Kartography CIC

Home of ResearchSpace

Open source AGPL

A Semantic Knowledge Base System

Semantic Data Management Systems - Update

59th CIDOC CRM SIG and ISO/TC46/SC4/WG9 - 52nd FRBR/LRMoo-CIDOC CRM Harmonization Meeting

Kartography - Social Enterprise

Registered Charter

- Data Diversity and Inclusion.
- Empowering subject experts as modellers of their own knowledge.
- Processual Approach (Practitioner-Researcher)
  - Transdisciplinary,
  - dynamic,
  - build contextual and historical provenance, identify significance
  - wider audiences participation.

ResearchSpace Use Cases

1. The <u>Individual Researcher</u> growing a knowledge base
   1. **to support work, academic publication, or prepare for a larger project. (PhD students)**
2. The <u>digital monograph</u>
   1. **able to interconnected with other micro or wider macro projects.** (Late Hokusai)
3. <u>The organisational systems</u>
   1. **to support strategic objectives – partnership, engagement, professional knowledge (TNA)**
4. <u>International Collaborations</u>
   1. **E.g. Pharos Art Archives** (Aggregationm - new components)

Interconnecting Individual researchers

Interconnecting internationally

Interconnecting organisations

Methodology - Cartesian to Processual

The Cartesian World	The Processual World
Made up of Substances - Object Focused	Made up of Processes - Relationship Focussed
Static	Dynamic
Intrinsic properties	Unfolding relations
External Relations	Internal Relations
Disciplinary	Transdisciplinary
Databases	Graphs

CARTESIAN THINKING | SYSTEMS THINKING
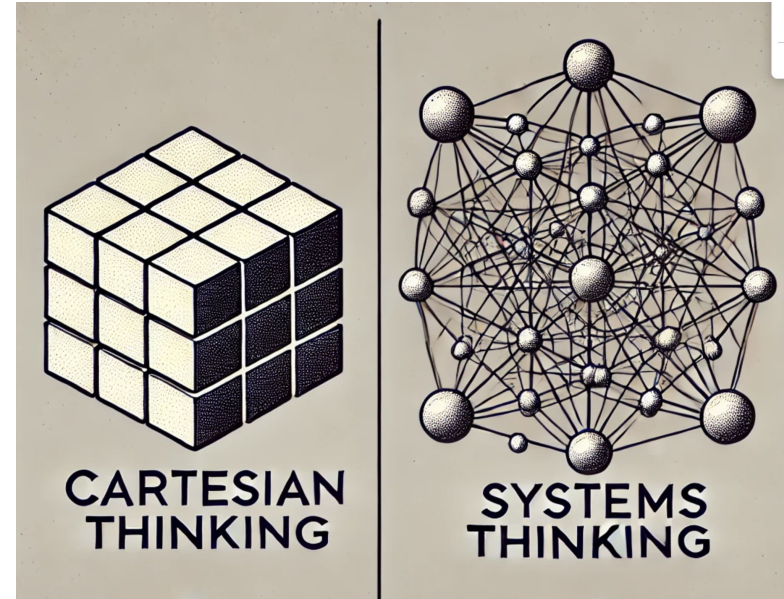
Semantic Data Management System

A **Semantic Data Management System** (SDMS) is a framework or system designed to manage and organize data using semantic technologies, such as ontologies and linked data, to provide a more meaningful, contextual, and interconnected understanding of information. These systems aim to go beyond traditional data management by embedding meaning (semantics) into data, enabling machines to interpret and reason about the data in a more intelligent way.

Source: OpenAI

- Active use of Ontology
- Natively Linked Data
- Creates Knowledge Graphs (native structure of CRM)
- Reasoning and Inference
- Semantic Search
- Direct Data Interoperability

Knowledge Representation

1. Concrete surrogates of the real world.
2. **Ontological Commitment** - for clarifying our different language about those surrogates.
3. Intelligent Reasoning
4. **A Medium for Efficient Digital Thinking**
5. **A Medium of Human Expression**
6. Symbolic Artificial Intelligence

Hugely Important for representing everyday complexity - for professionals and interested audiences, indigenous groups.


