

Producing accessible, interoperable and reusable Cultural Heritage data with the SILKNOW ontology to preserve the European Silk Heritage

Marie Puren & Pierre Vernus (LARHRA-CNRS, France)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769504

The European silk heritage : fragile and at risk



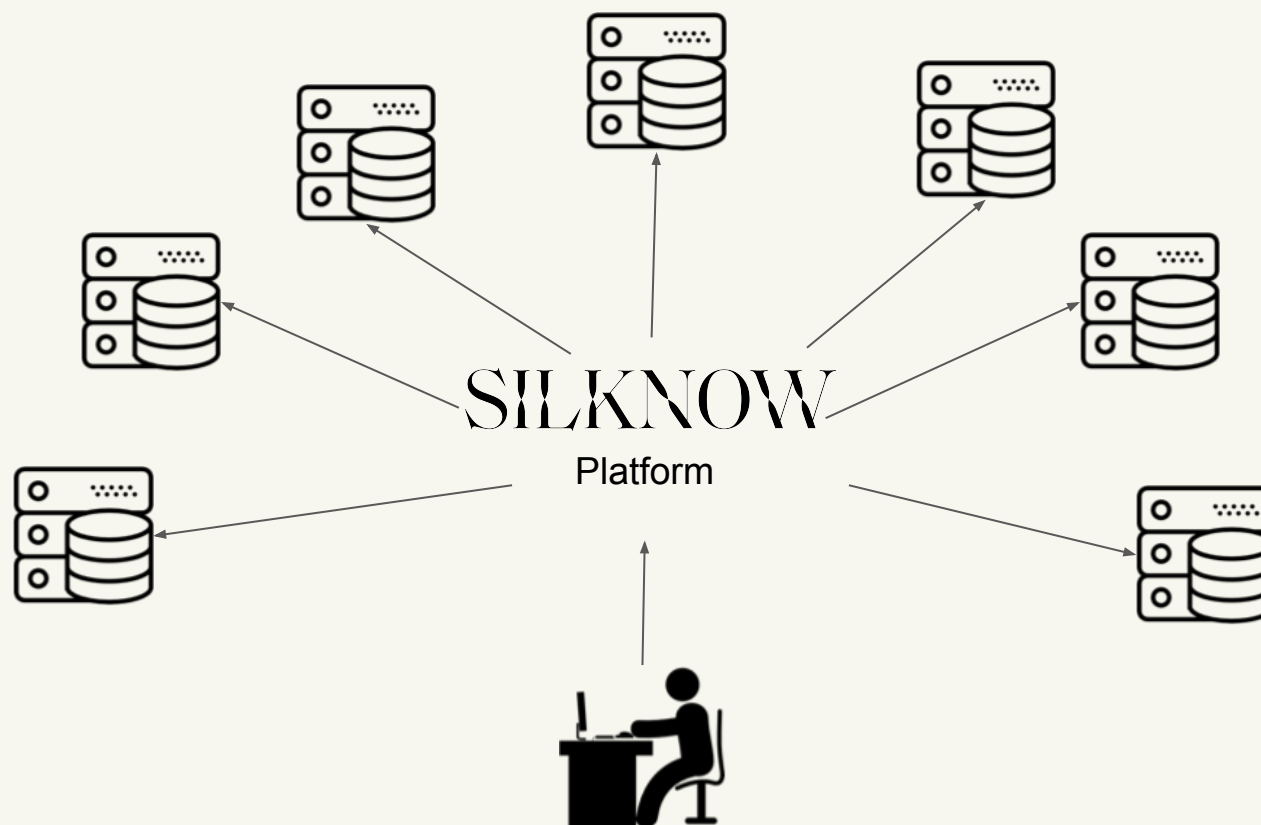
“The Museum of Textiles in Lyon saved from shutting down at the last minute”

The **SILKNOW** project : a short presentation

- Many European Cultural Heritage Institutions (CHIs) devoted to silk preservation.
- Production of many digital data : poorly tagged, in various formats, of random quality, inaccessible
- Lack size and resources to establish networks and connections with other collections
- **H2020 SILKNOW (Silk heritage in the Knowledge Society: from punched card to Big Data, Deep Learning and visual/tangible simulations - <http://silknow.org/>) project :**
 - an intelligent computational system in order to improve our understanding of **European silk heritage from the 15th to the 19th century**

The SILKNOW project : a short presentation

A **platform** to give access to a wide variety of data describing silk-related objects to researchers or curators, but also to the general public

