

Digitization and preservation of traditional crafts

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Institute of Computer Science
15 - 16 July 2022, FORTH, Heraklion, Crete

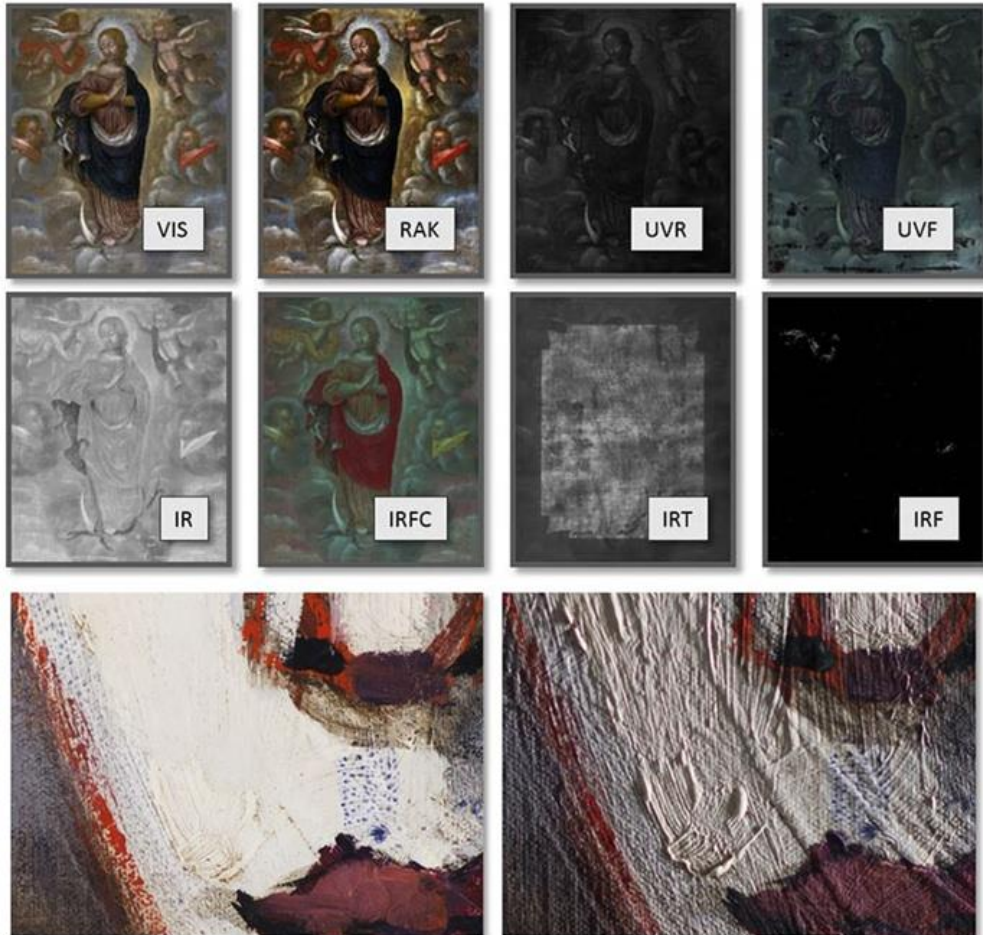


3D reconstruction of Knossos



Visual Arts

Photographic documentation



3D documentation

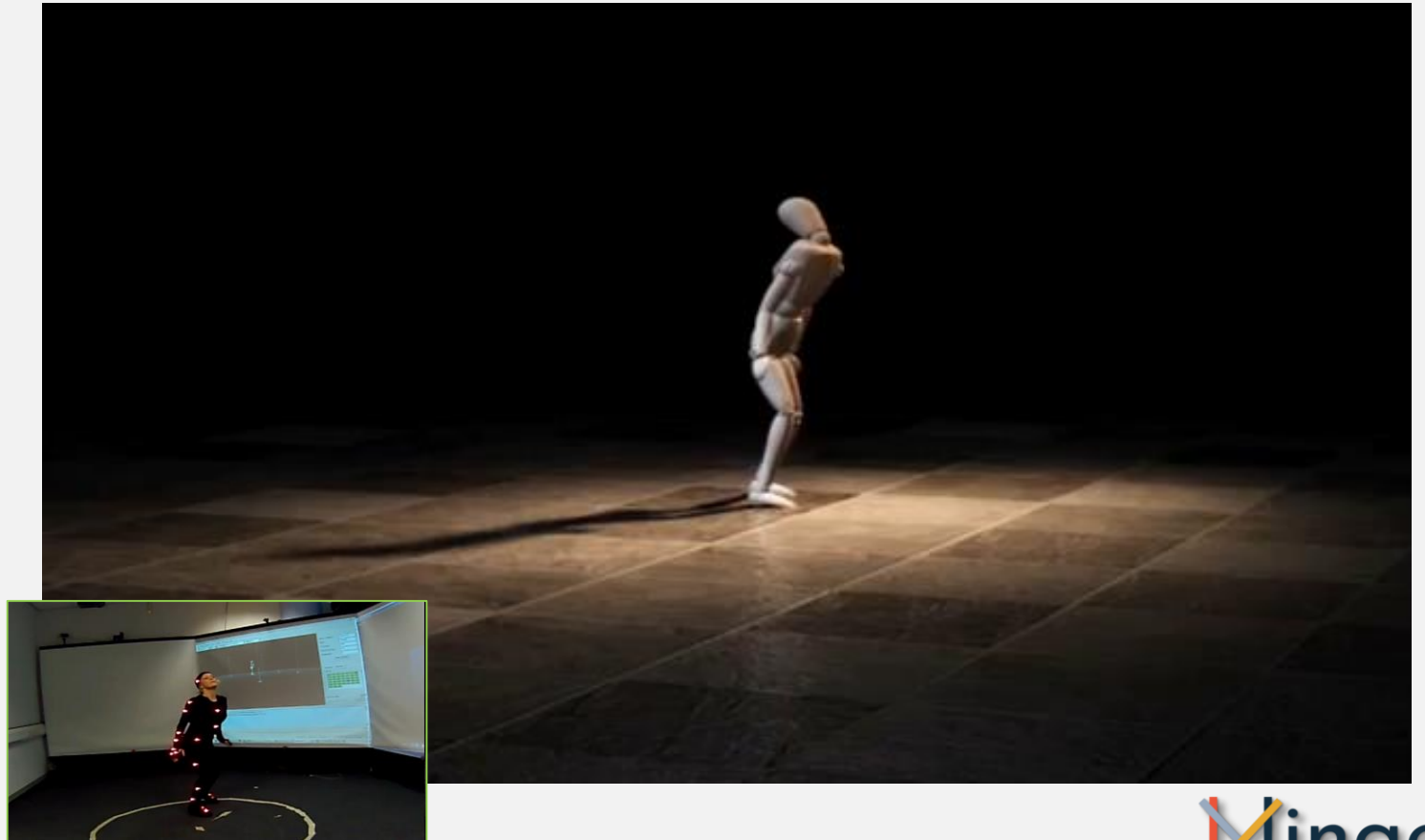


Performing Arts

Voice, Music



Dance, Theatre



Is there a difference between art and craft?



Laura Morelli <https://youtu.be/tVdw60eCnJI>

“Τέχνη” (techne)

- Arts: **visual** arts, **literary** arts, **performing** arts and **culinary** arts.
- *Fine Arts: painting, sculpture, architecture, music, and poetry, theatre, dance.*

«Τέχνη» ανθρώπινη **δραστηριότητα (activity)** που στηρίζεται σε ορισμένες γνώσεις και εμπειρίες και που έχει ως σκοπό τη **δημιουργία (creation)** ενός **πνευματικού (spiritual)** ή **τεχνικού (technical)** έργου.

UNESCO – 2003 ICH Convention

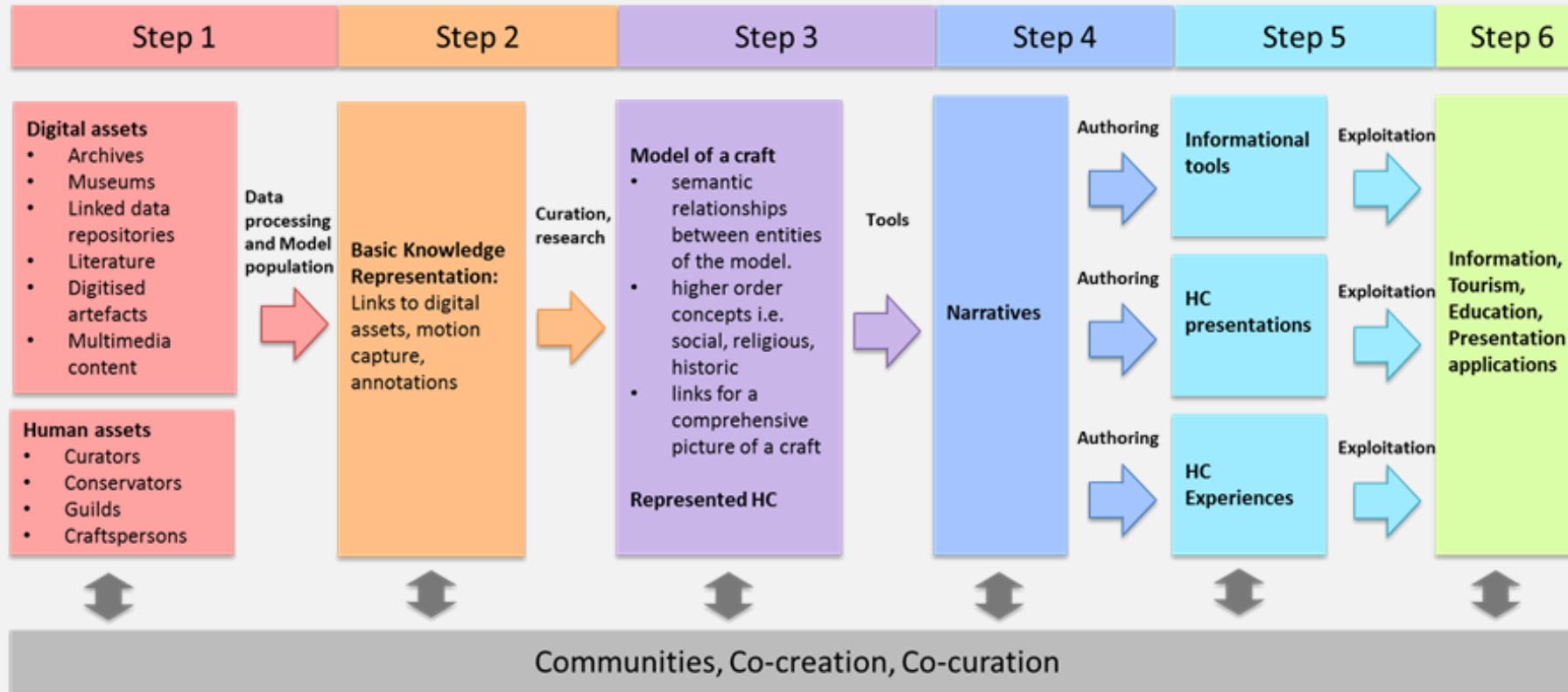


Oral traditions and expressions, Performing arts, Social practices, rituals and festive events, Knowledge and practices concerning nature and the universe, **Traditional craftsmanship**

