Co-funded by the Horizon 2020 Programme of the European Union

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Intelligent Interaction
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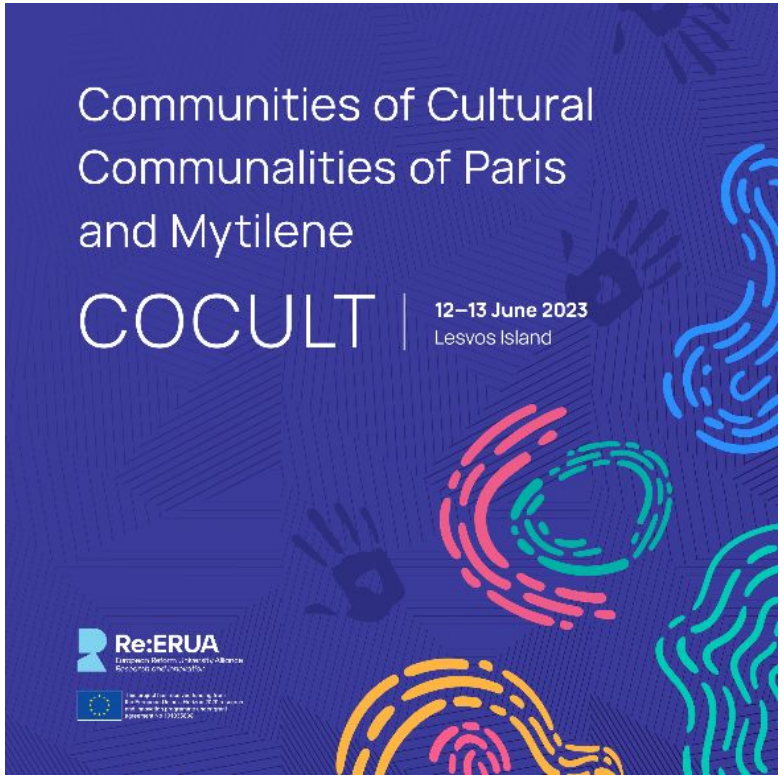
CoCult
Participatory Design

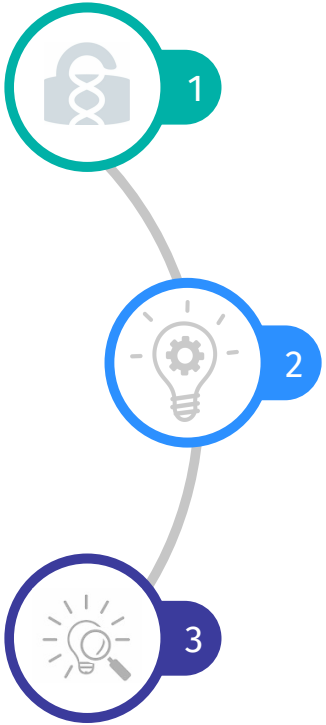
Towards a participatory data governance for community heritage documentation

Intelligent Interaction Research Group,
Dept. of Cultural Technology and Communication,
Faculty of Social Sciences, University of the Aegean



Public Participation in Scientific Research (PPSR)

Also for the Humanities, Arts, and Social Sciences (HASS) disciplines



EU Open Science ambition (2020)

"The general public should be able to make significant contributions and be recognised as valid European science knowledge producers."

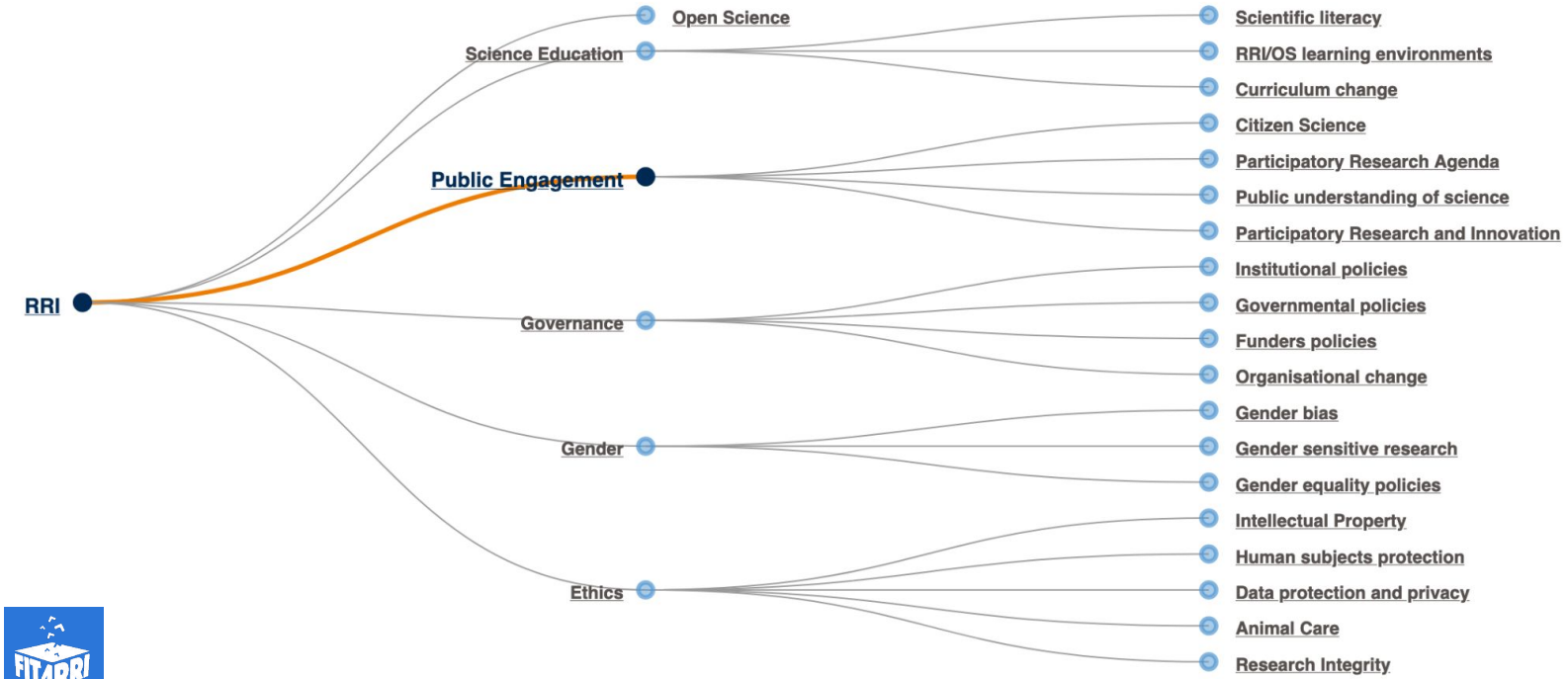
Open Innovation (EU 2016)