Semantic web layered architecture
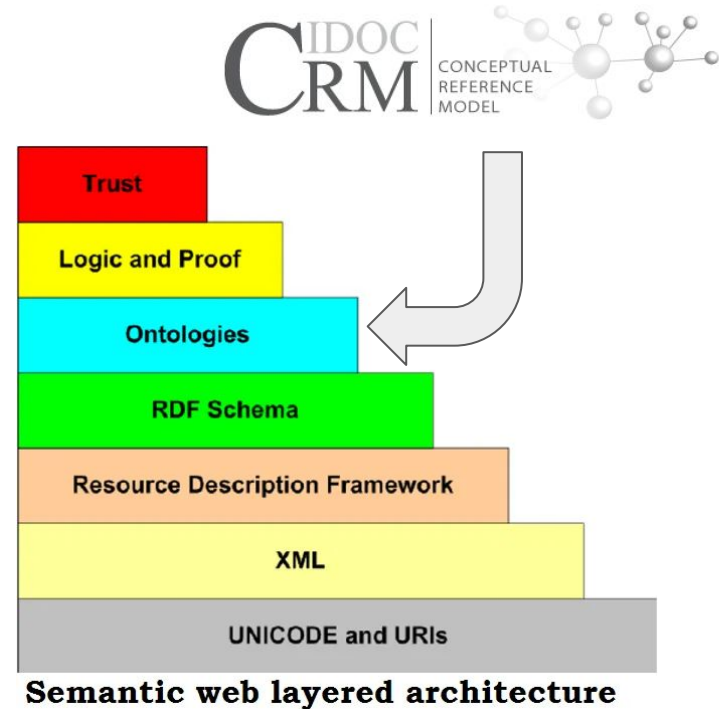
Empowering Subject Experts

- **Object focused models and standards**
  - Heritage & Humanities Experts (Professionals or not) are transdisciplinary
  - Most audiences are interested in wider historical context
- **'Functional / static systems with predefined data models**
  - Unable to reflect dynamic knowledge building on a daily basis
  - Impedes collaboration, both internally and externally
- **Subject experts can't expand models themselves as their knowledge evolves.**
  - Fragment their work using a range of unconnected desktop and cloud tools.
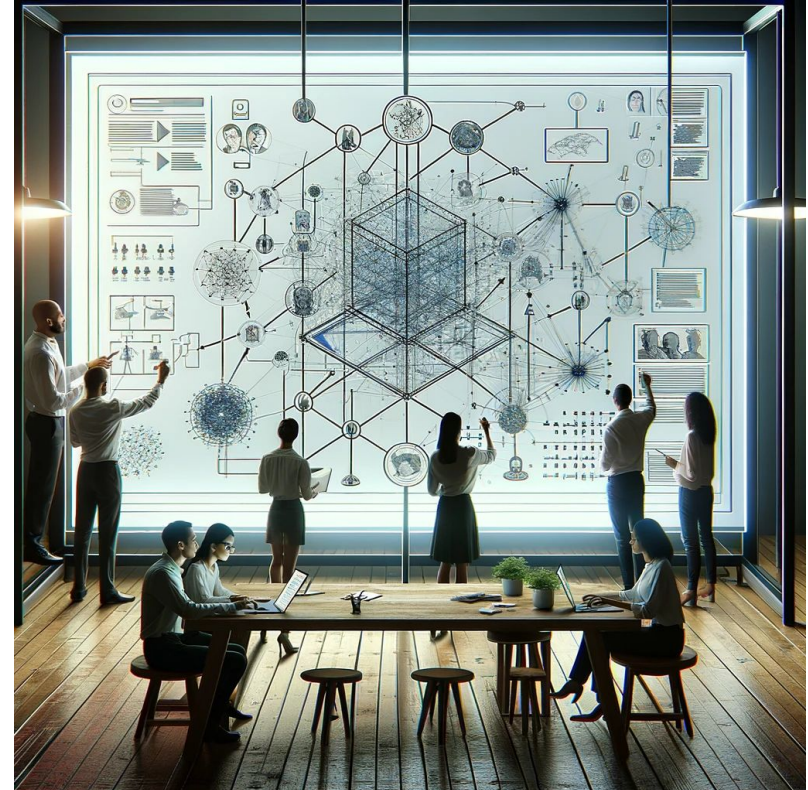
The Knowledge Paradox

- Subject Experts have the knowledge.

- They are continually looking at different questions and problems.

- They are transdisciplinary - their is no fixed model.

- They have no way to adapt the model to their work.