Mingei. Representation and preservation

	Matter - Tangible	Make - Perform	Mind(s) - Intangible
Scope	Objects & spaces Documents Recordings	Physical events, Embodiment, Senses, Qualia, Perception & Action, Gestures, Dexterity, Skill	Process, Method, Know-how History, Tradition, Identity, Values, Significance, Aesthetics
Physical Content	Craft articles, Tools, Materials Workshop & Environment <u>Content carriers</u>	Craft practice, tool usage, techniques, machine operation	Literature, Testimony, Description, Instructions <u>Verbal & Visual & Semiotic content</u>
Recordings	Objects & Environments <u>Material scan</u> Photographs, 3D digitisation, material scans	Actions & Events <u>Dynamic scan</u> Audiovisual & 3D recording of performances	Semantics and Semiotics <u>Thick Representation</u> Cause and Context, Words & Icons, Narratives & Symbols, Traditional Motifs
Transmission	Preservation Conservation Restoration	Ethnography, Choreography Apprenticeship, Training Technical education Re-enactment	Safeguarding & preservation Documentation, conservation, and investigative knowledge discovery

A protocol for craft representation



- A Representation Protocol for Traditional Crafts. (2022), *Heritage*.
- Transferring Traditional Crafts from the Physical to the Virtual World: An Authoring and Visualization Method and Platform, (2021) *ACM Journal on Computing and Cultural Heritage*.
- A Web-Based Platform for Traditional Craft Documentation. *Multimodal Technologies and Interaction*. (2022).
- Digitisation of traditional craft processes *ACM Journal on Computing and Cultural Heritage*.
- Representation of socio-historical context to support the authoring and presentation of multimodal narratives: The Mingei Online Platform, (2021), *ACM Journal on Computing and Cultural Heritage*.

Tangible Heritage (objects)

Outdoors



Aerial & Terrestrial Photogrammetry

Laser scanner

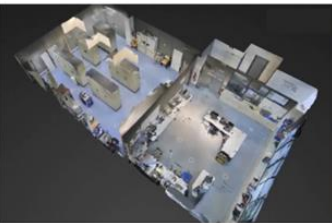
Handheld scanner

Handheld photogrammetry

Large

Small

Indoors



Laser scanner

Handheld scanner

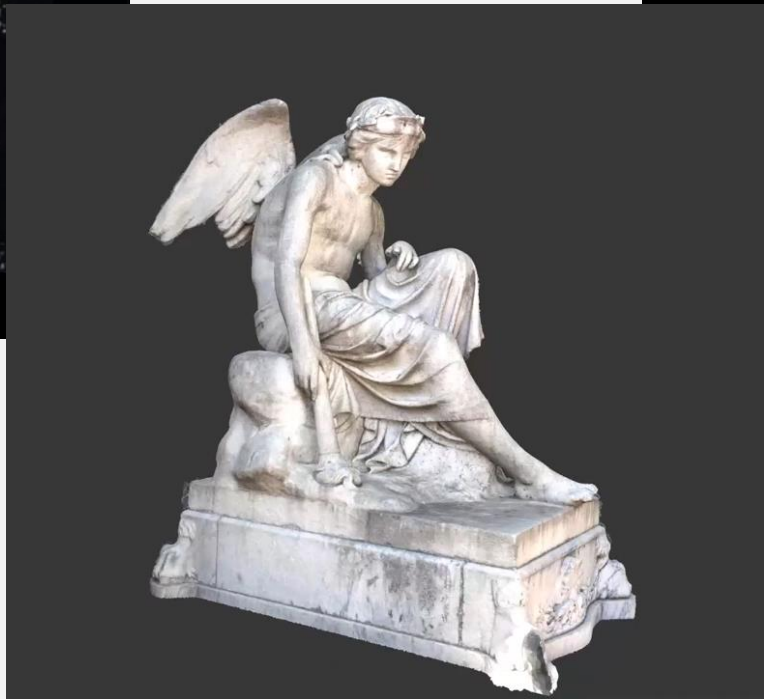
Handheld 3D camera

Handheld photogrammetry

Tangible Heritage (objects)



Tangible Heritage

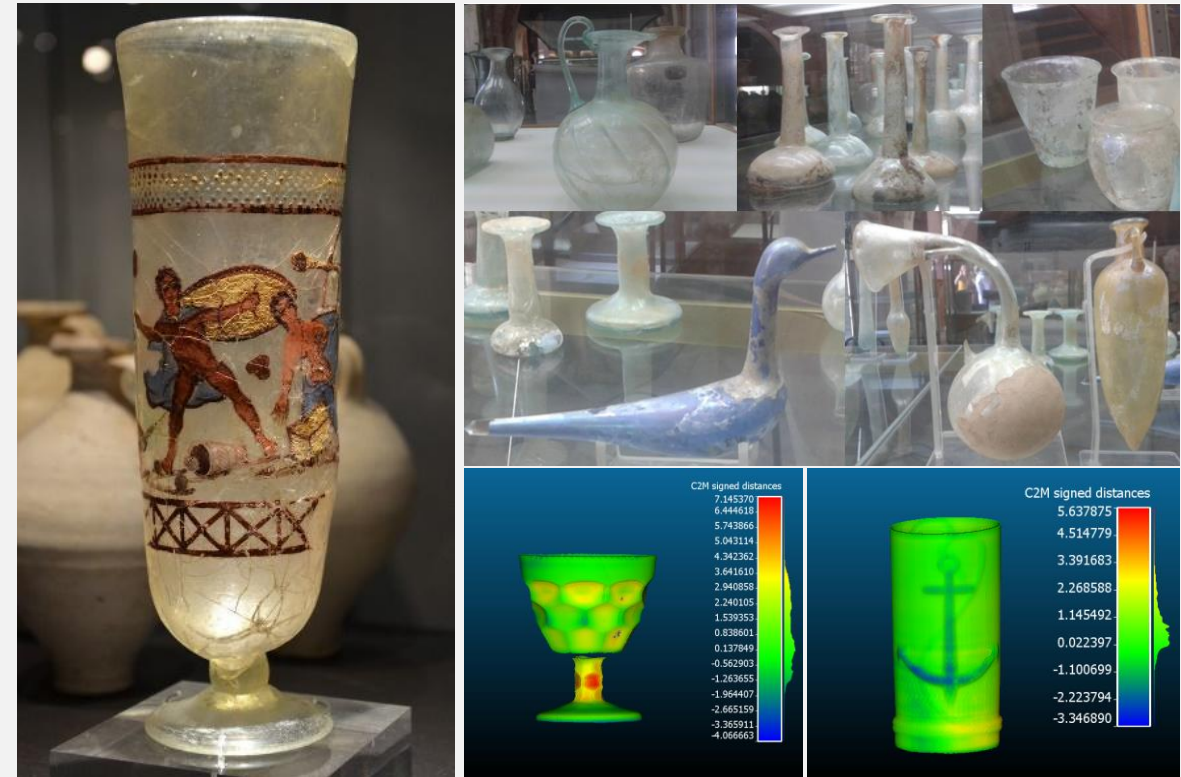


New modalities



[A Low-Cost Contactless Overhead Micrometer Surface Scanner](#), (2021), Applied Sciences, doi:10.3390/app11146274.

Synergy with Transparent3D Marie Curie



[1] Optical tomography: A rapid, cost-effective 3D reconstruction technique for glass cultural heritage objects, **EuroMed 2022**. [2] Comparison of non-destructive optical 3D reconstruction methods on multiphase and partially painted glass artworks, **EuroMed 2021**

Intangible Heritage

Large (body, bodies)

Small (hands, feet)



Simple (visibility)



Complex (clutter)

Optical MoCap

Visual body tracking (RGB)

Visual hand tracking (RGB, RGBD)

Inertial MoCap

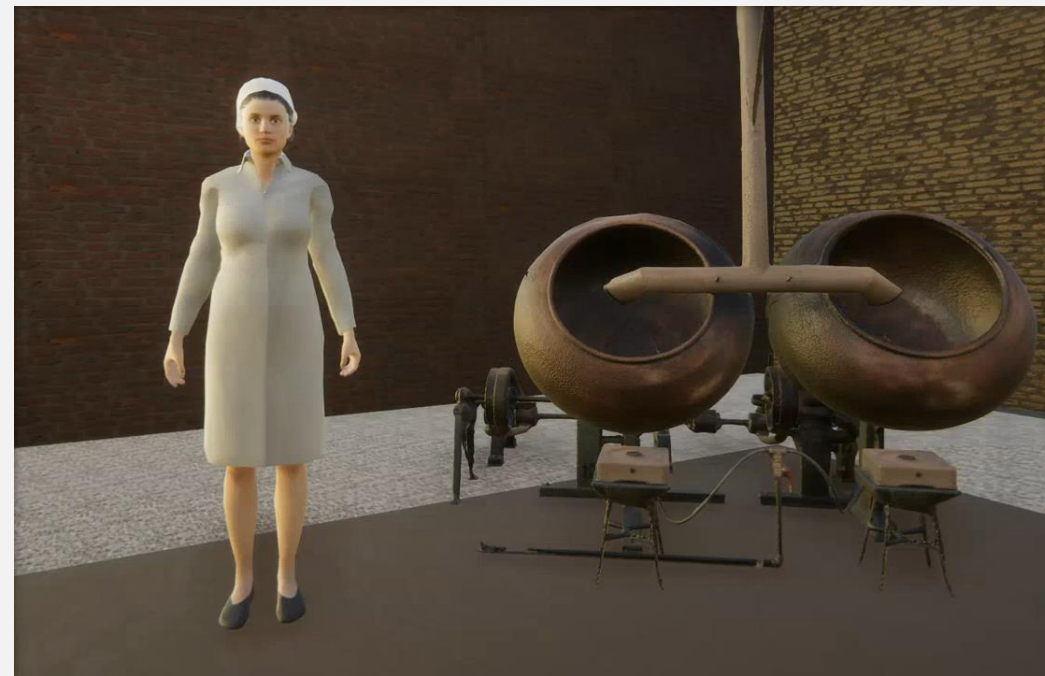
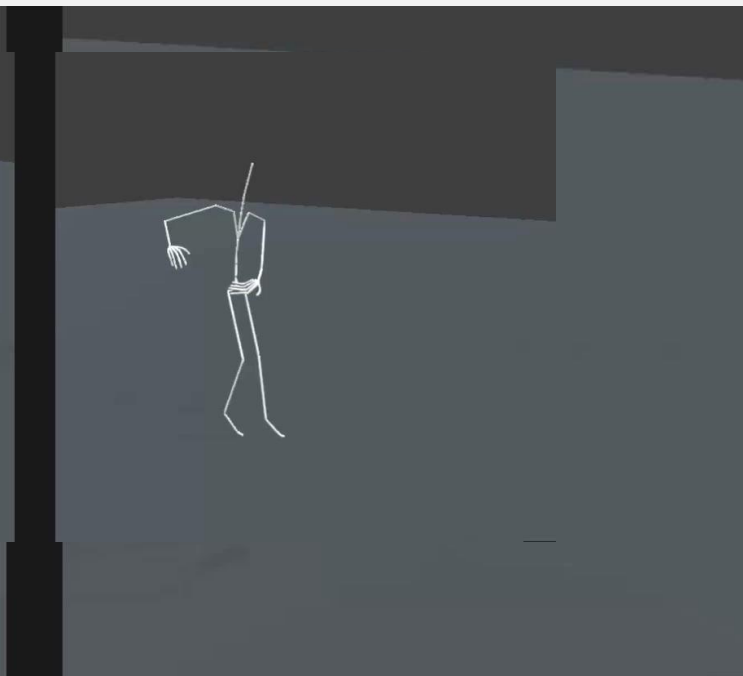
Mechanical MoCap

