *
Period/Event
Containing keyword

SEARCH

Results
ACTOR LABEL
Francesco Saverio Proto

Voyage of ship Andrea
Birth of Francesco Saverio Proto
Employment of Francesco Saverio Proto
Payment to Francesco Saverio Proto
Voyage of ship Andrea

Important:
The configuration of this relationship

```
relations.17.name = was present at
relations.17.sourceEntity = 1
relations.17.destinationEntity = 4
relations.17.relationGraphPattern = ?event[[j]] <http://www.cidoc-crm.org/cidoc-crm/Pl2 occurrence
relations.17.sourceUriVariable = ?actor[[i]]
relations.17.sourceShownVariables = ?actor_label[[i]]
relations.17.destinationUriVariable = ?event[[j]]
relations.17.destinationShownVariables = ?event_label[[j]]
relations.17.sourceFilterPattern = [[REGEX(?actor_label[[i]])]] [[VALUES(?actor[[i]])]]
relations.17.destinationFilterPattern = [[REGEX(?event_label[[j]])]] [[VALUES(?event[[j]])]]
```

Other important aspects

- Other important inferences that should be enabled/applied
 - **'owl:sameAs'** relationships
 - **'broader than'** relationships for types
 - **'falls within'** relationships for places(and the same for other **transitive properties**)

Ongoing work

- Testing the generic configuration (i.e. testing all the 116 relationships)
 - Creating the part of the configuration that allows exploring the entities in the results
 - What (generic) information to show for each category of entities? (e.g. show appellations, types, timespans, connected places, etc.)
 - Connection with RDF visualizer (another tool developed by FORTH)
 - Improving the UI
 - Preparing a detailed documentation
-
- Our plan:
 - To have (publicly available) an A-QuB deployment which one can directly use for exploring their CIDOC CRM based datasets
 - Upload your dataset -> Start exploring it

Thank you!

Questions?



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