"Open innovation is about involving far more actors in the innovation process, from researchers, to entrepreneurs, to users, to governments and civil society."

Responsible Research and Innovation (RRI)

Representative Initiatives:
FIT4RRI, RRItools, NewHoRRIzon

Responsible Research and Innovation (RRI)



https://www.fosteropenscience.eu/taxonomy/term/245

Societal Engagement in Research: Critical needs

Ethics

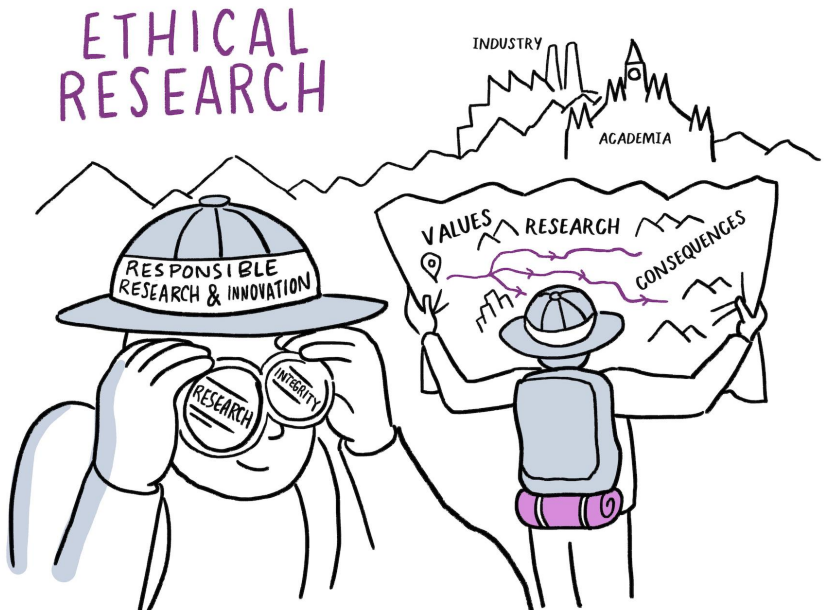
more inclusive representation of participants from the public

Data Sovereignty

Principles oriented for data and for people

Sustainability

People-centred approaches in sustainable development



Looking at different aspects of research ethics. The Turing Way project illustration by Scriberia. CC-BY 4.0 licence. DOI: 10.5281/zenodo.3332807.

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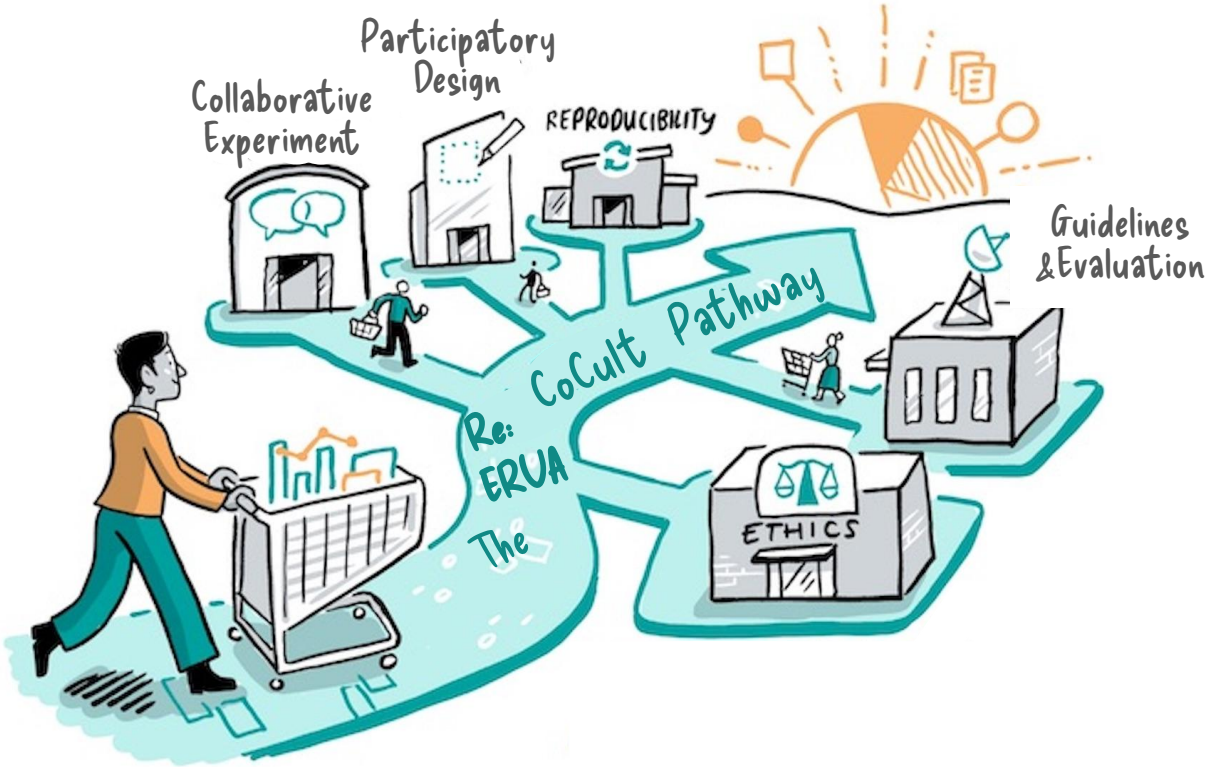
CoCult

Participatory Design Steps



"Re:Erua CoCult Pathway" by mziku licensed under CC-BY 4.0 is an adaptation of The Turing Way project illustration by Scriberia. CC-BY 4.0 licence. DOI: 10.5281/zenodo.3332807.

