



HAL
open science

The Museums of Information Technologies research project, for enhancement of digital heritage.

Caroline Djambian, Emrick Poncet, Sivaratnam Pachava

► To cite this version:

Caroline Djambian, Emrick Poncet, Sivaratnam Pachava. The Museums of Information Technologies research project, for enhancement of digital heritage.. ITinHeritage, Jun 2023, Grenoble, France. , 2024. hal-04620137

HAL Id: hal-04620137

<https://hal.science/hal-04620137v1>

Submitted on 11 Jul 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Museum'IT

The Museums of Information Technologies research project
For enhancement of digital heritage

CAROLINE DJAMBIAN, EMRICK PONCET & SIVARATNAM PACHAVA



Safeguarding and enhancing digital heritage, is a step of general interest.

This heritage and its context are particular and symptomatic of recent heritages and is little covered by cultural institutions.

The starting point for our research is resolutely patrimonial through the computer museums:

- Aconit (Grenoble, FRANCE),
- Museum of Computing Machines (Pisa, ITALY),
- Computer Museum NAM-IP (Namur, BELGIUM),
- Home Computer Museum (Helmond, NETHERLANDS),
- London Science Museum (London, UK),
- Heinz Nixdorf MuseumsForum (Paderborn, GERMANY).

We want to help them by offering new and wider forms of access to their collections, particularly suited for their mediation.



Objectives

Perpetuate and enhance this heritage through an innovative approach in Digital Humanities, combining digital mediation devices from Humanities and Computer Sciences, to make the knowledge carried by the artifacts better accessed and adopted by all audiences, in 3 work packages.

Work package n°1

Analysis of mediation of digital as a science, technology, societal device, and public understanding of science (PUS).

- **1. The scientific and technical object.**
- **2. The museum of science and its practices.**
- **3. Documentation and data.**
- **4. Language.**

Work package n°2

- **1. IT heritage Knowledge base** to collect, harmonize, open, and link the museums' data.
(currently 16.010 items)
- **2. Knowledge modelization** of the IT field from the museums' collections by the construction of:
 - A knowledge graph.
 - A terminology: multilingual and multimedia dictionary.
 - An ontology.
- **3. A dedicated web platform** to open and link data on the semantic web.

Work package n°3

- **1. Human-Machine Interaction** : management of big heterogeneous data, emergence, and structuring of knowledge, access, and appropriation by the end-user.
- **2. Collaborative mediation and scientific literacy.**

Consortium

Ass. Pr. C. DJAMBIAN (Univ. Grenoble Alpes), coordinator: knowledge management, Digital Humanities
Pr. C. ROCHE (Univ. Savoie Mont-Blanc): Artificial Intelligence, Digital Humanities, terminology
Ass. Pr. I. TORRE (Univ. of Genoa, Italy): Artificial Intelligence, web technologies, Digital Humanities
Pr. M. ROSSI (Univ. of Genoa, Italy): terminology, technical languages
Pr. E. BRICCO (Univ. of Genoa, Italy): Digital Humanities, semiotic
Pr. P. MARET (Univ. Saint-Étienne): Data, knowledge graphs, semantic web, HCI
Pr. M.-C. BORDEAUX (Univ. Grenoble Alpes): museology, technical heritage, PUS
Ass. Pr. S. BELLIN (Univ. Grenoble Alpes): museology, heritage and digital technology relationships
G. D'IPPOLITO (Univ. of Genoa, Italy), Ph.D. student: Digital Humanities, linguistic
S. PACHAVA (Univ. Saint-Étienne), engineer intern: data, semantic web, knowledge graphs.
E. PONCET (Univ. Saint-Étienne) engineer intern: web technologies, data, semantic web.
M. PATROUILLER (Univ. Grenoble Alpes), info-com intern: web design and information retrieval.
A. TRÉMÉ (Univ. Grenoble Alpes), info-com intern: communication.