MoCap

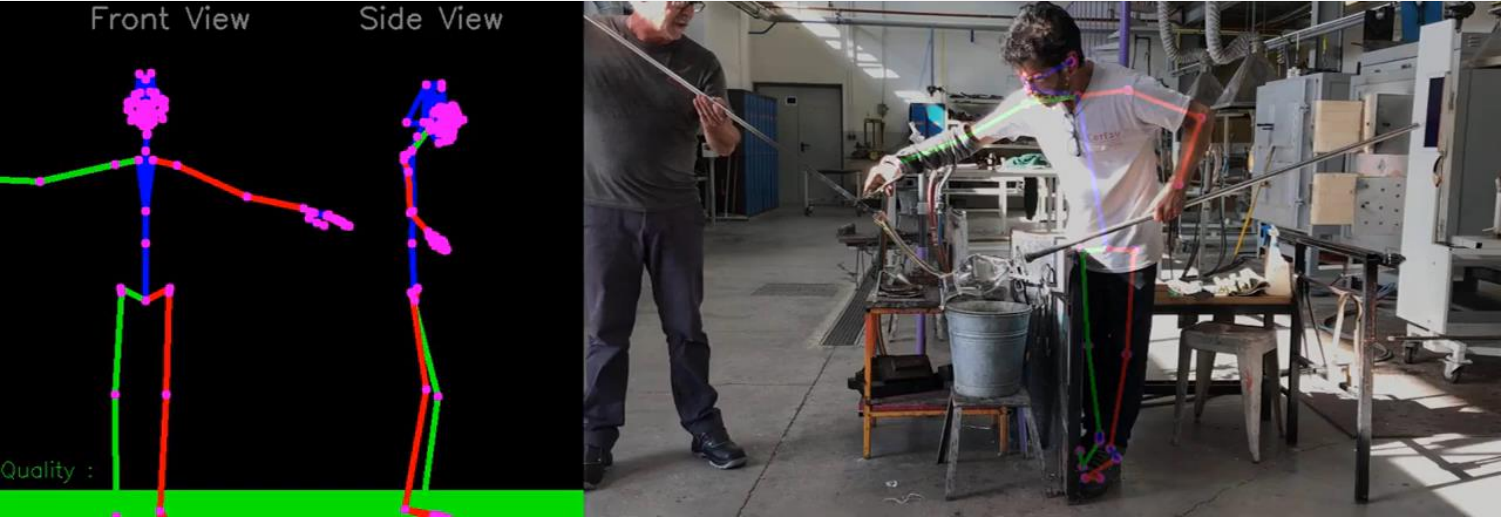
DUSTING

MasticDustingPIOP20190911P1G1R01

ORIGINAL BVH FILE



Video analysis



Digital Assets

ID #715

File information:

Item: seq_4123.bvh

Sensor information:

Sampling rate, rig geometry



#8792

Media object

Content information

Items: ang.{obj,mtl}

Faces: 1M, Vertices: 2.8M

World information

Dimensions: 1.5 x .8 x 8 m³

Location: 44°40'N 26°09'E

Time of acquisition 22/07/19



#2133

Media object

Content information

Item: img393xds.png

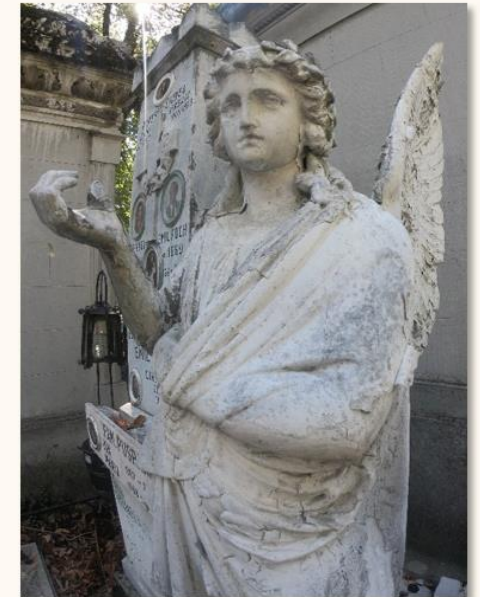
1200 x 960, RGB, 48 bit

World information

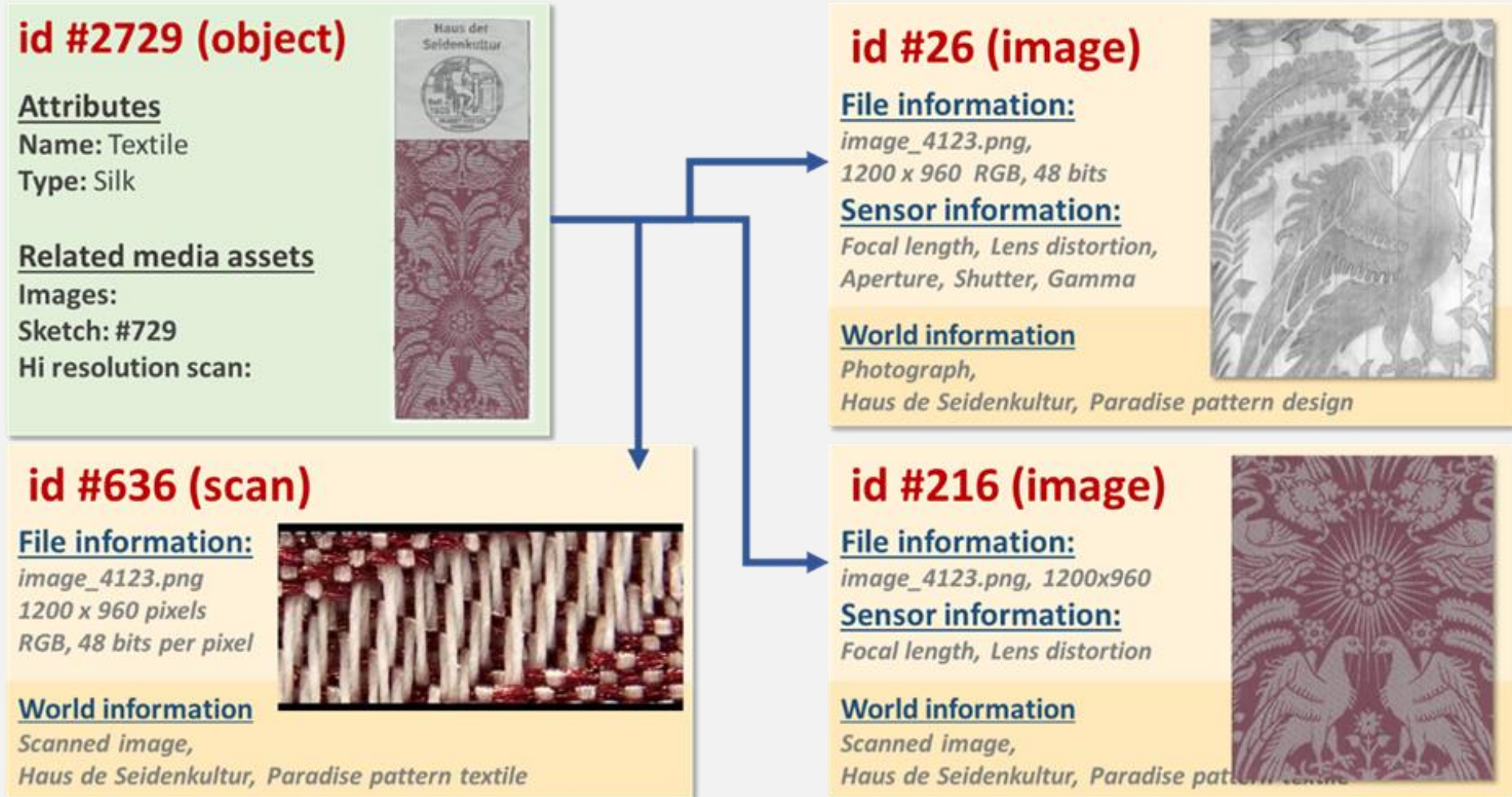
Dimensions: 1.5 x .8 x 8 m³

Location: 44°40'N 26°09'E

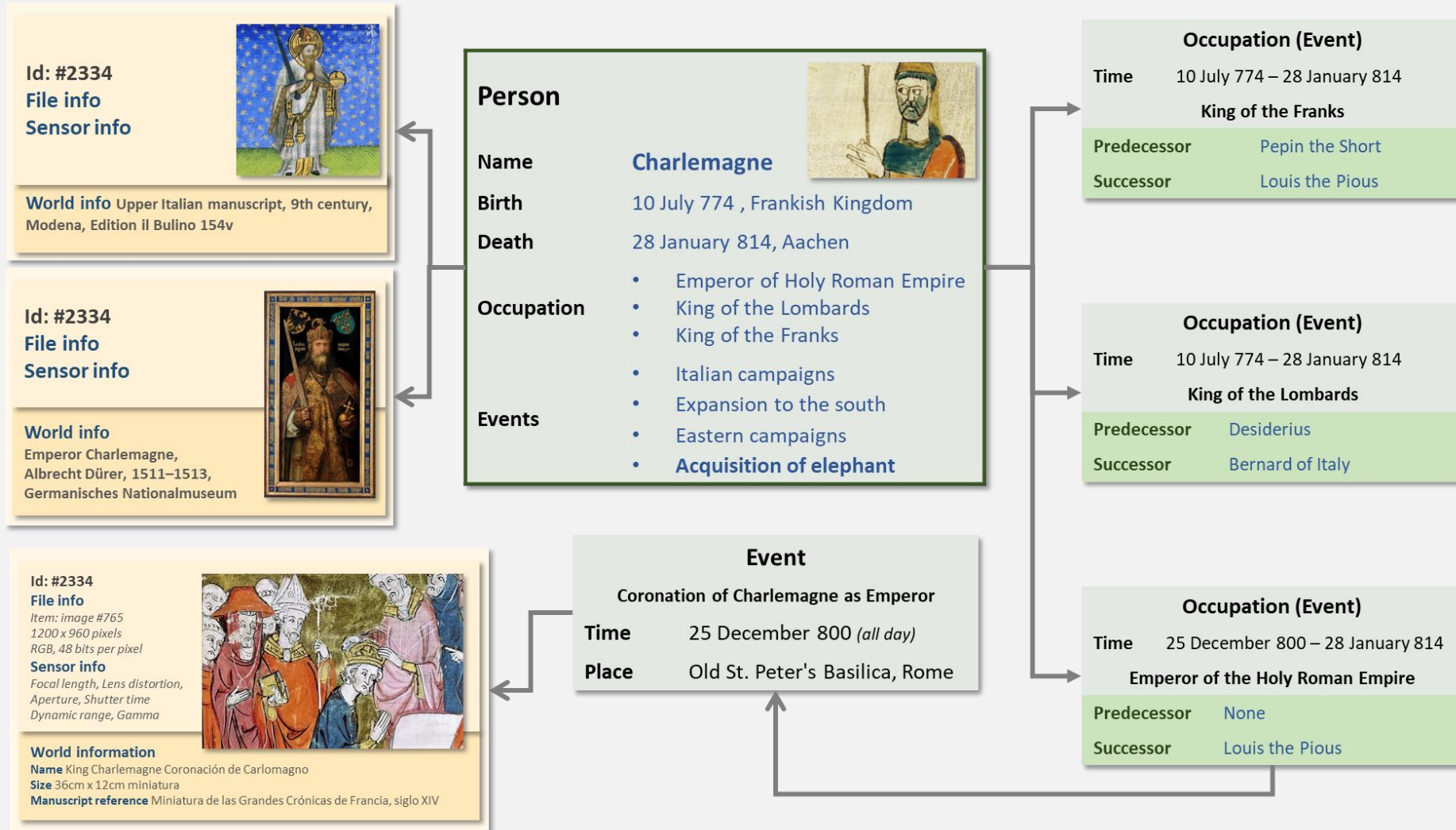
Time of acquisition 22/07/19



Knowledge elements



Knowledge elements



A semantic meta-model for crafts

The Mingei Ontology

Basic knowledge elements

- **Event** oriented representation
- **Place**
- **Person / Social group**
- **Object**
- **Material**

EDM and CRM compliant.