CoCult

Participatory Design Steps

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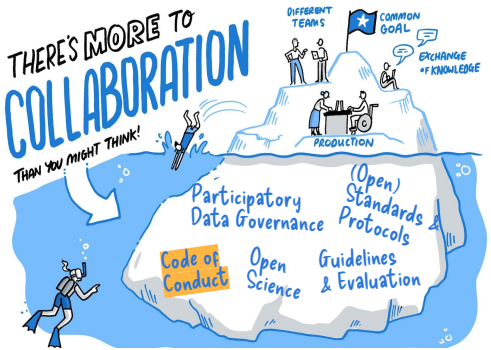
CoCult Participatory Design
Step 1: Code of Conduct



Adapt a Code of Conduct

→**(Reusable) Codes of Conduct**

- All European Academies (ALLEA), Code of Conduct for Research Integrity
- Association of Computing Machinery (ACM), Code of Ethics
- Europeana Network Association, Code of Conduct
- Wikimedia Foundation, Universal Code of Conduct
- Other open CoC resources

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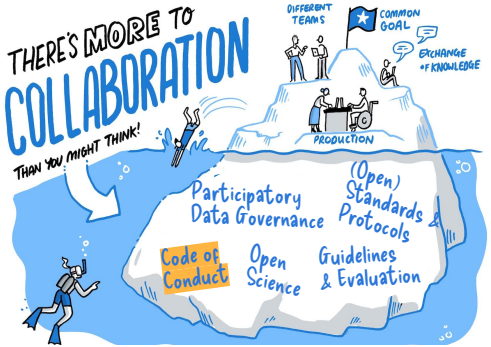
CoCult Participatory Design Step 1: Code of Conduct



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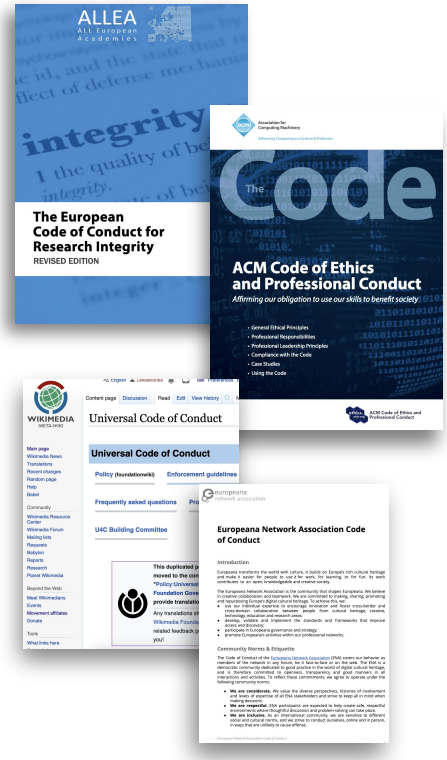

CoCult Code of Conduct

- Co-decide on passages with participating communities

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CoCult Participatory Design
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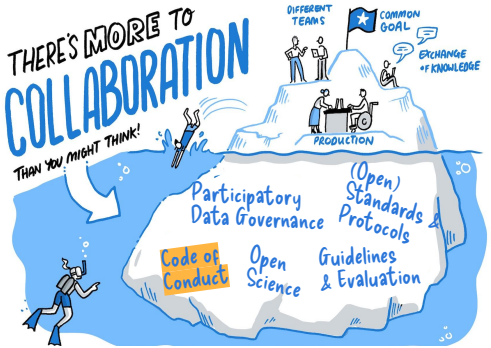


CoCult Code of Conduct

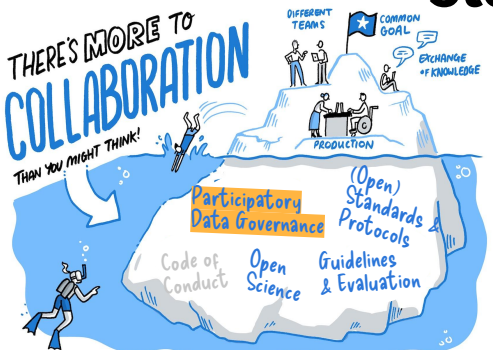
- Co-decide on passages with participating communities

- Draft document

- Integrating input by community members in the CoC

Mentimeter

CoCult Participatory Design
Step 2: Participatory Data Governance



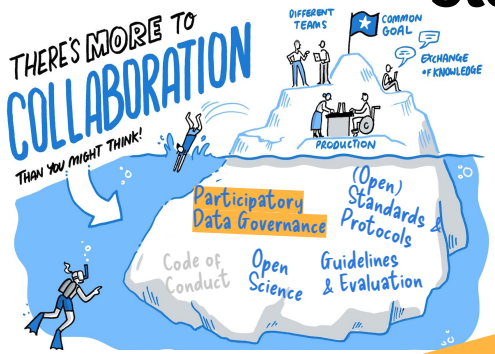
Adopt a Participatory Data Governance approach

→ **Framework for Participatory data stewardship (Ada Lovelace Institute, 2021)**