- The CIDOC CRM is a bottom up ontology but is often implemented top down.
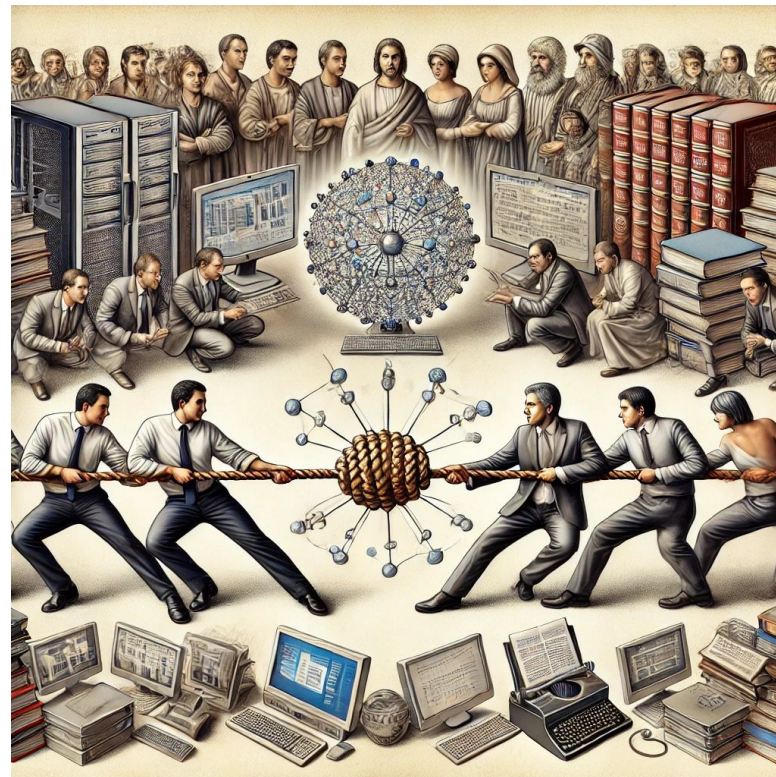
ResearchSpace Update: New Version
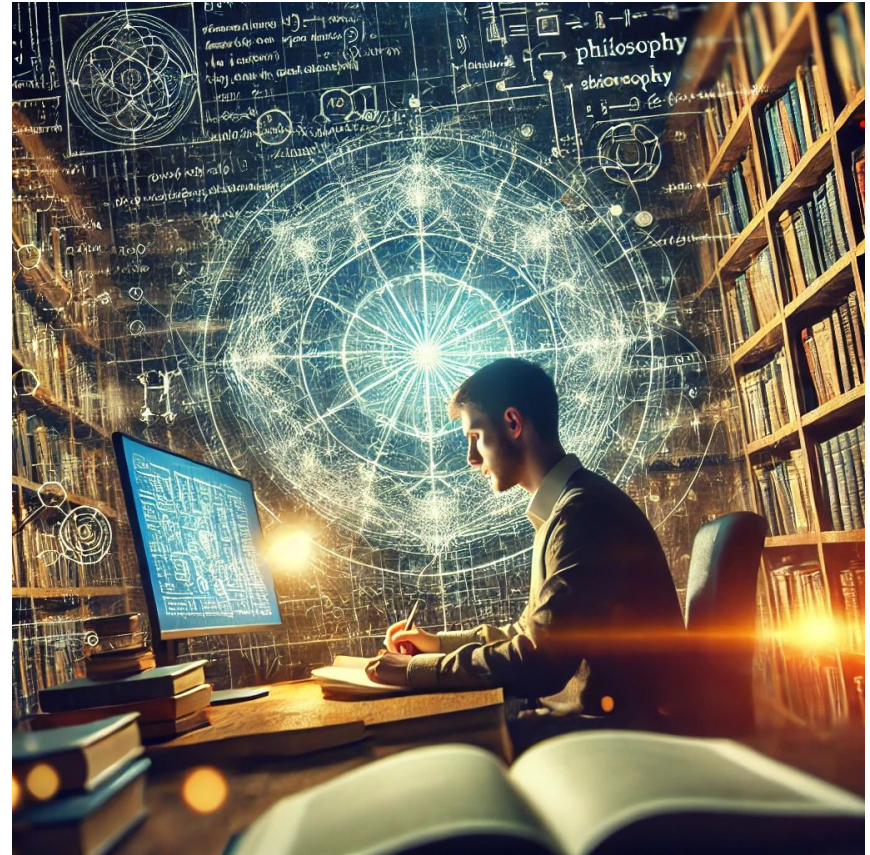
Resource Configuration

Create ▾ | + New resource | + New Project | 👤 admin ▾ | 💬 | ? | ⚙

Finder | **Clipboard**

Favourites

- ▸ 🗄 Activity
- 🗓 Event
- ▸ 📠 Actor
- ⚬ Man-Made Object
- ⚲ Place
- ⊙ Research Question
- ▸ 🗐 Type

Resources

- 🔊 Audio
- 📇 Authority Document
- 🗎 Document
- 🖼 Image
- 🗎 Image Annotation
- 🗝 Model 3D
- 🗏 Publication
- 🎞 Video