The screenshot shows the Zenodo repository page for the Mingei Ontology. The page is dated April 7, 2020, and is titled "Mingei Ontology" by Carlo Meghini, Valentina Bartalesi, Daniele Metelli, Nikolaos Pantarakis, and Xenophon Zabulis. The description states that the repository contains the "Craft Ontology (CrO)" developed in the Mingei project, which is an application ontology obtained by integrating several existing ontologies, including CIDOC CRM, Narrative Ontology, FRBRoo, OWL Time, and Dublin Core. The page also shows a file list for "Mingei-Ontology-master.zip" with a size of 30.4 kB. The page is indexed in OpenAIRE and has a DOI of 10.5281/zenodo.3742829. The page also shows a list of communities, including the Mingei H2020 Project, and a list of grants, including the European Commission's Mingei - Representation and Preservation of Heritage Crafts (822336). The page also shows a list of versions, including Version 1.0 on April 7, 2020.

<https://doi.org/10.5281/zenodo.3742828>

Crafting events

Event

#2411 (Object)

Tool: Blowpipe

Name Jean's blowpipe

Image (3827)

#3827

Media object: Blowpipe

3D file



#2211 (Person)

Actor: Glass-blower

Name Jean

#4356 (Event, Material transformation)

Process step: Bubbling

Operator Jean (2211)

Tool Jean's Blowpipe (2411)

Human motion 3D (est. #1) & (est. #2)
posture angles, for hands & head

Influences Material transformation (4356)

Media objects: (3273), (3827)



#732 (Object)

Product: Glass bubble

Name First bubble

#716

Material: Glass

State liquid

#3827

Media object

Motion capture

File info

Sensor info



#3273

Media object

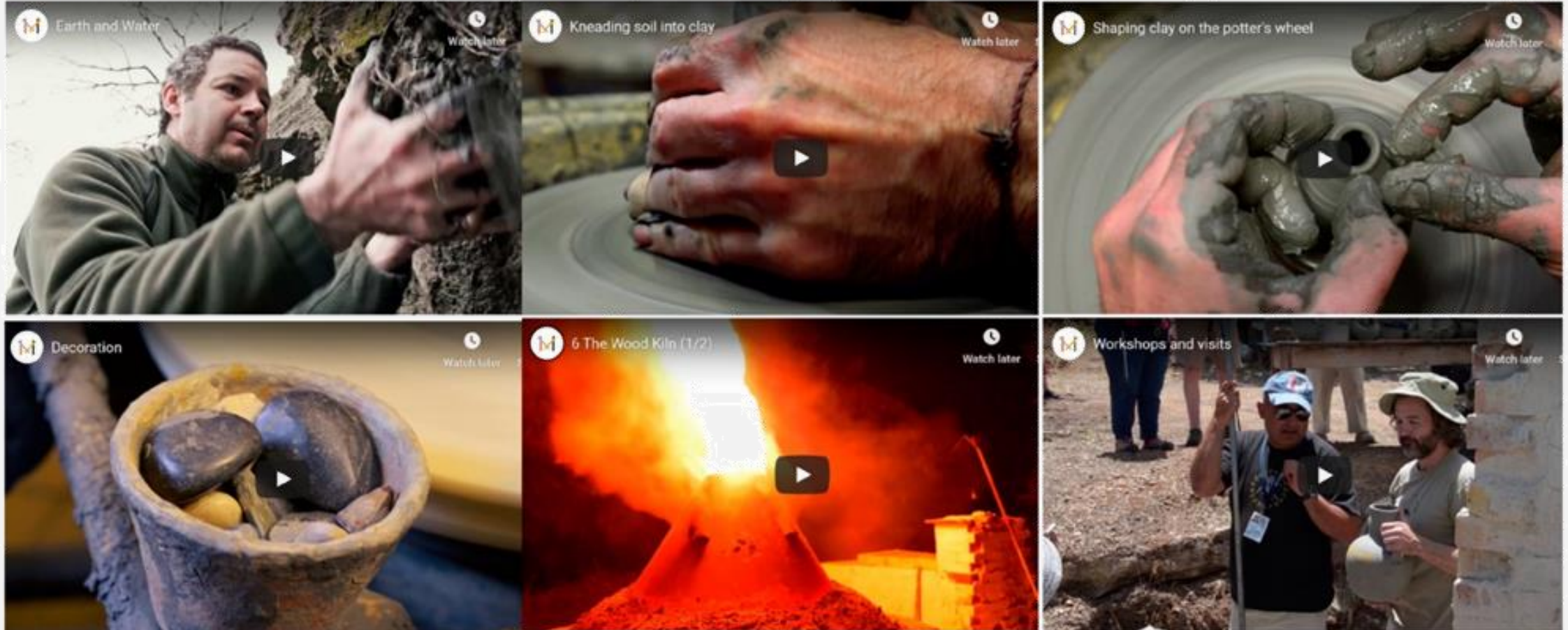
Visual tracking

File info

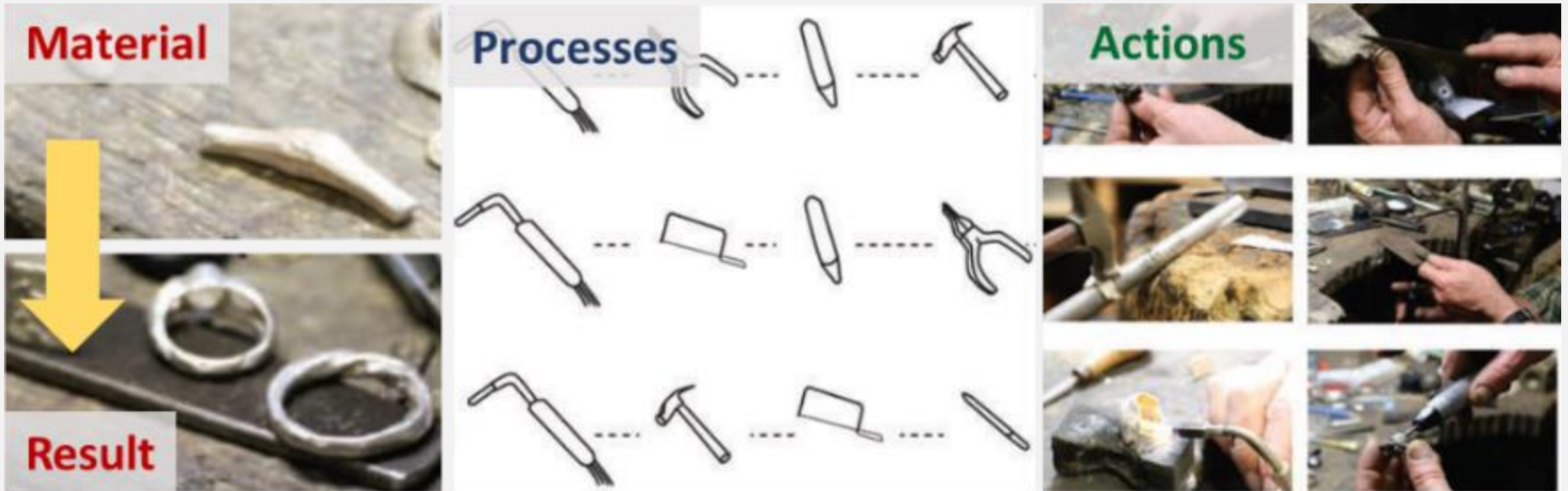
Sensor info



Process



Crafting schemas and processes



Actions are events

Schemas Prescriptions, Recipes, and Instructions

Canadian apple pie

Ingredients

- 3 tablespoons cornstarch
- 2 tablespoons white sugar
- 1 teaspoon ground cinnamon
- 1 teaspoon ground nutmeg
- 1/4 teaspoon salt
- 5 cups apple - peeled, cored, and sliced
- 3/4 cup pure maple syrup
- 1 egg
- 1 egg yolk
- 1/2 teaspoon water



Cooking time
1h 40m

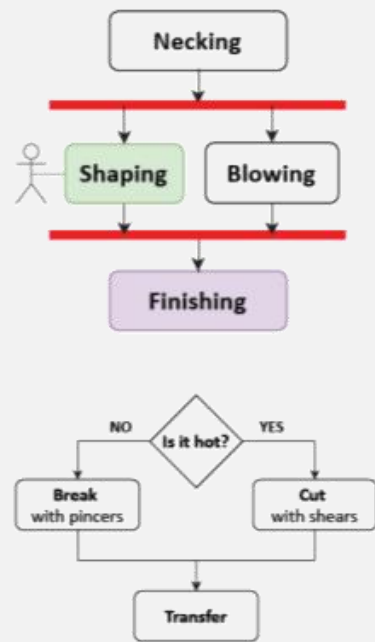
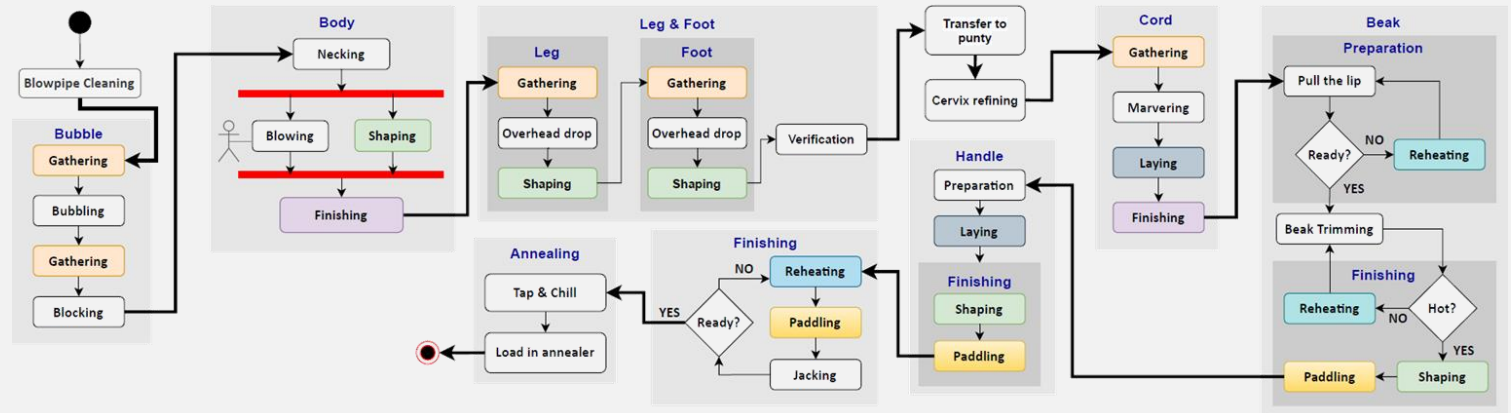
Calories
398

Directions

- 1 Preheat oven to 325 degrees F (165 degrees C). Line a pie dish with 1 crust.
- 2 Whisk together cornstarch, sugar, cinnamon, nutmeg, and salt in a large bowl. Stir apples, maple syrup and whole egg into cornstarch mixture.
- 3 Pour apple mixture into the prepared crust. Cover with top crust, seal edges, and cut away excess dough. Make several small slits in the top to allow steam to escape. Whisk together egg yolk and water in a small bowl; brush over the pie. Cover pie loosely with aluminum foil and place on a baking sheet.
- 4 Bake in the preheated oven for 35 minutes. Remove foil; continue baking until crust is golden brown, about 15 minutes. Cool on a wire rack.