- Data stewardship legal mechanisms: "The responsible use, collection and management of data in a participatory and rights-preserving way."
- EU Data Strategy (2020): Mechanisms for data for the common good or 'data altruism' purposes
- Mapping the 8 Ostrom's principles for governing the commons to 23 design principles for governing data

https://www.adalovelaceinstitute.org/report/participatory-data-stewardship/

CoCult Participatory Design
Step 2: Participatory Data Governance



CoCult Participatory Data Governance

- Ada Framework adaptation for cultural data governance

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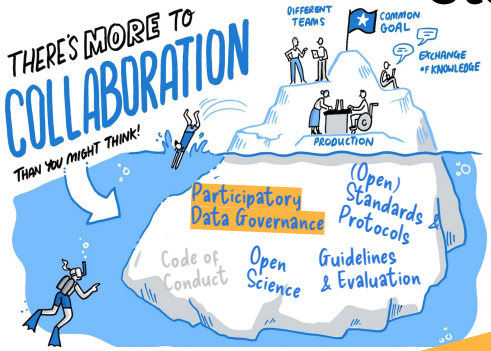
CoCult Participatory Design
Step 2: Participatory Data Governance

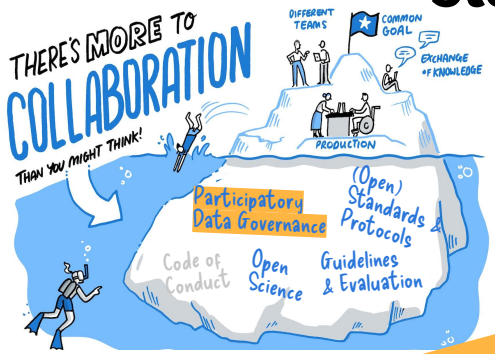


CoCult Participatory Data Governance

- Ada Framework adaptation for cultural data governance

	Ostrom's principles for governing the commons	CoCult Participatory Data Governance (adapted from the Ada Framework)				
1	**Clearly defined boundaries.** Individuals or households who have rights to withdraw resource units from the common-pool resource (CPR) must be clearly defined, as must the boundaries of the CPR itself.	**1.1 Stated purpose**: there must be a clear stated purpose for the collection and use of the data.	**1.2 Defined contributors:** stakeholders who contribute data or who the data is about.	**1.3 Defined beneficiaries:** stakeholders who use the data or benefit from its use.		
2	**Congruence between appropriation and provision rules and local conditions.** Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.	**2.1 Business model**: the legal business model for operation should be clear.	**2.2 Funding or revenue stream**: how the stewardship model is funded or supported.	**2.3 Data storage system**: what methods and tools are used to store data.	**2.4 Data access mechanism:** the method or way which data can be accessed or used.	
3	**Collective-choice arrangements.** Most individuals affected by the operational rules can participate in modifying the operational rules.	**3.1 Basis for processing**: the legal basis by which data is processed.	**3.2 Can data subjects withdraw data?**	**3.3 Stakeholder participation and involvement**: how stakeholders are given opportunities to influence decisions made about data and its governance.		
4	**Monitoring.** Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.	**4.1 Mechanism to ensure data quality:** how data accuracy, precision and detail are managed and kept up-to-date.	**4.2 Mechanism or body for stewardship oversight and decision-making**: how organisation, strategy and data access decisions are made and overseen.	**4.3 Is the number and identity of users transparent?** Information about the number of users of the system - both data subjects and processors.	**4.4 Are outputs from data access shared?** For example, reports, research, products, tools.	**4.5 Security of architecture**: how the data is protected from breaches, hacks and misuse.
5	**Graduated sanctions.** Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.	**5.1 Are rules for data access published?**	**5.2 Consequences for the misuse of data:** for example withdrawing of access permissions, fines and other penalties.			
6	**Conflict-resolution mechanisms.** Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.	**6.1 Mechanism for conflict resolution**: how are disagreements or conflicts resolved?	**6.2 External mechanisms to resolve conflict:** for example regulators who can enforce both mandating and limiting access to data.			
7	**Minimal recognition of rights to organize.** The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.	**7.1 Body responsible for instigating the data stewardship model**: what organisation or person initially established the model or initiative?	**7.2 Is the data sharing architecture supported or legitimated by an institution or public body?**			
8	**Nested enterprises (for CPRs that are parts of larger systems).** Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.	**8.1 Stated data strategy and institutional or regulatory framework**	**8.2 Standards for interoperability**: how can the data or other aspects of the model interact and link with others?			

CoCult Participatory Design
Step 2: Participatory Data Governance



CoCult Participatory Data Governance

- Ada Framework adaptation for cultural data governance

Ostrom's principles for governing the commons	CoCult Participatory Data Governance (adapted from the Ada Framework)	CoCult Participatory Data Governance (adapted from the Ada Framework)
1. Clearly defined boundaries	1.1 Stated purpose: there must be a clear stated purpose for the collection and use of the data.	Enrichment of open cultural resources with intangible heritage anecdotal/empirical data from underrepresented communities
	1.2 Defined contributors: stakeholders who contribute data or who the data is about.	Volunteering members of communities of cultural communalities in Mytilene
	1.3 Defined beneficiaries: stakeholders who use the data or benefit from its use.	Direct beneficiaries: Humanities researchers able to use the data for research Indirect beneficiaries: The communities and wider public accessing the data

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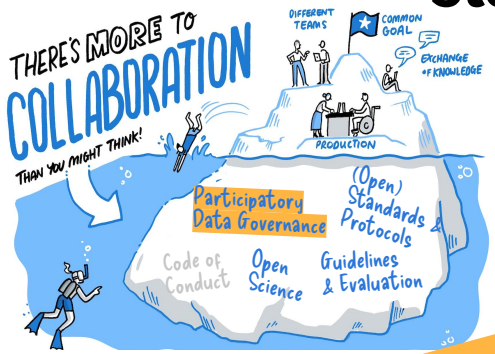
CoCult Participatory Design
Step 2: Participatory Data Governance