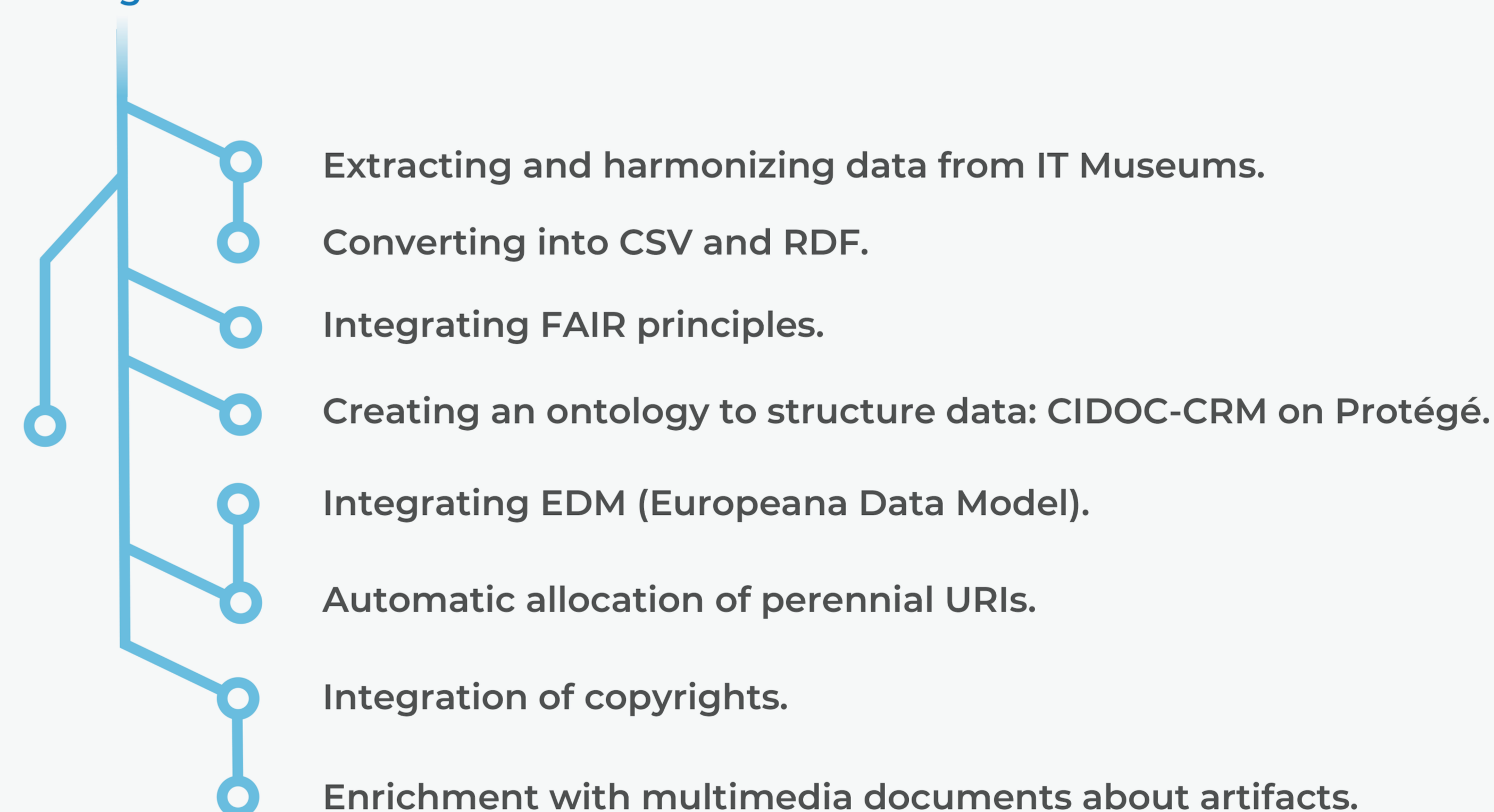
Current works

A project based on the LOD (Linked Open Data) and the Semantic Web.

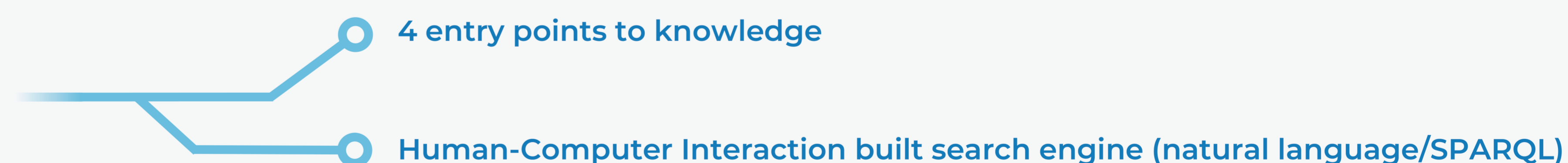
Usually : a lengthy adaptation of data to harmonize, structure, open and link it on the web.

Creation of a new method for managing heterogeneous Big Data.

Using Wikidata and Wikibase:



An end-user approach for data interaction:



Facilitating access to museums' collections.

Facilitating the appropriation of knowledge in the IT field by using the wikibase to create:

- A knowledge graph.
- A multilingual and multimedia dictionary.
- An ontology of the IT domain.
- Drawn on recognized projects such as FAIR, Europeana, CIDOC-CRM, and ISO 704 & 1087.