DD FORM 1289 1 NOV 71 DOD PRESCRIPTION	
FOR (Full name, address, & phone number) (If under 12, give age)	
<i>John R. Doe, HM3, USN</i>	
<i>U.S.S. Neverforgotten (DD 178)</i>	
MEDICAL FACILITY	DATE
<i>U.S.S. Neverforgotten (DD 178)</i>	<i>23 Jan 99</i>
R_s (Superscription) (Inscription) <i>In Belladonna</i> <i>Amphogel qsd</i> (Subscription) <i>M & FI Solution</i> (Signa) <i>Sig: 5ml tid a.c.</i>	gm or ml. <i>15 ml</i> <i>120 ml</i>
MFGR: <i>Wyeth</i>	EXP DATE: <i>12/02</i>
LOT NO: <i>P39K106</i>	FILLED BY: <i>KMT</i>
R NUMBER 10072	<i>Jack R. Frost</i> LCDR, M.D., USNR SIGNATURE RANK AND DEGREE
EDITION OF 1 JAN 80 MAY BE USED FOR S/N 0102-LF-012-6201	

Schema



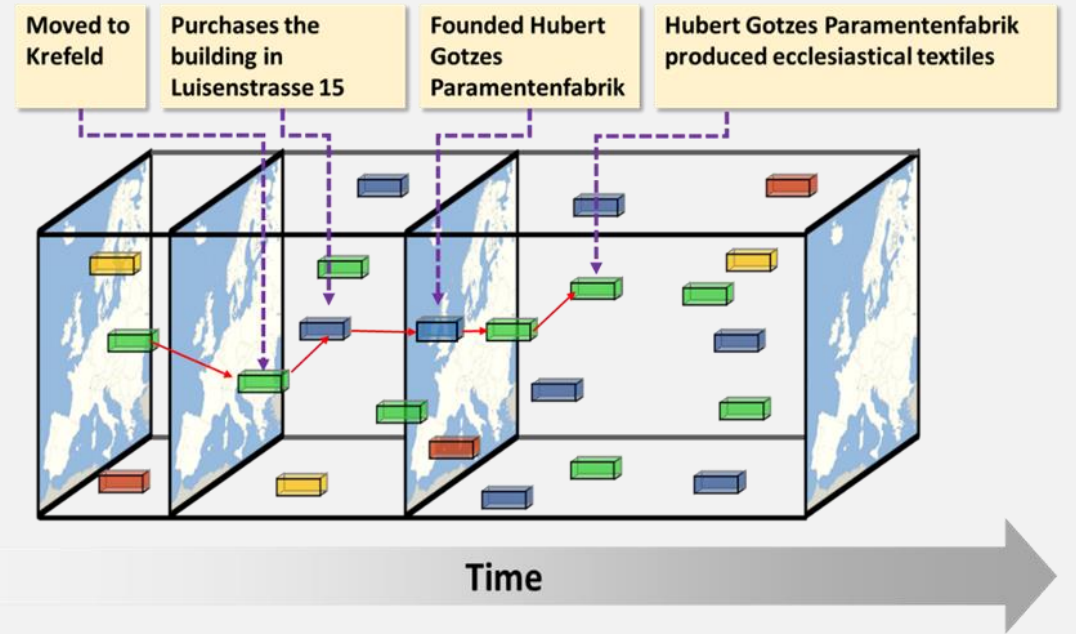
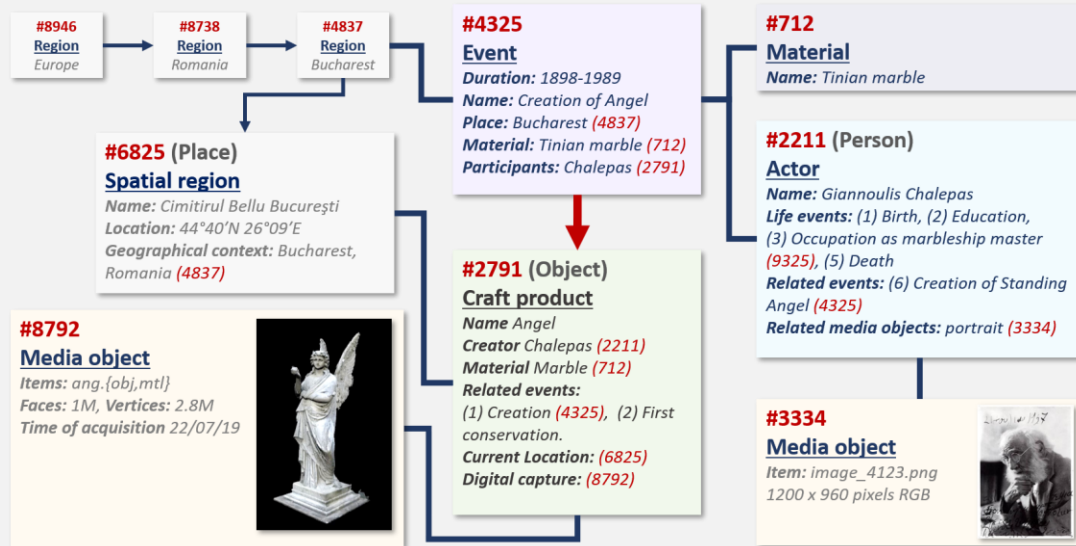
Work of risk

The Nature and Art of Workmanship - David Pye (1968)

Historical events and the fabula

Event

Fabula



[Representing narratives in digital libraries: The narrative ontology](#), (2021), *Semantic Web*, doi:10.3233/sw-200421

MOP Digital assets

Create New Related media object ✕

* required field

Type*
Image ✕ ▾

URL address of media source*

Name*

Description
 ✕

Media object (short)

Media name*

Description
 ✕
[+ Add description](#)

Source (URL address) ⓘ
 ✕

Media object fragments

Media name* ✕

Description
 ✕
[+ Add description](#)

Media fragment source (url address)
 ✕

Media name* ✕

Description
 ✕
[+ Add description](#)

Media fragment source (url address)
 ✕
[+ Add media object fragments](#)

Associate with ⓘ
 ✕ ✕
[+ Add associate with](#)

Creative commons license ⓘ
 ✕ ✕

Creator
 ✕
[+ Add creator](#)

Creation date ⓘ
 ✕

Media object (full)

Persons, objects, places, materials

Person Details

View [Authoring](#) [Related media objects](#)

Person name Georges Bontemps
Alternative name <http://viaf.org/viaf/143637905>

Birth information [Birth of Bontemps](#)


Death information [Death of Bontemps](#)

Nationality French

Family information Georges Bontemps is the grand son of Jean Nicolas Bontemps, a notary in Paris from 1732 to 1786 and the son of Jean Marie Nicolas Saint-Fiac, one of the first graduates of the École Polytechnique and who served first as a teacher of experimental physics and then as an officer in the French first Empire army. His mother is Jeanne Marie Fercé, the daughter of Jean Baptiste Pierre François Fercé, an engineer in mathematical instruments who works for the creation of the "república romana" during the French revolution under the guidance of Monge and Berthollet. But his parents was not married when Georges Bontemps was born and was an illegitimate child for the French administration.

Educational information Early Education He was tutored by a friend of the family called Bréouville, a mathematician who prepared him for entry to the École Polytechnique and who also translated Newton's Principia into French. Joined the army as an infantry officer, served as a staff officer and retired from the army as a major. In 1837 Georges Bontemps was refused entry to the École polytechnique, despite having done well in the entry examination.

Related Images



General information

1826 Bontemps invented air glass made with copper.

1845 Bontemps published "Essai historique et pratique des moyens employés pour la fabrication des verres Bignone et du filer-glass et cristal-glass" and "Recherches sur verres au sulfate. Les verres de vit et au sulfate renouveau. Quelques réflexions sur ce sujet".

1855 Bontemps came back to France and kept close relation with Chance Brothers until the end of the 1860s.

1828 Bontemps met Lucie Chance in England and his production of first glass was used in Chance Brothers glass factory.

1829 Antoine Claude Bontemps Associée, opened a deposit of Chazy-le-Bû glass products in London.

1847 Due to the bankruptcy of the glass factory, Bontemps leave Chazy-le-Bû.

1853 Bontemps published "Examen historique et critique des verres, vitraux, composés à base XXIV de l'Exposition universelle de 1853".

1830 Bontemps exhibited for the first time reproduction of the Marano Negro glass made with the collaboration of C. Jones at the "Exposition des produits de l'industrie".

1848 Bontemps leave France to take a position at the Chance Brothers glass factory in Brompton near Birmingham in England. He was in charge of the Chemical and Ornamental departments, carried out the manufacture of optical glass, advised and assisted in the glass business of the firm.

1849 Bontemps gave an important collection of glass objects to the Conservatoire des Arts et Métiers, more than fifty books, medals, fabrication steps and treated papers (in 02/07/18 2007).

1848 Bontemps published "Guide du Verrier: traité historique et pratique de la fabrication des verres, vitraux, vitraux" ("Glassmaker's guide: historical and practical treatise about the making of glass, crystal, stained glass and some new items of the Conservatoire").

1831 Baronet, Saint Louis, Chazy-le-Bû and Bony glass factory (now Hays & Laune Company as the result for their glass production. They were a firm at 50 rue de Paris, Paris.

1830 Lucie Chance visited the Chazy-le-Bû glass factory.

1823 He became director of the Chazy-le-Bû glass factory at the age of 24 years old. The glass factory was visited by Pierre Godekin, a glassworker from the Ardennes, in 1820.

Occupation information Director
Head of Department

Related Events Eugène Pelletier invented a solution
Report on plate and mirror glass
Friendship between Robert Lucie Chance and Georges Bontemps
Chance Brothers' end at Chazy-le-Bû

Getty information N/A

Object details

View [Authoring](#) [Related media objects](#)

Object name Angel

Description Marble sculpture "Angel", attributed to Yannoulis Chalcoas.