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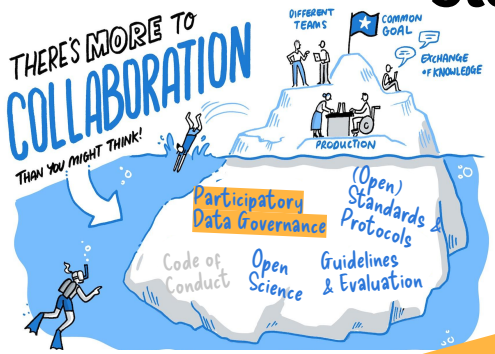
2. Congruence between appropriation and provision rules and local conditions.	2.2 Funding or revenue stream: how the stewardship model is funded or supported.	Funded by the H2020 EU Programme within the Re:ERUA project, no direct revenue for participating community members and partners (travel & subsistence costs)
	2.3 Data storage system: what methods and tools are used to store data.	Historypin user-generated archive platform and Zenodo open repository (OpenAIRE programme) for the dataset
	2.4 Data access mechanism: the method or way which data can be accessed or used.	Open-access to view/download the platform's and repository's data. Participants upload their own data on the archive, researchers upload the dataset on the repository

CoCult Participatory Design
Step 2: Participatory Data Governance



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3. **Collective- choice arrangements.** Most individuals affected by the operational rules can participate in modifying the operational rules.	3.1 Basis for processing: the legal basis by which data is processed.	Informed consent by data inputters
	3.2 Can data subjects withdraw data?	Yes
	3.3 Stakeholder participation and involvement: how stakeholders are given opportunities to influence decisions made about data and its governance.	Community members (as stakeholders) can co-design and co-decide parts about the data documentation, privacy and community representation.

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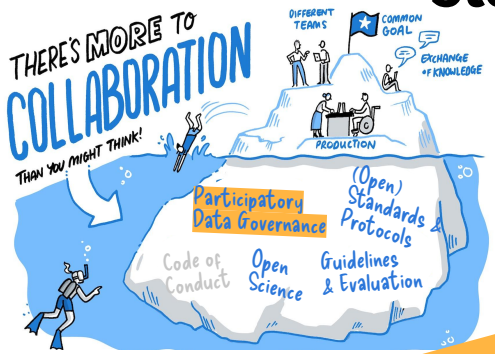

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4. **Monitoring.** Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.	4.1 Mechanism to ensure data quality: how data accuracy, precision-detail are managed.	Data is inserted by the volunteer members as individual testimonies, data fields are provided to ensure minimum interoperability standards for heritage content
	4.2 Is the number and identity of users transparent? Information about the number of users of the system - both data subjects and processors.	The number of uploading users can be seen in the dataset, the platform is open-access and processors are not documented
	4.3 Are outputs from data access shared? For example, reports, research, products, tools.	Open-access to view/download the platform's and repository's data. Participants upload their own data on the archive, researchers upload the dataset on the repository

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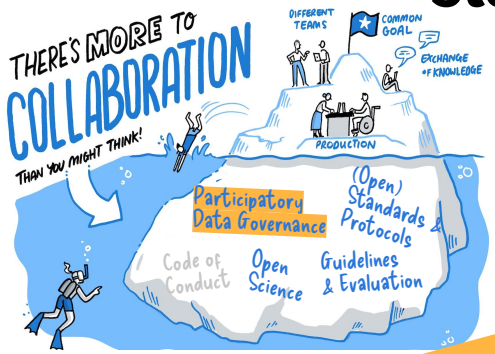

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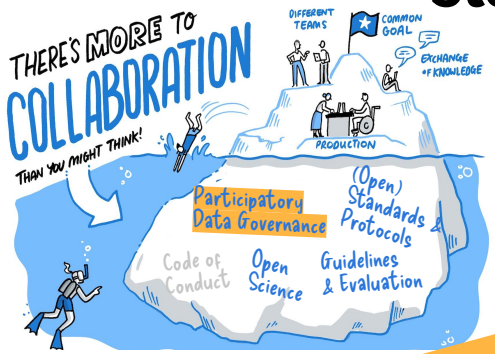
5. **Graduated sanctions.** Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.	5.1 Are rules for data access published?	Data access is provided "open-access", based on the openness assessment typology of "citizen enhanced open science" (Zourou & Ziku, 2022)
	5.2 Consequences for the misuse of data: for example withdrawing of access permissions, fines and other penalties.	Content is shared under open (Creative Commons) licences, consequently the licences are legally binding and misuse can lead to sanctions.

CoCult Participatory Design
Step 2: Participatory Data Governance



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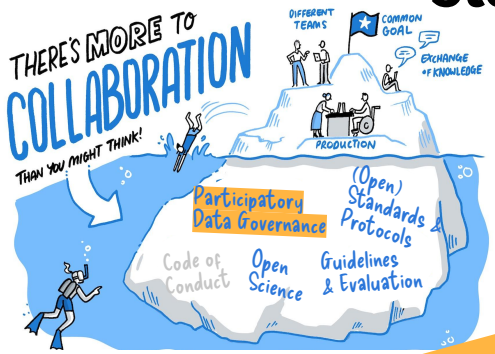
6. **Conflict-resolution mechanisms.** Appropriators and their officials have rapid access to low·cost local arenas to resolve conflicts among appropriators or between appropriators and officials.	6.1 Mechanism for conflict resolution: how are disagreements or conflicts resolved?	Email is provided on the platform and repository from the Re:ERUA team leader of the experiment
	6.2 External mechanisms to resolve conflict: for example regulators who can enforce both mandating and limiting access to data.	Can be informed by GDPR and the Creative Commons Copyright Copyright Platform for consultation

CoCult Participatory Design
Step 2: Participatory Data Governance



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7. **Minimal recognition of rights to organize.** The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.	7.1 Body responsible for instigating the data stewardship model: what organisation or person initially established the model or initiative?	Developed by the Ada Lovelace Institute and adapted by the Intelligent Interaction Research Group, University of the Aegean within the framework of the European Research University Alliance and the Re:ERUA Research and Innovation H2020 project, as part of the 2nd Open call – "Funding for two collaborative experiments", 2022-2023
	7.2 Is the platform or open repository containing the data supported or legitimated by an institution or public body?	Partly: the platform (Histoypin) no, the repository yes, it is legitimated by the OpenAIRE European network and operated by CERN