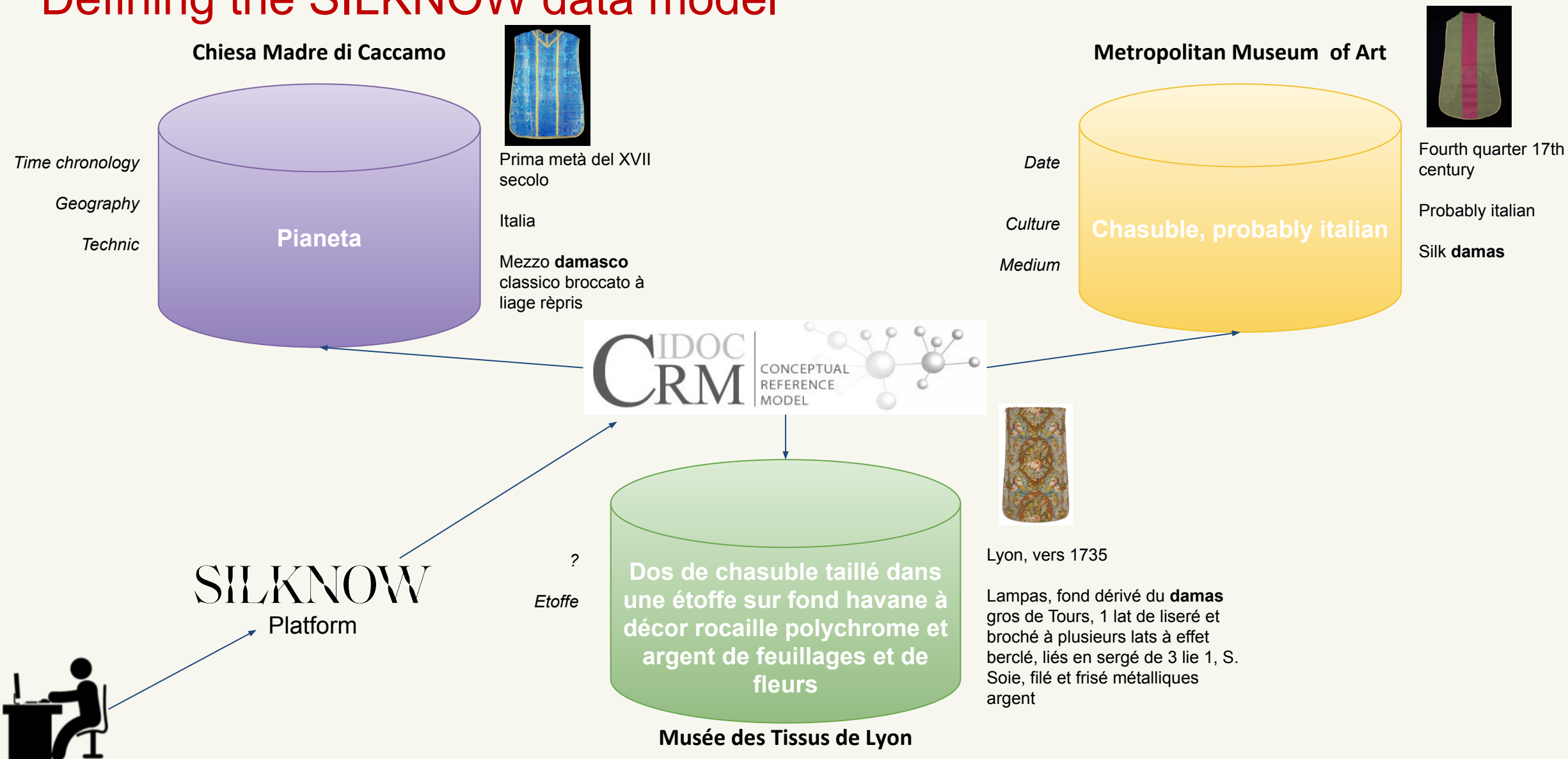


Collecting datasets to train the computational system

- 13 institutions / 11 datasets
 - SILKNOW has crawled datasets from websites or online databases of CHIs preserving silk-related artefacts.
 - For 2 datasets only : SILKNOW has received them directly from the GARIN company and the Università degli Studi di Palermo
- SILKNOW crawler made in Node.js, source code available on Github:
<https://github.com/SILKNOW/crawler/>

- ❑ [GARIN 1820](#)
- ❑ [Rhode Island School of Design Museum](#)
- ❑ [Red Digital de Colecciones de Museos de España](#)
- ❑ [CDMT Terrassa](#)
- ❑ [Joconde](#) database
- ❑ [Musée des Arts Décoratifs](#)
- ❑ [Metropolitan Museum of Arts](#)
- ❑ [Boston Museum of Fine Arts](#)
- ❑ [Musée des Tissus et des arts décoratifs](#)
- ❑ [Victoria and Albert Museum](#)
- ❑ Caccamo
- ❑ [Museo Diocesano di Palermi](#)
- ❑ Chiesa Madre di Termini Imerese

Defining the SILKNOW data model



Defining the SILKNOW data model

Why using **CIDOC CRM**?