Material Marble


Creator Yannoulis Chalcoas

Creation Date 02 Jan 1875


Destruction Date N/A

Getty information <http://vocabularies.unic.ac.uk/browser/theaurns/concept00193> - Sculpture - <http://vocab.getty.edu/uri/300047180> - outdoor sculpture - <http://vocab.getty.edu/uri/300047600> - statues - <http://nomenclatures.getty.edu/uri/300047600> - Sculpture - Fluted

Related Images



Location



Lat: 44.4031443, Long: 16.0980108

GeoNames

Person Details

View [Authoring](#) [Related media objects](#)

Person name Yannoulis Chalcoas

Alternative name Γιαννούλης Χαλκοάς

Birth information [Birth of Yannoulis Chalcoas](#)

Death information [Death of Yannoulis Chalcoas](#)

Nationality Greek

Family information N/A

Educational information N/A


General information Yannoulis Chalcoas was a Greek sculptor and significant figure of Modern Greek art.

Occupation information Occupation of Yannoulis Chalcoas

Related Events [Creation of Angel](#)

Getty information <http://vocabularies.unic.ac.uk/browser/theaurns/en/pages/concept3100> - Sculptors - <http://vocab.getty.edu/page/uri/300435235> - Stone sculptures

Related Images



Getty

Enterprise Details

View [Authoring](#) [Related media objects](#)

Enterprise name Chance Brothers and Company

Alternative name Chance Brothers

Description N/A

Contact information N/A

Establishment of enterprise [Foundation of the Chance Brothers and Company](#)

Dissolution of enterprise [End of Chance Brothers and Company](#)

Member joined enterprise [Addition of partner in Chance Brothers and Company](#)

Member left enterprise N/A


Changed Ownership N/A

Related Events Bontemps was employed at Chance Brothers' company
The Great Exhibition Crystal Palace Exhibition

Getty information N/A

Enterprise location N/A

Related Images



Product Details

View [Authoring](#) [Related media objects](#)

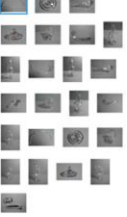
Product name Carafe

Alternative name N/A

Description N/A

Getty information <http://vocab.getty.edu/uri/300052932> - glassblowing - <http://vocab.getty.edu/uri/300052932> - glassblowing - <http://vocab.getty.edu/uri/300052977> - glass (waterfall)

Related Images

Product Details

View [Related media objects](#)

Product name Xysto 02

Product name (url) [Xysto 02](#)

Alternative name N/A

Description A Xysto (plural Xysta, meaning "scratches") mostly consists of black and white decorative motifs in different shapes. It is a form of decorating the facades of the buildings of the village of Pyrgi, at the island of Chios, in Greece. Xysta are made of various black and white shapes. They start from the middle of the house doors and extend upwards, covering most of the facade. It is a style that is believed to be of Italian - Genoese - origin (arguably). The tradition of Xysta is of great importance for the inhabitants of Pyrgi as they are connected to their identity.

Getty / UNESCO / other information <http://vocabularies.unic.ac.uk/browser/theaurns/concept346> - Plastic arts - <http://nomenclatures.getty.edu/uri/300053622> - Relief - <http://vocab.getty.edu/uri/300053575> - relief (sculpture techniques) - <http://vocab.getty.edu/uri/300079003> - decorations (ornamental work) - <http://vocabularies.unic.ac.uk/browser/theaurns/concept347> - Visual arts - <http://vocabularies.unic.ac.uk/browser/theaurns/concept10193> - Sculpture - <http://nomenclatures.getty.edu/uri/300435235> - Stone sculptures - <http://vocabularies.unic.ac.uk/browser/theaurns/concept10193> - Sculpture - <http://nomenclatures.getty.edu/uri/300435235> - Stone sculptures

National Aggregator

Semantic annotations

Event and fabula

Event Details

	View	Authoring
Event name	Arab pirates destroy Chios' ports	
Description	From the 7th century, Arab pirates marauding the coasts of the island destroyed its ports.	
Start date	N/A	
End date	N/A	
Event was influenced by another event	N/A	
Occured during another event	7th century AD	
Event participants	N/A	
Getty information	N/A	

Tips

- Always click the 'Save Changes' button before leaving the form, or your changes will be lost.
- Use the delete button on the right of a field if you want to clear the entered entry and input new information.

Event name*

Arab pirates destroy Chios' ports

Alternative name

Enter alternative name here...

Description

From the 7th century, Arab pirates marauding the coasts of the island destroyed its ports.

Location ?

Chios

Related media object ?

Search or create a media

Start Date ?

Select or enter start date here...

End Date ?

Select or enter end date here...

Occured during another event ?

7th century AD

Event was influenced by another event

Select event was influenced by another event here...

+ Add event was influenced by

Event Participant ?

+ Add event participant

Information from Getty

+ Add information from getty

Save Reset

Fabula name*

History of Krefeld Silk Industry

Description

The fabula of the Krefeld textile industry.

+ Add description

Fabula Event

Krefeld :: Design of 7th expansion x ▾ x

Krefeld Infrastructure :: Approval of 7th expansion plans x ▾ x

Thirty Years' War x ▾ x

Local History :: Mennonite minority in Krefeld :: Foundation x ▾ x

Krefeld Textile Industry :: The shift to silk x ▾ x

Local History:: Religious Persecutions in Europe due to the Thirty Years War x ▾ x

Local History:: Religious Minorities Find Refuge at Krefeld x ▾ x

Local History :: Ecclesiastical garment and parament production x ▾ x

Local History :: Metropolitisation of Krefeld x ▾ x

Krefeld Textile Industry :: Decline of Ecclesiastical Textile Industry x ▾ x

Local History :: Religious Asylum x ▾ x

HdS :: Establishment of Association of Friends x ▾ x

Krefeld :: A city like Silk and Velvet x ▾ x

+ Add fabula event

Event and schema

Glass schema

Schema preview

Process schema description

Investigative glass process that was possibly used by George Bontemps to create a glass carafe.

Step	Step description	Execution order	Substeps
0. Blowpipe cleaning	The blowpipe is cleaned from any residuals from past use.	leads to step 1. Blowing and Shaping	0
1. Blowing and Shaping	A bubbling action is performed by the glass blower using a blowpipe and which results in the creation of a bubble of air within a liquid quantity of glass that has been just fathered from the workshop furnace.	leads to step 2. Leg and foot laying	5
2. Leg and foot laying	The leg and the foot of the carafe are constructed.	leads to step 3. Transfer to punty	3
3. Transfer to punty	The glass body is transferred from the blowpipe to the punty.	leads to step 4. Cervix refining	3
4. Cervix refining	Cervix is refined.	leads to step 5. Cord laying	0

Specify Execution Order - Is it hot?

Step name: Is it hot?

Execution order option

leads to alternative paths

Description

Alternative path

Condition description*

YES

Step that comes next

Cut glass with shears

Condition description*

NO

Step that comes next

Cut glass with shears

+ Add alternative path

Decision point

Specify Execution Order - Necking

Step name: Necking

Execution order option

occurs in parallel with

Parallel steps

Step

Master shaping body

Assistant blowing

+ Add step

+ Add execution order option

Synchronous actions

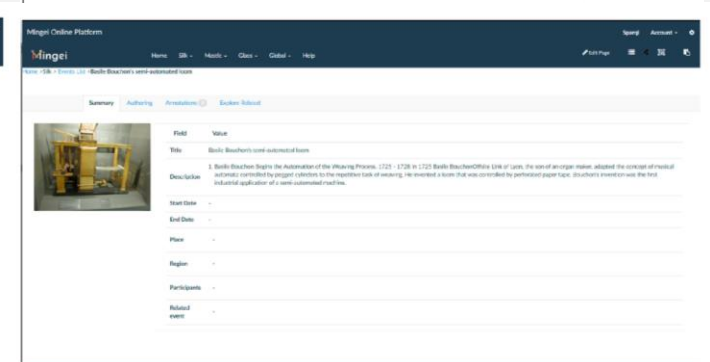
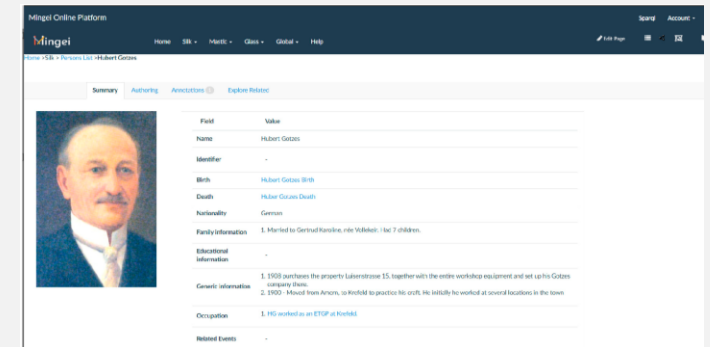
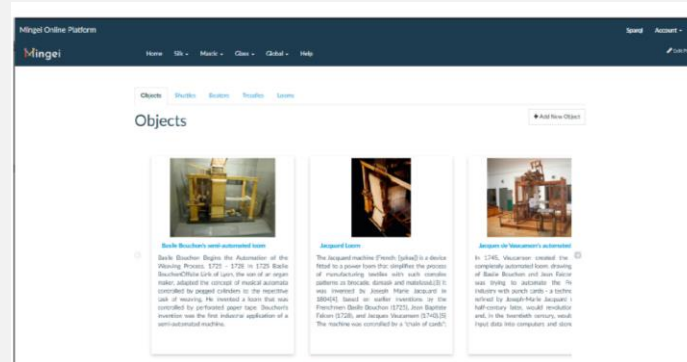
Access and management of CH digital assets

Machine-interpretable
established standards in
Semantic Web.

- CIDOC—CRM
- EDM
- Zenodo storage

Human-comprehensible
Web-based

Digital Conservation



O4 Recipes

Representation and Presentation of Culinary Tradition as Cultural Heritage, (2021), *Heritage*, doi:3390/heritage4020036.

View Authoring Timeline Annotations

How to fill-out this form

- All fields of this form are optional except name of fabula. You can fill out as much information as needed.
- Always click the 'Save Changes' button before leaving the form, or your changes will be lost.
- Use the delete button on the right of a field if you want to clear the entered entry and input new information.

Fabula name*

Politiki kouzina (Cuisine of Constantinople)

Description

A short story of events that have led to the migration of Greek Turkish citizens of Constantinople (Istanbul) to Greece. Through this migration, these citizens brought with them culinary traditions and tastes from their home city which are mainly influenced by spices and cooking preferences of the East.

+ Add description

Fabula Event

Chios joins independent Greece

Ottomans conquer Chios

Ottomans take over mastic monopoly

Ottomans allow facilitations for mastic communities: Part 1

Ottomans allow facilitations for mastic communities: Part 2

The September events

Migration of Greek minority of Istanbul

+ Add fabula event

Save Reset

View Authoring Timeline Annotations

Fabula name

Politiki kouzina (Cuisine of Constantinople)

Description

A short story of events that have led to the migration of Greek Turkish citizens of Constantinople (Istanbul) to Greece. Through this migration, these citizens brought with them culinary traditions and tastes from their home city which are mainly influenced by spices and cooking preferences of the East.