CoCult Participatory Design
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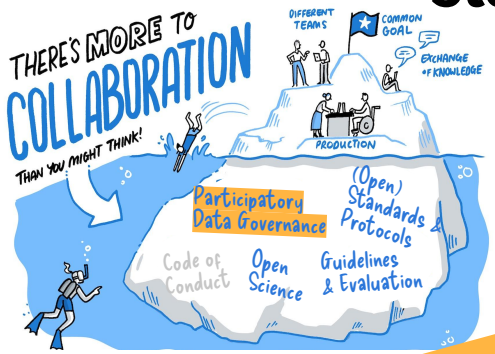

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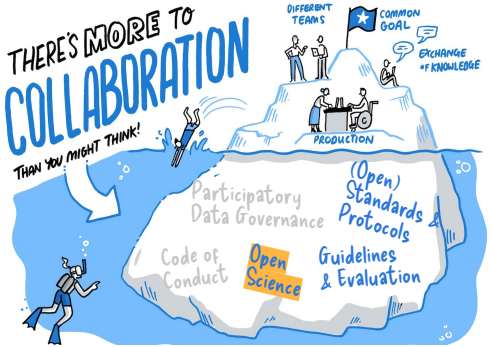
Ostrom's principles for governing the commons	CoCult Participatory Data Governance (adapted from the Ada Framework)	CoCult Participatory Data Governance (adapted from the Ada Framework)
8. **Nested enterprises** (for CPRs that are parts of larger systems). Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises. "	8.1 Stated data strategy and institutional or regulatory framework	Refers to the Participatory Data Stewardship Framework developed by the Ada Lovelace Institute (2021), no institutional framework provided
	8.2 Standards for interoperability: how can the data or other aspects of the metadata model interact and link with others?	The data follows the metadata requirements for interoperability as set by Europeana and mediated by the National Documentation Centre, Greece, including the Europeana Data Model and Dublin Core.

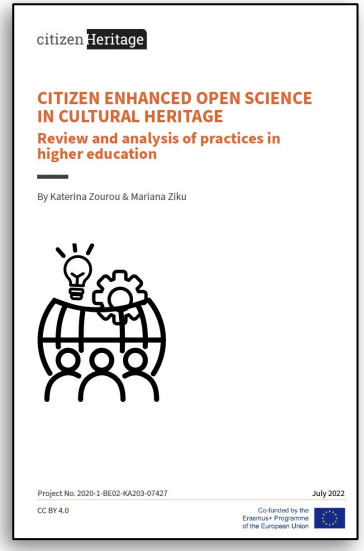
CoCult Participatory Design Step 3: Open Science



Apply an Open Science framework

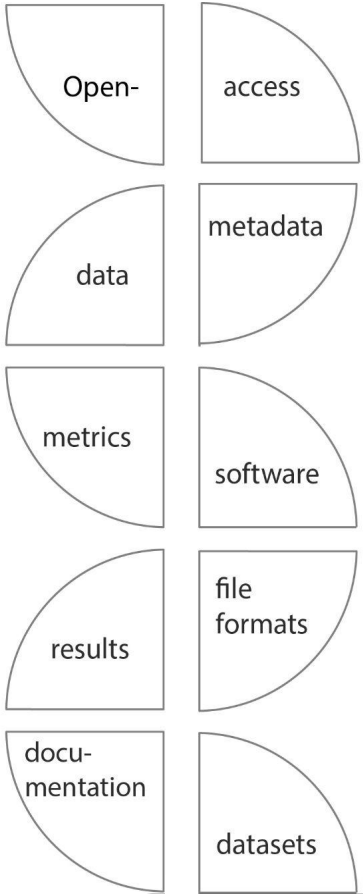
→ **Citizen Enhanced Open Science in Cultural Heritage: Review and analysis of practices in Higher Education (Zourou & Ziku, 2022)**

- Assessing the openness scope of participatory, heritage-related projects through a 9-factor typology



https://doi.org/10.5281/zenodo.6875125

9-factor typology, assessing the openness spectrum



Open data

Rights policy and open licenses under which eligible collections and digitised or digital cultural assets are being released

Open metrics

Indicates access to statistics for quantitative and qualitative data mainly concerning public engagement and outcome

Open access results

The openly published results in whole or in part, of the work created during the citizen science project

Open documentation

An openly shared systematic documentation of the project increases transparency, trust and thus, its scholarly value

Open-access

Policies and statements for content sharing and provision for sustainable open access

Open metadata

Information about data licensed and shared independently from the data they are attached to

Open source software/hardware

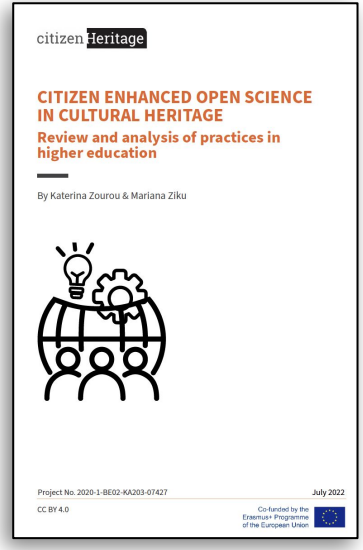
Technological components and their software licensing framework as free/libre/open for software

Open file formats

The provision for open, standardised and international file formats, suitable for long-term preservation

Open datasets

Datasets can be shared via data dumps, APIs for dataset download, web-based git and research repositories



https://doi.org/10.5281/zenodo.6875125

"Openness scope in citizen science" by mziku, nine-factor typology (infographic). In Zourou & Ziku, 2022. CC BY 4.0