System

- 🗺 Knowledge Map
- 📊 Semantic Chart
- 🗎 Semantic Narrative
- 〰 Timeline
- 🗁 Set
- 🗐 User

Search all resources ›

Resource configuration ›

🔍 Search Place | ⚙ Resource configuration | +

Resource configuration ‹

+ New configuration

ACTIVITY ✕ ⌄

Acquisition		System	✏
Activity	Finder	System	✏
Actor	Finder	System	✏
Appellation		System	✏
Attribute assignment		System	✏
Audio	Finder	System	✏
Authority document		System	✏
Beginning of existence		System	✏
Biological object	Voc. / Auth.	System	✏
Birth		System	✏
Communicative Group			✏
Communicative Influence			✏
Conceptual object		System	✏
Condition assessment		System	✏
Condition state		System	✏
Creation		System	✏
Curated collection		System	✏
Curation activity		System	✏
Death		System	✏
Design or procedure		System	✏
Destruction		System	✏

Activity System

⎘ Copy IRI | ↻ Refresh

Resource details | Resource edit/visualisation | Resource in authority document | Search | Finder

Enter the resource details, ontology class, optional type and custom SPARQL patterns that define the resource label and restriction queries.

Name *

Activity | ?

Description

Enter the resource description | ✕ | ?

Ontology class (CIDOC-CRM, Skos, etc.) *

ACTIVITY | ⌄ | ?

Type

Select an additional type to be associated to the resource | ⌄ | ?

Label (SPARQL pattern)

?item crm:P1_is_identified_by ?appellation . ?appellation a crm:E41_Appellation . ?appellation crm:P2_has_type <http://www.researchspace.org/re | ✕ | ?

Restriction (SPARQL pattern)

Enter a SPARQL pattern to apply a restriction | ✕ | ?

Reset | Debug | **Save configuration**

Frame System

Charts & Timelines

chart 1 | 📊 CHART

Details **Chart values** Right Events Things More Metadata

🔄 Refresh ⋮

Chart

⛶ 📊
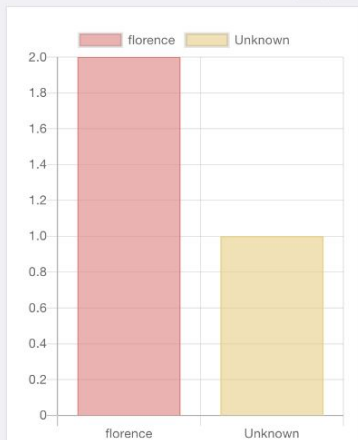
🔍 Filter by value

VALUE	COUNT
florence	2
Unknown	1

Images

⊞ ☰

Main image

⬆️

Drag main image from
Image Library ⤓ or **Image Annotation Library** ⤓
or click to upload

More images

⬆️

Drag image from
Image Library ⤓ or **Image Annotation Library** ⤓
or click to upload

Reset Delete Debug **Save chart**

Refresh

Details | Right | Events | Things | More | Metadata

Timeline

| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2 |

project 2
Start date: 2010-02-02
End date: 2024-09-30
View date: tiziano birth timespan
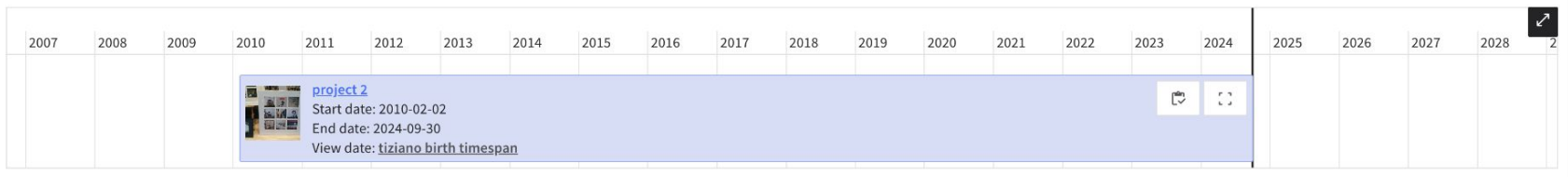
Description