Events

Ottomans conquer Chios (Chios)

Ottomans take over mastic monopoly (Chios)

Ottomans allow facilitations for mastic communities: Part 1 (Chios)

Ottomans allow facilitations for mastic communities: Part 2 (Chios)

Chios joins independent Greece (Chios)

The September events (Istanbul)

Migration of Greek minority of Istanbul (no location specified)

Map showing the specified locations of events

Media's Details

View Authoring Related media objects Preview Annotations

Media name

Sweet bread

Description

With aromas of mastic and mastic and fresh yeast, this is the classic new years cake cooked by the Greek citizens of Constantinople (Istanbul).

Source (url address)

https://steliosparfioros.gr/wp-content/uploads/2015/12/politiki-vssloпита-tsoureki.jpeg

Associated with

Sweet bread

Cooking Ingredients

Cooking Ingredients

Cooking Devices

Cooking Devices

View Authoring Related media objects Annotations

How to fill-out this form

- All fields of this form are optional except name of cooking device. You can fill out as much information as needed.
- Always click the 'Save Changes' button before leaving the form, or your changes will be lost.
- Use the delete button on the right of a field if you want to clear the entered entry and input new information.

Device name*

Bowl

Description

Enter description here...

+ Add description

Cooking Device Type

Bowl

+ Add cooking device type

Related media object

Bowl-01

+ Add related media object

Save Reset

Cooking device authoring

View Authoring Related media objects Annotations

Device name

Large bowl

Description

N/A

Cooking device type

Bowl

Related Images

Cooking device details

View Authoring Related media objects Order steps Preview recipe

Recipe name

Sweet bread

Description

This sweet bread is also called in Greece 'Politiki vasilopita'. It is a traditional recipe from the Greek migrants from Istanbul and it is baked on New Year's Eve.

Diet category

N/A

Recipe category

Christmas

Origin

Minor Asia

Estimated servings

16

Difficulty

N/A

Rating

N/A

Nutrition Facts

N/A

Accompanying Drink

N/A

Execution time

30 minutes

Waiting time

120 minutes

Baking time

40 minutes

Total time

210 minutes

Author

Stelios Parfioros

Author Tips

N/A

Recipe result

N/A

Influenced by event(s)

Migration of Greek minority of Istanbul

Related Images

Steps

Steps	Sub-steps
01. Making mastic powder	0
02. Creating butter-milk-sugar mix	1
03. Creating yeast mix	1
04. Boiling eggs	1
05. Creating the sweet bread dough	1
06. Letting the sweet bread dough to rest 1	3
07. Kneading the sweet bread dough	0
08. Letting the sweet bread dough to rest 2	2
09. Preheating oven	0
10. Making egg wash	0
11. Coating the final sweet bread dough	0
12. Sprinkling the coated sweet bread dough	0
13. Baking the sprinkled sweet bread dough	0
14. Inserting the coin	0

Recipe preview

The recipe schema below shows the main steps, their subsequent substeps, if any, as well as the description of their relationship (i.e., order in which they occur, any specific condition, and other execution order details).

Steps and substeps	Execution order conditions
01. Making mastic powder	Leads to step: 02. Creating butter-milk-sugar mix
02. Creating butter-milk-sugar mix	occurs in parallel with 03. Creating yeast mix
↳ Heating butter with milk	
03. Creating yeast mix	occurs in parallel with 02. Creating butter-milk-sugar mix
↳ Warming water	
04. Beating eggs	waits for 02. Creating butter-milk-sugar mix then 05. Creating the sweet bread dough waits for 03. Creating yeast mix then 05. Creating the sweet bread dough
05. Creating the sweet bread dough	Leads to step: 06. Letting the sweet bread dough to rest 1
↳ Creating the sweet bread mix	
06. Letting the sweet bread dough to rest 1	Leads to step: 07. Kneading the sweet bread dough
↳ Forming the sweet bread dough	
↳ Engraving the rounded sweet bread dough	Leads to step: Engraving the rounded sweet bread dough
↳ Buttering the basin	Leads to step: Forming the sweet bread dough
07. Kneading the sweet bread dough	Leads to step: 08. Letting the sweet bread dough to rest 2
08. Letting the sweet bread dough to rest 2	Leads to step: 09. Preheating oven
↳ Preparing the oven pan	
↳ Placing kneaded sweet bread dough in the prepared oven pan	Leads to step: Placing kneaded sweet bread dough in the prepared oven pan
09. Preheating oven	occurs in parallel with 10. Making egg wash
10. Making egg wash	Leads to step: 11. Coating the final sweet bread dough
11. Coating the final sweet bread dough	Leads to step: 12. Sprinkling the coated sweet bread dough
12. Sprinkling the coated sweet bread dough	Leads to step: 13. Baking the sprinkled sweet bread dough
13. Baking the sprinkled sweet bread dough	Leads to step: 14. Inserting the coin
14. Inserting the coin	

Web presentation

Glass schema

Schema preview

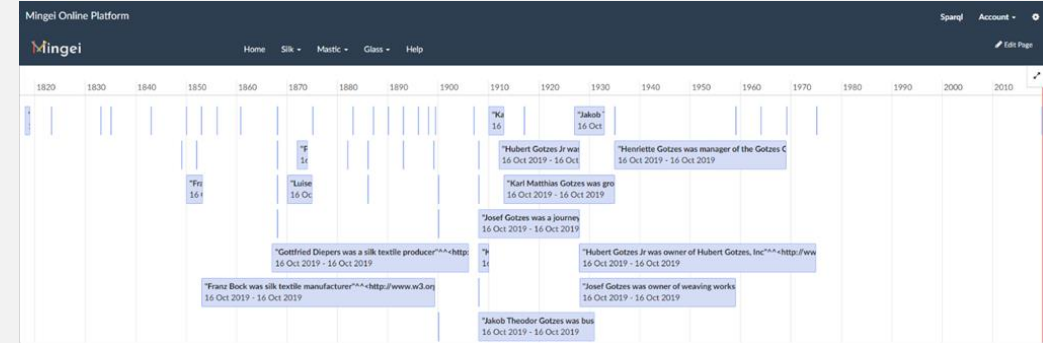
Process schema preview

The schema below shows the main steps, their subsequent substeps, if any, as well as the description of their relationship (i.e. order in which they occur, any specific condition, and other execution order details).

Process schema description
Investigative glass process that was possibly used by George Bontemps to create a glass carafe.

Step	Step description	Execution order	Substeps
0. Blowpipe cleaning	The blowpipe is cleaned from any residuals from past use.	leads to step 1. Blowing and Shaping	0
1. Blowing and Shaping	A bubbling action is performed by the glass blower using a blowpipe and which results in the creation of a bubble of air within a liquid quantity of glass that has been just fathored from the workshop furnace.	leads to step 2. Leg and foot laying	5
2. Leg and foot laying	The leg and the foot of the carafe are constructed.	leads to step 3. Transfer to punty	3
3. Transfer to punty	The glass body is transferred from the blowpipe to the punty.	leads to step 4. Cervix refining	3
4. Cervix refining	Cervix is refined.	leads to step 5. Cord laying	0

Steps and substeps	Execution order conditions
0. Blowpipe cleaning	
1. Blowing and Shaping	
↳ Gathering	Leads to step: Bubbling
↳ Bubbling	Leads to step: Second Gathering
↳ Second Gathering	Leads to step: Blocking
↳ Blocking	Leads to step: Body blowing
↳ Body blowing	
↳ Necking	occurs in parallel with Master shaping body Assistant blowing
↳ Master shaping body	waits for Assistant blowing then Finishing body
↳ Assistant blowing	waits for Master shaping body then Finishing body
↳ Finishing body	
2. Leg and foot laying	
↳ Leg laying	Leads to step: Foot laying
↳ Leg gathering and Overhead drop	Leads to step: Leg shaping
↳ Leg shaping	



Carafe making process

View | Authoring | Set steps | Related media objects | Process preview | Process preview (expanded view)

Name: Carafe making process
Description: This is the process of making a carafe Bontemps' style.
Location: Vannes-le-Châtel
Lat: 48.54651, Long: 5.78362

Activity participants: Jean-Pierre Matros (role: Glassmaker), Dominique Jamis (role: Assistant)

Process schema: Glass schema | Schema preview

Steps	Set order	Substeps
0. Blowpipe cleaning	1	0
1. Blowing and Shaping	2	5
2. Leg and foot laying	3	3
3. Transfer to punty	4	0
4. Cervix refining	5	0
5. Cord laying	6	4
6. Beak cutting	7	3
7. Handle laying	8	3
8. Finishing carafe	9	3
9. Annealing	10	2

View all related media objects

- Process steps
- 0. Blowpipe cleaning
 - 1. Blowing and Shaping
 - 2. Leg and foot laying
 - 3. Transfer to punty
 - 4. Cervix refining
 - 5. Cord laying
 - 6. Beak cutting
 - 7. Handle laying
 - 8. Finishing carafe
 - 9. Annealing

1. Blowing and Shaping

This substep results in the shaping of the carafe main body. The master blower and his assistant collaborate in order to achieve the blowing steps.



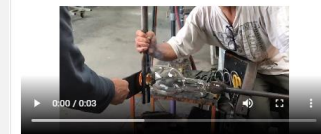
Steps

Gathering

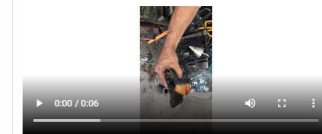
The glass master starts the blow of the furnace. Before adding the glass to the blow pipe, he checks if it is heated. He asks the吹pipe operator to use the furnace. He reads the blowpipe control under the glass to make use. He reads the blowpipe control a second time to the glass. He reads the furnace and the blowpipe control.



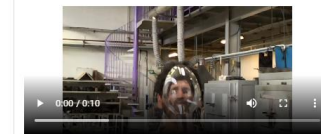
2. Leg and foot laying



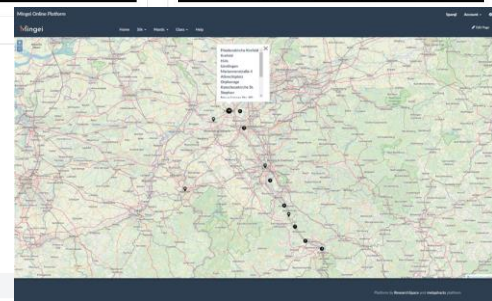
Leg_and_foot_laying_slowmotion3



Leg_and_foot_laying_slowmotion2



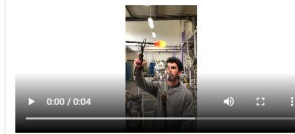
leg_laying_07



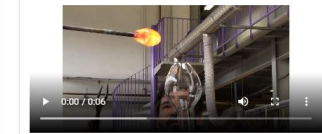
Substeps

Leg laying

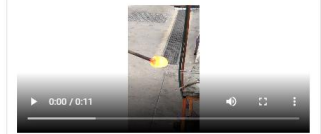
The glass master starts creating the carafe base. The assistant takes out of the furnace a new molten blob of glass and he is checking the exact position that should be placed. The glass master places the molten glass on the inflated glass and cuts it with metal shears. He pushes the molten glass on the inflated glass using the wide side of the jacks. He widens the glass with the wet paper. After that, he uses a metal pallet in order to flatten the base of the carafe.