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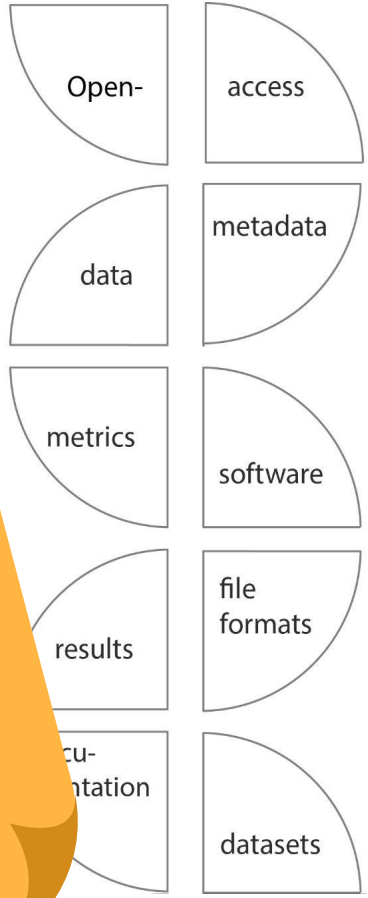

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CoCult Openness Spectrum

- Applying citizen-enhanced open science practices

Open-access

Policies and statements for content sharing and provision for sustainable open access

Open metadata

Information about data licensed and shared independently from the data they are attached to

Open source software/hardware

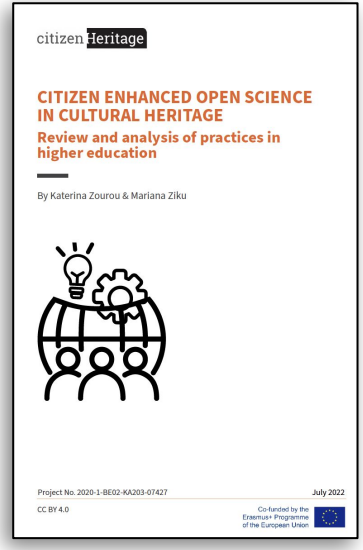
Technological components and their software licensing framework as free/libre/open for software

Open file formats

The provision for open, standardised and international file formats, suitable for long-term preservation

Open datasets

Datasets can be shared via data dumps, APIs for dataset download, web-based git and research repositories



https://doi.org/10.5281/zenodo.6875125

"Openness scop ziku, nine-factor typology (infographic). In 2022. CC BY 4.0

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Intelligent Interaction www.ii.aegean.gr

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Zenodo provides automated download and views metrics

The results will be published in a report and made accessible from the ERUA project site

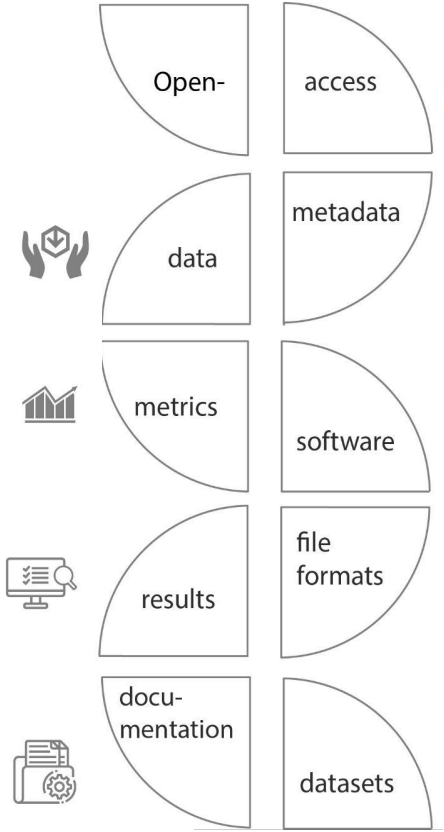
The methodology presentation will be shared as Open Educational Resources in Zenodo

Open data
Rights policy and open licenses under which eligible collections and digitised or digital cultural assets are being released

Open metrics
Indicates access to statistics for quantitative and qualitative data mainly concerning public engagement and outcome

Open access results
The openly published results in whole or in part, of the work created during the citizen science project

Open documentation
An openly shared systematic documentation of the project increases transparency, trust and thus, its scholarly value



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Open-access platform Historypin and open repository Zenodo

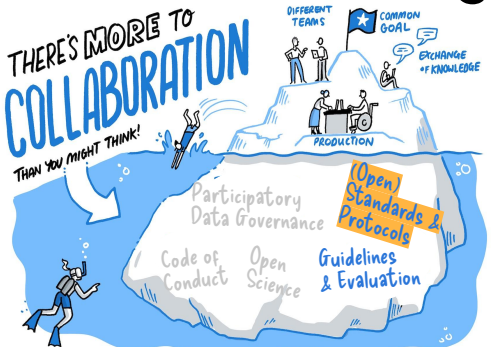
Open metadata licenced under CC0 (for eligibility with Europeana)

Historypin redesign for Open-Source Digital Humanities (grant - report 2019)

File formats include CSV for the datasets and JPG for images

Metadata shared as open datasets with DOI through the open repository Zenodo

CoCult Participatory Design
Step 4: Open Standards & Protocols

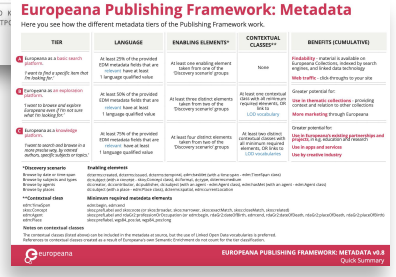


Follow (Meta)data specifications and Interoperability Protocols

→ **Interoperability specifications for metadata of digital cultural resources (2020), National Documentation Centre, Greece**

https://www.ekt.gr/el/publications/25039

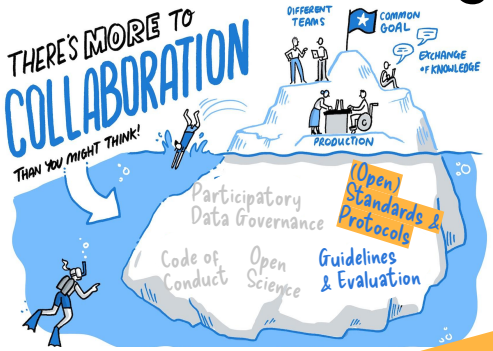
→ **Europeana Publishing Framework**



https://pro.europeana.eu/Europeana_publishing_framework_metadata_v-0-8.pdf

- Minimum requirements for metadata provision in order to achieve FAIR data (Findable, Accessible, Interoperable, Reusable)
- Metadata standards: EDM, ESE, Dublin Core