Enter description/comment

Preferred identifier

Select preferred identifier ⌄ | + New | ✕

Other identifier

Select other identifier ⌄ | New ▾ | ✕

+ Other identifier

Reset | Delete | Debug | **Save timeline**

Semantic Narrtives

Different A

Import from external source

Feedback Settings Account

Wikipedia **Museum collections** Archives

Search in Victoria and Albert Museum collection

vase

TITLE	ACCESSION NUMBER	TYPE	DESCRIPTION	PRIMARY ARTIST NAME	PRIMARY ARTIST ROLE	IMAGE	ACTIONS
O156669	LOAN:GILBERT.110-2008	Vase	Sir Arthur Gilbert and h Expand	de Vecchis, Nicola	maker		Import Man-made object
O156670	LOAN:GILBERT.111-2008	Vase	Sir Arthur Gilbert and h Expand	de Vecchis, Nicola	maker		Import Man-made object
O164180	872-1882	Vase	The vase is carved in a st Expand	Unknown			Import Man-made object
Alhambra Vase	18-1865	Vase	The Alhambra, the palac Expand	Deck, Joseph-Théodore	maker		Import Man-made object

Search object

Actions

Import and add to project

Import and add to project

ACTIONS

Import Man-made object

Import Man-made object

Import Man-made object

Visual Observation - (create visual features)

Knowledge Maps

Example

Dunfermline **Press**
And West of Fife Advertiser

Subscribe Digital Edition

News Sport Opinion What's on Business E-Editions Announcements

News Dunfermline Rosyth Duloch Inverkeithing Dalgety Bay Crime

New Version - In Beta Testing

Tesco recalls chocolate bars over peanut allergy fears

10th June

HEALTH

PRODUCT RECALL

Tesco have recalled two products over undeclared peanuts *(Image: Newsquest)*

By Isabel Oldman
Former Digital Reporter
Isabel_Oldman

Share

0 Comments

A major supermarket has issued a warning to shoppers over 'a possible health risk.'

Tesco is recalling its Nutty Nougat Caramel Chocolate Bars Multipack and its Dreamy Caramel Chocolate Bars Multipack after they were found to contain peanuts, which has not been declared on the label.

The Food Standards Agency (FSA) says the products present a possible health

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with **the news**
Send your news & photos

Benefits

- **Empowerment**
  - Users can start creating their own Linked Data on download.
  - They can start sharing and reusing data with peers
  - They can scale their project without having to transform data (e.g. from spreadsheets etc)
  - Little or no technical help is required to start your researchspace system.
- **CIDOC CRM Education**
  - With the right labels users can learn CIDOC CRM **by doing**
- **Analysis**
  - Developers can analyse patterns of work by users for supporting larger project needs,
  - ResearchSpace is a community environment with component development
  - A fastrack community development system (plugin system) is boeing put in place
- **End Fragmentation**
  - Combining other digital objects, like documents, images, videos, audio (using CRM) brings all information together)

The National Archives
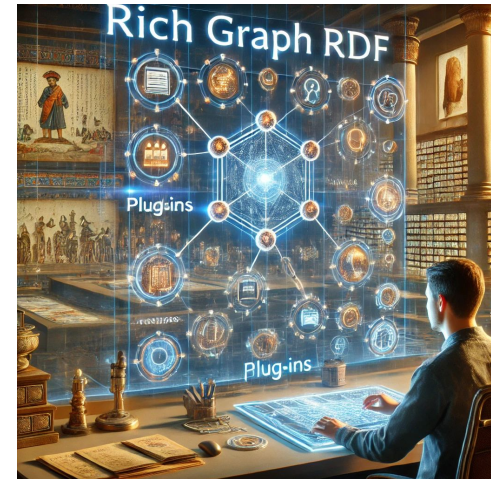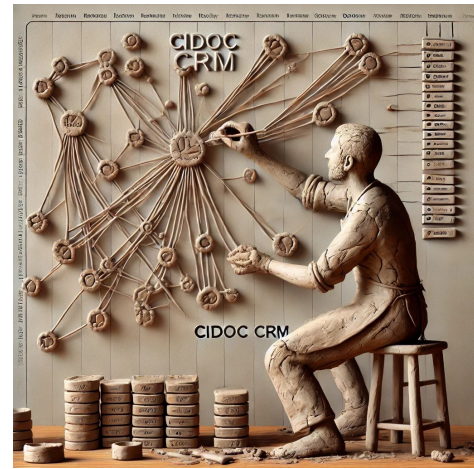
The National Archives CCD Knowledge Base

The Original ResearchSpace system converted previous data in CIDOC CRM.

Three main objectives

1. To ensure that the CCD professionals can record any knowledge (inputs are not predetermined) as they work.
2. **Producing a knowledge base that has many different uses for different people internally and externally**
3. To bring together practice and theory as part of the same system.
4. **To ensure that wider external processes are enrich those representations.**
5. To produce a system that shows change and transformation over time.