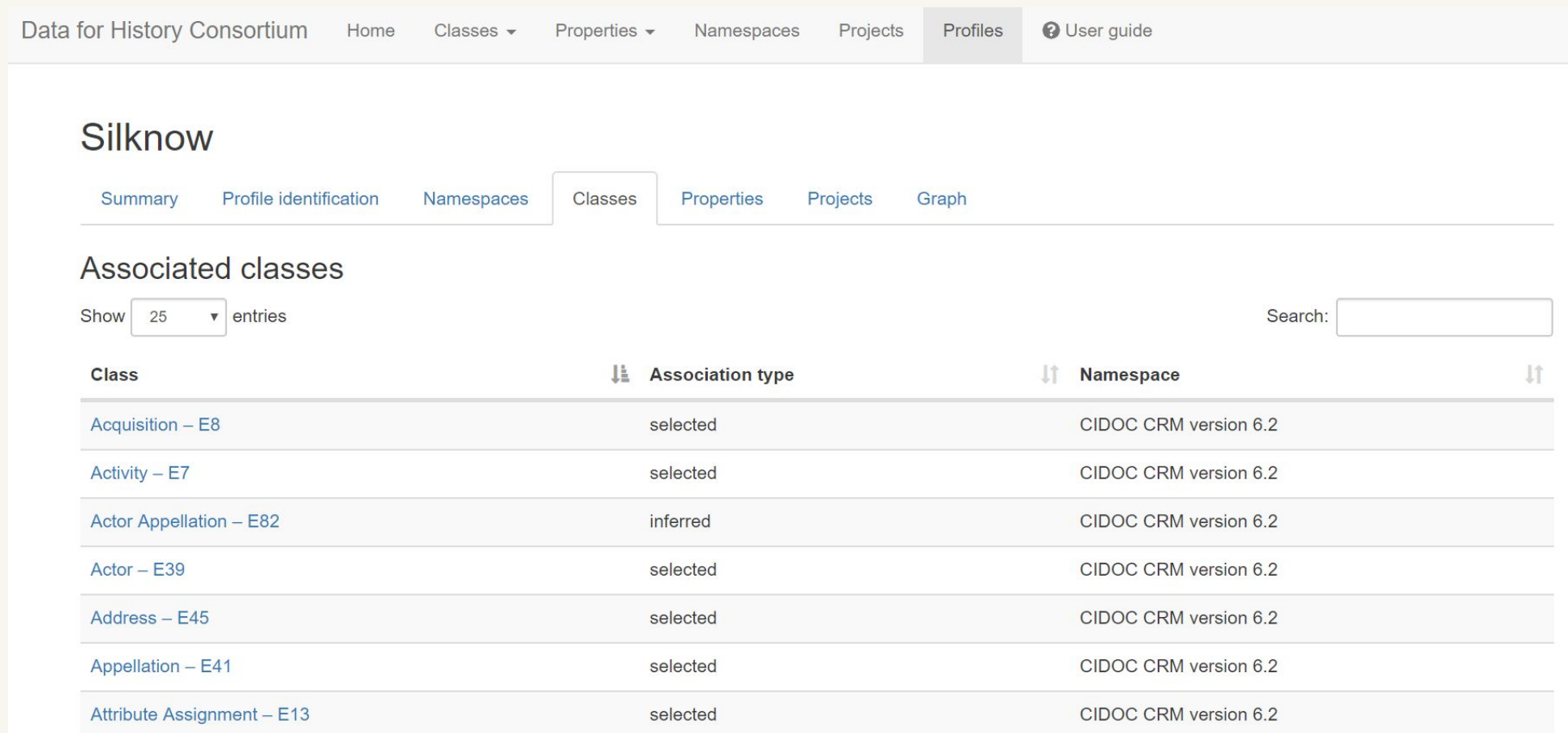
- International standard developed by ICOM and recognized as an ISO norm ([ISO 21127:2014](#))
 - Currently using the last living version of the model ([version 6.2](#))
- Used in other projects dealing with CH data (by ex. [Ariadne](#))
 - **Common language** allowing to harmonize data by explaining their underlying semantics
 - Integrate CH information in a **single environment**
- Generally implemented in **RDF** (framework of semantic Web and linked data)