01_leg_part_1.mp4

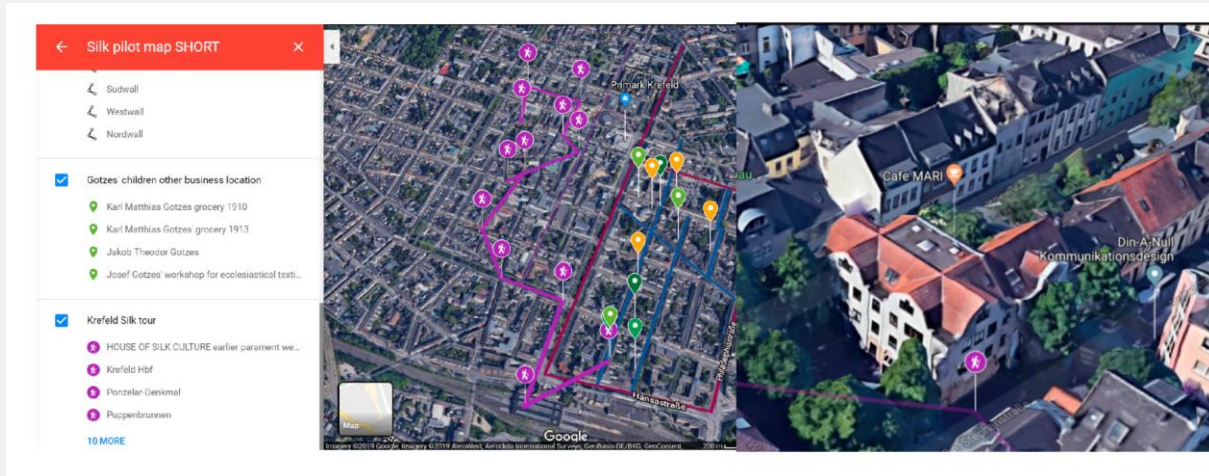


01_leg_part_1a.mp4



01_leg_part_1b.mp4

Narration



Dictionaries & Jargon

*What is it called?
What is it for?
How do I use it?*

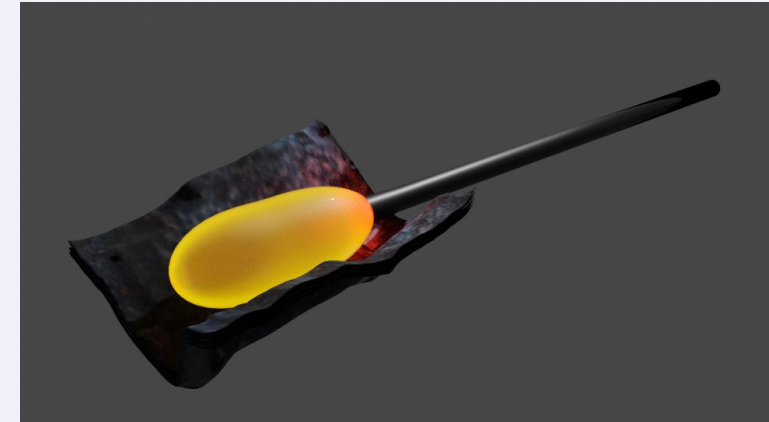
Clapper (noun)

*A **tool** consisting of two rectangular pieces of wood joined at one end by a leather hinge. There is an aperture in one of the pieces of wood, and this holds the stem of a goblet or wineglass while it is being made. The clapper is used to squeeze a blob of glass in order to form the foot.*



Finishing (verb)

*The **process** of completing the forming or decoration of an object. Finishing can take the form of manipulating the object into its final shape while it is hot, of cracking off before annealing, or of cutting, enameling, grinding, or polishing.*

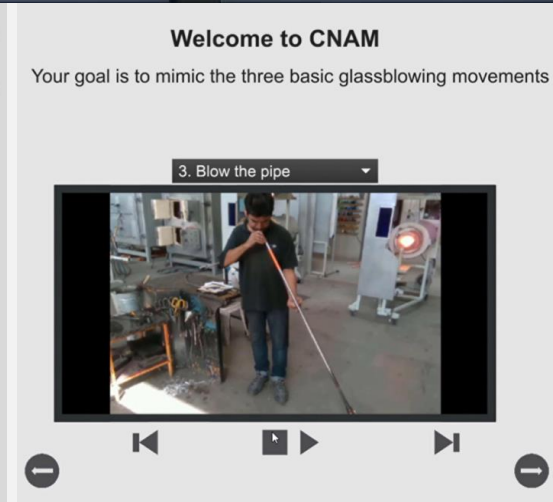
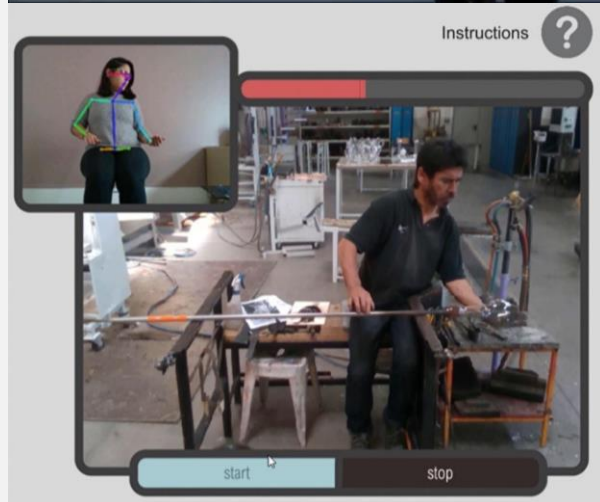


Virtual exhibitions

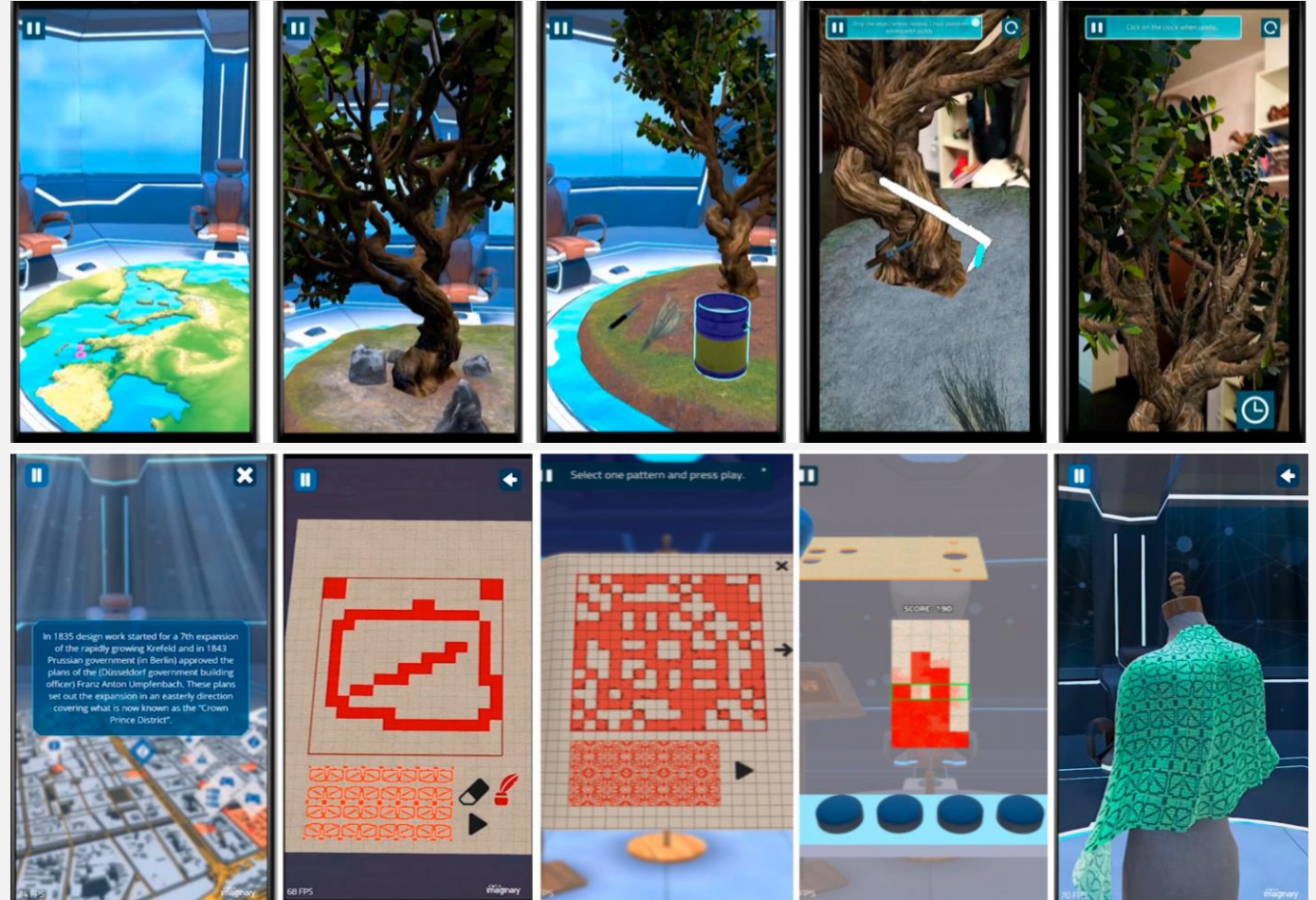


Past and in-storage collections

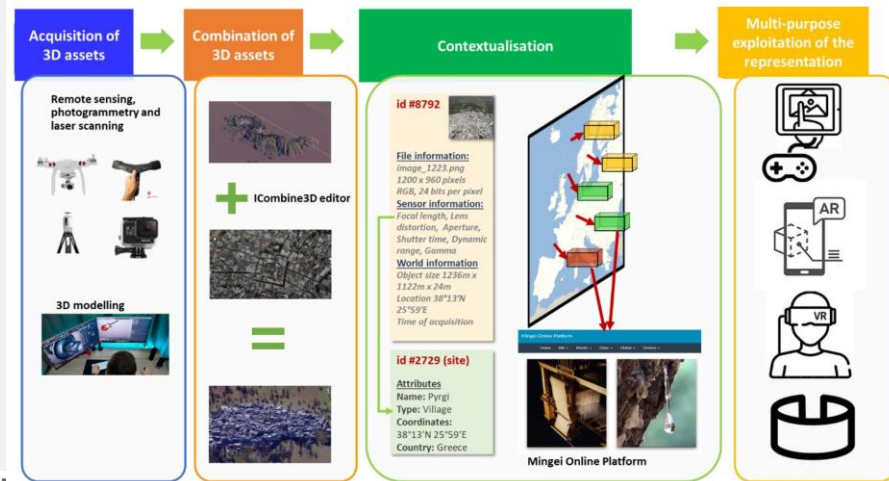
Education



Edutainment



Sense of place



[Multi-scale presentation of spatial context for Culture Heritage applications, \(2022\) Electronics](https://doi.org/10.3390/electronics11020195)

doi:10.3390/electronics11020195

Place gastronomy



Thank you



MITATA
Psiloritis UNESCO
Global Geopark, Greece

3D Reconstruction

