



Prospective FR-CRIS based on an information architecture with Pods

VIVO community members

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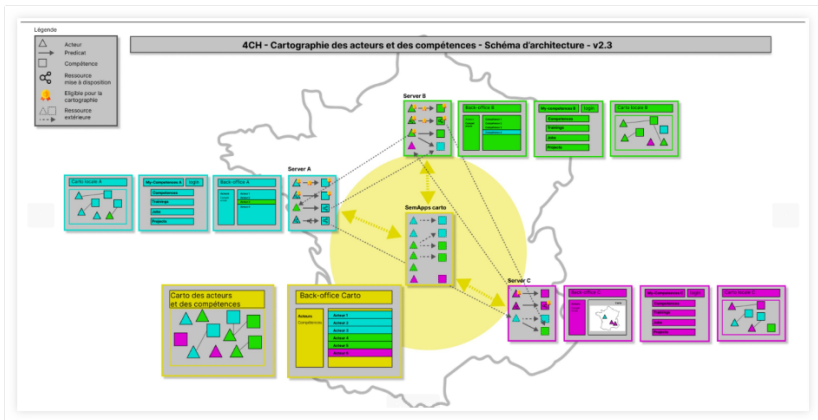
2023

① The Carto4CH demonstrator

② Our proposal: generic representation of entities

The Carto4CH demonstrator

- The Carto4CH project [2] from the Tours University is a technical foundation enabling cultural heritage partners to set up their own SemApps [4] instance and add their own skills.
- Once each partner has played the game, everyone will find the shared skills on the general map.
- The demonstrator contains two servers A and B, each with 3 interfaces, and a central server C, which maps everything.



An interoperability framework based on Solid with extras

Solid...

- **LDP = W3C Linked Data Protocol specification**
- **SPARQL = database query language**
- **WebACL = secure access to data (permissions)**

The extras...

- Access via LDP SPARQL
- Content management interfaces
- a ***PAIR* ontology, which remains compatible with other ontologies**
- Activity POD.

Ontologies

- The Virtual Assembly proposes the PAIR (Projects, Actors, Ideas, Resources) ontology for mapping ecosystems.
- But SemApps is compatible with any Semantic Web ontology (FOAF, Dublin Core, SKOS).
- For the Carto4CH project, the *PAIR* ontology has been replaced by its own skills ontology called *HeCo*.

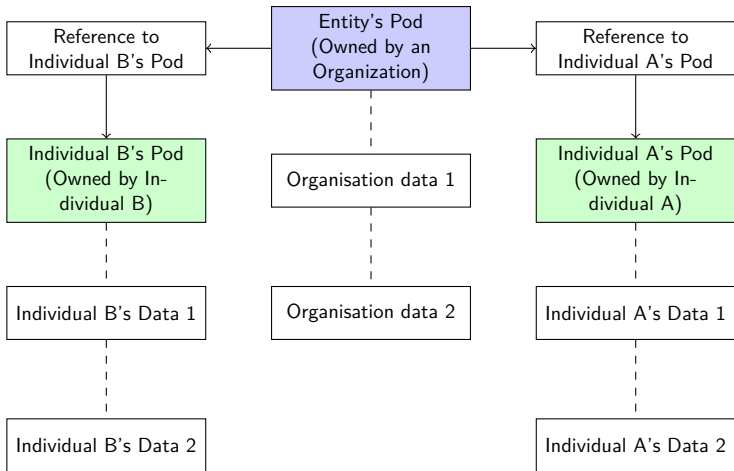
Data sample for an organization

```

← → ↻ data.virtual-assembly.org/organizations
* {
  id: https://data.virtual-assembly.org/organizations/assemblee\_virtuelle,
  type: [
    "Organization",
    "og:Circle",
    "pair:Organization"
  ],
  pair:affiliates: [
    https://data.virtual-assembly.org/users/srosset81,
    https://data.virtual-assembly.org/users/jeremy\_dufraisse,
    https://data.virtual-assembly.org/users/quillaume\_rouyer,
    https://data.virtual-assembly.org/users/alice\_poggioli,
    https://data.virtual-assembly.org/users/ancelin-moulherat,
    https://data.virtual-assembly.org/users/pierre
  ],
  pair:comment: "Favoriser la mise en réseau des acteurs grâce à la mise en synergie de leurs systèmes d'information.",
  pair:description: "L'Assemblée Virtuelle est un écosystème d'acteurs développant de manière collaborative des communs (outils, méthodes, acteurs de la transition. \n\nElle a été créée en 2011 et compte une quarantaine de contributeurs actifs impliqués sur une vingtaine de du web sémantique et des approches PAIR à PAIR.\n\nSon objectif est de favoriser la mise en réseau des acteurs grâce à la mise en syner",
  pair:documentedBy: https://data.virtual-assembly.org/documents/code-social-de-l-assemblee-virtuelle,
  pair:hasLocation: {
    type: "pair:Place",
    pair:hasPostalAddress: {
      type: "pair:PostalAddress",
      pair:addressCountry: "France",
      pair:addressLocality: "Athis-Val de Rouvre"
    },
    pair:label: "Athis-Val de Rouvre, Orne, France",
    pair:latitude: 48.805361,
    pair:longitude: -0.49477
  },
  pair:hasPart: [
    https://data.virtual-assembly.org/groups/conseil-d-administration,
    https://data.virtual-assembly.org/groups/cercle-de-coordination1,
    https://data.virtual-assembly.org/groups/projets,
    https://data.virtual-assembly.org/groups/groupe-de-travail
  ],
}