Defining the SILKNOW data model

Three steps:

1. Study the structure of various CH catalogs and databases
2. Define information groups to retain and select the relevant description fields
3. **Select the useful CRM classes and properties** to express these informations

Defining the SILKNOW data model



The screenshot shows the 'Profiles' page for the 'Data for History Consortium' in the OntoME application. The 'Classes' tab is selected, displaying a list of associated classes. The table has columns for Class, Association type, and Namespace. The classes listed are Acquisition – E8, Activity – E7, Actor Appellation – E82, Actor – E39, Address – E45, Appellation – E41, and Attribute Assignment – E13, all associated with CIDOC CRM version 6.2.


Class	Association type	Namespace
Acquisition – E8	selected	CIDOC CRM version 6.2
Activity – E7	selected	CIDOC CRM version 6.2
Actor Appellation – E82	inferred	CIDOC CRM version 6.2
Actor – E39	selected	CIDOC CRM version 6.2
Address – E45	selected	CIDOC CRM version 6.2
Appellation – E41	selected	CIDOC CRM version 6.2
Attribute Assignment – E13	selected	CIDOC CRM version 6.2

SILKNOW project profile in OntoME (CRM classes and properties) :

<http://ontologies.dataforhistory.org/profile/7>

Defining the SILKNOW data model

- Defining the **mapping rules** for each dataset
- Dataset example: *La Cinquième Heure de La Nuit*, Gaspard Grégoire, vers 1804-1824, Museum of Textiles, Lyon



Notice ▾ Description ▾ Bibliographie ▾

Gaspard Grégoire (Aix-en-Provence, 20 octobre 1751 - Paris, 12 mai 1846) (fabricant)

La Cinquième Heure de la Nuit (Les Heures d'après Raphaël)

Velours uni coupé simple corps, peint sur chaîne, fond sergé de 3 lie 1, chaîne, Z, par 1 et 2 coups. Soie.

H. 50 cm , l. 47 cm (avec cadre)

Paris , vers 1804-1824

MT 1144. Achat Reybaud , 1862

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Further developments : Automatic text analysis

- More than 33 000 records converted in RDF
- Some of the free-text fields in **need of a more thorough reflection.**

La laize, qui a conservé un chef de pièce en satin (de 8) en partie inférieure, présente un fond de couleur ciel, en damas, dans lequel tous les fils produisent un satin (de 8), chaîne, avec un coup de fond, et un gros de Tours de deux fils avec deux coups de fond. Le décor lui-même est exécuté par un effet de chaque lat de broché à liage repris (en sergé de 3 lie 1, S, par un sixième des fils), reposant sur le satin du fond produit par les fils de chaîne et chaque coup de fond. Il dessine un élégant bouquet noué par un ruban rose, composé de roses, d'œillets et de branches de fraisier, en fleurs et en fruits. Un liseron est pris dans les tiges du bouquet, en dessous du ruban; [...]