```

Pods and References



Individual Pod Components

1. Id and Personal Identifiers (VIVO or CERIF format ?)

- Unique Identifier: WebId
- Other Personal Identifiers (Pids): [Orcid, HalId, ...]

2. Certified Data

- Affiliations
- Certified Data Component 2 [...]

3. Production (Bibo format)

- Publications (Bibo format)
- Production 2 [...]

Aggregated Production Architecture

Description: In this architecture, the entity's production is centralized and relies on the aggregation of researchers' production. The system is designed to ensure uniqueness in content, even when multiple researchers contribute the same Bibo object.

Components:

- 1 **Researchers' Pods:** Each researcher has their own Pod containing their academic production described in Bibo format.
- 2 **Aggregator Module:** Responsible for gathering and processing production data from individual researchers' Pods.
- 3 **Content Uniqueness Enforcement:** The Aggregator Module ensures that only unique content is aggregated.
- 4 **Entity's Centralized Pod:** The entity maintains a centralized Pod where the aggregated production is stored.
- 5 **External Entity Integration:** Allows for the integration of production from other entities, ensuring a comprehensive and diverse collection of academic work.

Early Stage Feasibility Considerations

- 1 **Protocol Compatibility:** the feasibility of this architecture relies on the compatibility of the chosen protocols (such as ActivityPub and Solid Pods [3, 1]) for data access, information flows and sharing.
- 2 **Access Control and Permissions:** Proper access control and permissions must be in place to ensure that only authorized entities can access and contribute to the aggregated production.
- 3 **Duplicate Detection and Resolution:** The Aggregator Module must implement robust algorithms for detecting and resolving duplicate content to maintain data integrity.
- 4 **Scalability:** The system's scalability should be considered to handle a potentially large volume of academic production from multiple researchers and entities.
- 5 **Data Privacy and Security:** Measures should be implemented to safeguard the privacy and security of sensitive academic data.
- 6 **Conflict Resolution:** A mechanism for resolving conflicts (e.g., if multiple researchers contribute conflicting information about the same Bibo object) should be in place.

Open Research Area for the Social Sciences Eighth Call for Proposals 2023

The eighth round of the Open Research Area (ORA) is based on an agreement between

- Agence nationale de la Recherche (ANR; France),
- the Deutsche Forschungsgemeinschaft (DFG; Germany),
- the Economic and Social Research Council of UK Research and Innovation (ESRC; the UK),
- the Social Sciences and Humanities Research Council (SSHRC; Canada).

References

- [1] *ActivityPods - Personal data spaces powered with ActivityPub*. URL: <https://activitypods.org/> (visited on 09/13/2023).
- [2] *Carto 4CH | Cartographie Des Acteurs et Des Compétences*. URL: <https://portal.carto4ch.huma-num.fr/en> (visited on 10/10/2023).
- [3] Patrick Hochstenbach. “Introduction into the Solid Project and its implementations”. In: *14th Semantic Web in Libraries Conference (SWIB22), Workshops*. 14th Semantic Web in Libraries Conference (SWIB22). 2022. URL: <http://hdl.handle.net/1854/LU-01GRP8ERHVS0SDXY8F9FZDEXS> (visited on 09/14/2023).
- [4] Assemblée Virtuelle. *SemApps*. URL: <https://github.com/assemblee-virtuelle/semapps> (visited on 09/13/2023).