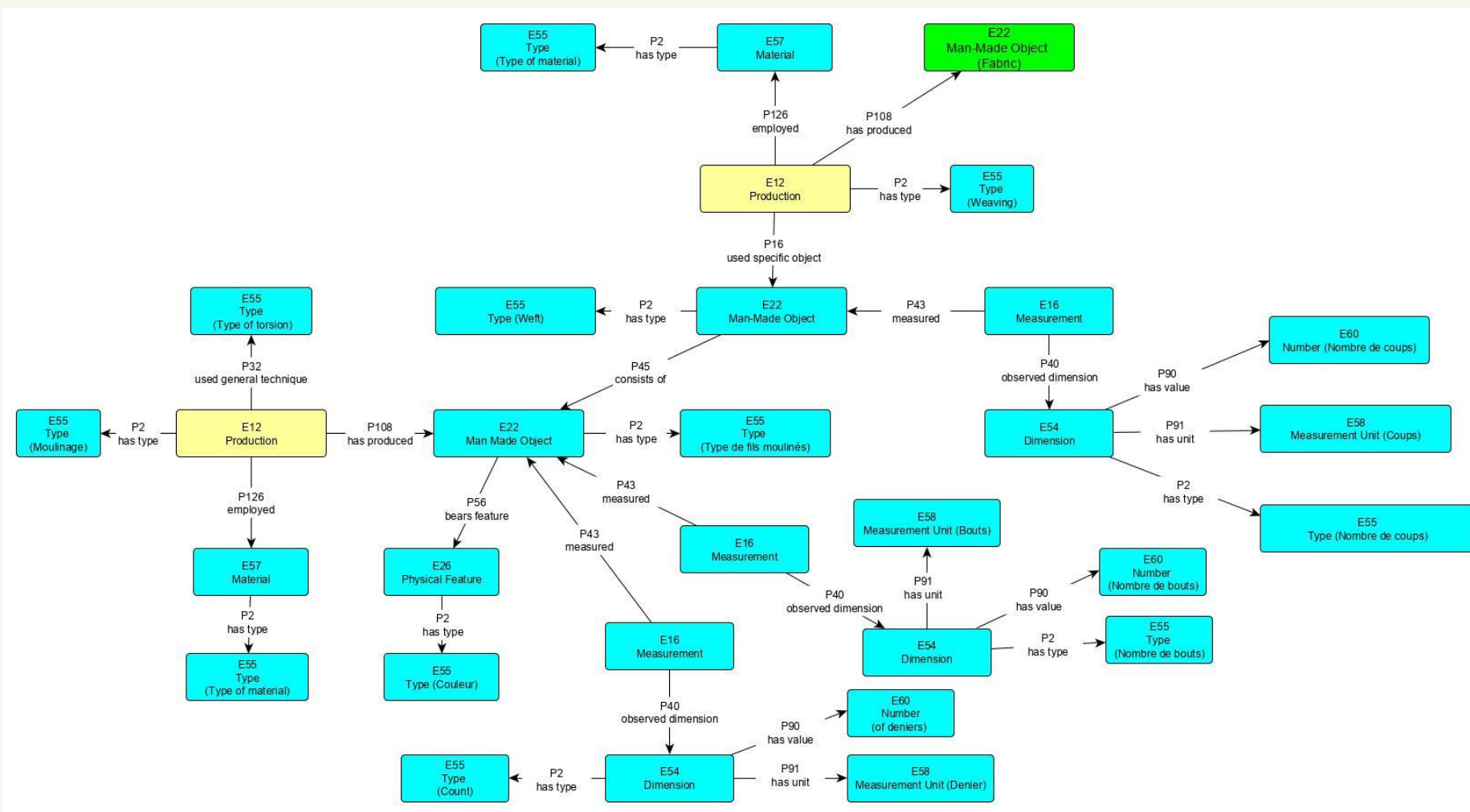
S4_Observation 08 observed E22_Man-Made Object
S4_Observation P3 has note E62_String
S4_Observation P2 has type E55_Type (Description)

Mapping in CIDOC
*The mapping is not so rich than the
original information.*

Description - MTMAD catalog
*Very rich description with technical
and historical information*

Philippe de La Salle, "Laize à décor de bouquet noué de roses", Museum of Textiles, Lyon (MT24591.2)

Dealing with the production of silk textile artefacts with CIDOC CRM



RDF graph generated using the SILKNOW ontology to describe the weft of a silk woven fabric

Further developments : New CRM classes and properties?

- Are the existing CRM classes and properties adequate to describe the structure, decoration and different steps of a silk related artefact creation process ?
- Do we need to create an **extension for dealing with the production of textile artefacts**
 - Something similar to FRBRoo, for the creation, production and expression process in literature and the performing arts

Thank you for your attention!
marie.puren@msh-lse.fr
pierre.vernus@ish-lyon.cnrs.fr

<http://silknow.eu/>



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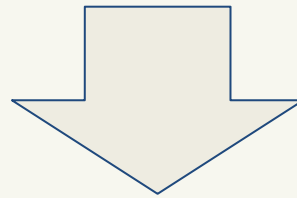
EURECOM
Sophia Antipolis



— 1 8 2 0 —

E12_Production → P2 has type → E55_Type “Weaving” → P2 has
type → E55_Type “Twill” (Sergé)

E12_Production → P108 has produced → E22_Man-Made Object →
P2 has type → E55_Type “Fabric” → P2 has type → E55_Type
“Chasuble”



silkEXX_Weaving → P108 has produced → silkEXX_Fabric → P2 has
type → E55_Type “Chasuble”

silkEXX_Weaving → P2 has type → E55_Type “Twill” (Sergé)