CoCult Participatory Design
Step 4: Open Standards & Protocols



CoCult Metadata Standards

- Guided workshop in Historypin for volunteer metadata documentation

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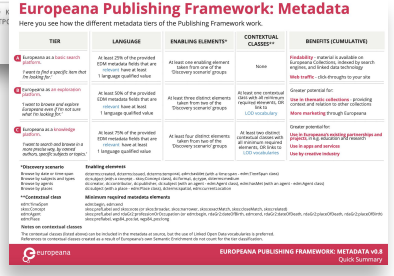

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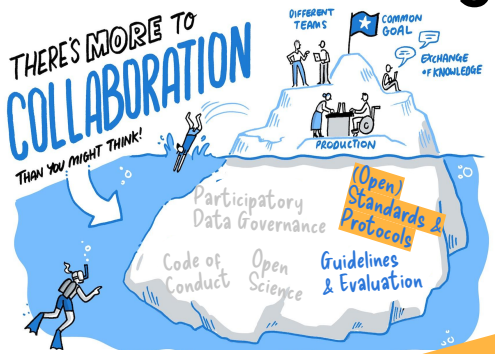
CoCult Participatory Design
Step 4: Open Standards & Protocols

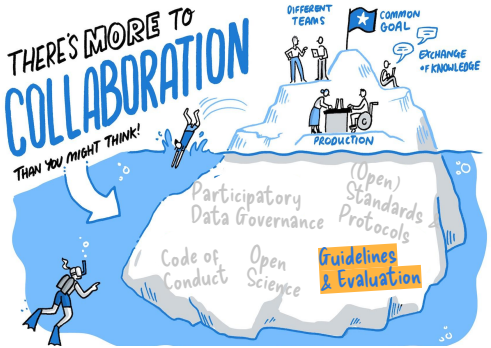


CoCult Metadata Standards

- Guided workshop in Historypin for volunteer metadata documentation

- **1. Title** (add your own title) **(dc: title)**
- **2. (Open) Licence** (from Wikimedia) **(dc:rights)**
- 3. Date (from Wikimedia) (dc:date)
- 4. Geotag (add your own tag) (dcterms:spatial)
- **5. Creator** (from Wikimedia) **(dc:creator or dc:contributor)**
- 6. Link (from Wikimedia -URL) (dc:identifier)
- 7. Description (from volunteer community member) (dc:description)
- **8. Subject** (added by default -ICH) **(dc:subject)**
- **9. Type** (added by default -image) **(dc:type)**

CoCult Participatory Design
Step 5: Guidelines & Evaluation



Use Guidelines and Reflection Tools

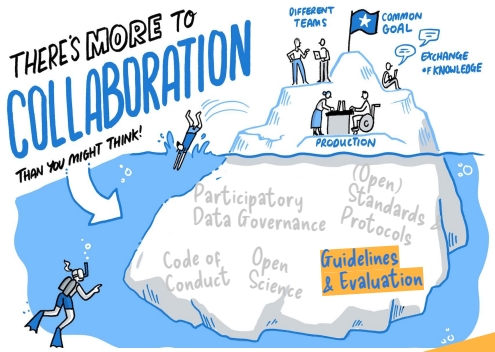
→ **Research collaboration for societal engagement and social innovation: Guidelines and reflections for strengthening societal engagement and social innovation (Dupret et al., TBP)**

- Collaborative Dilemmas
- Relations - Emotion work
- Ethics of Care

...

Re:ERUA Guidelines TBP

CoCult Participatory Design
Step 5: Guidelines & Evaluation



Re:ERUA Guidelines

- (To be published) To be considered and included in the open documentation of CoCult

Use Guidelines and Reflection Tools

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- Collaborative Dilemmas
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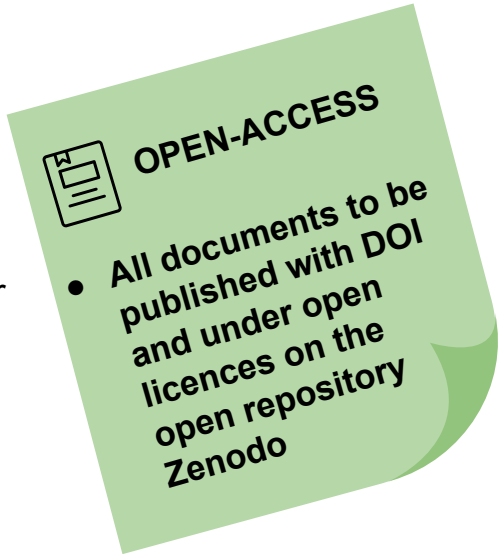
- Ethics of Care

...

Re:ERUA Guidelines TBP

Deliverables

1. Document with the **Participatory Data Governance** mapping
2. Collaborative **open-access archive** on Historypin with reused open cultural content and enriched data for intangible cultural heritage including new testimonies
3. Creation of a **CSV file with data and metadata** published on Historypin mapped in metadata standards (EDM, DC), and with input by participants
4. Modelling of the CSV file as a **machine-readable dataset** (based on open science best practices)
5. Document with implementation roadmap of **citizen-enhanced open science** practices (incl. the open documentation of the Guidelines for societal engagement)
6. Document with a **Code of Conduct,** including input by participants
7. Methodology and workshop presentation, shared as **Open Educational Resources** (OER)



Co-funded by the Horizon 2020 Programme of the European Union

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Thank you!

Questions?

https://erua-eui.eu/2023/06/09/communities-of-cultural-commonalities-of-paris-and-mytilene

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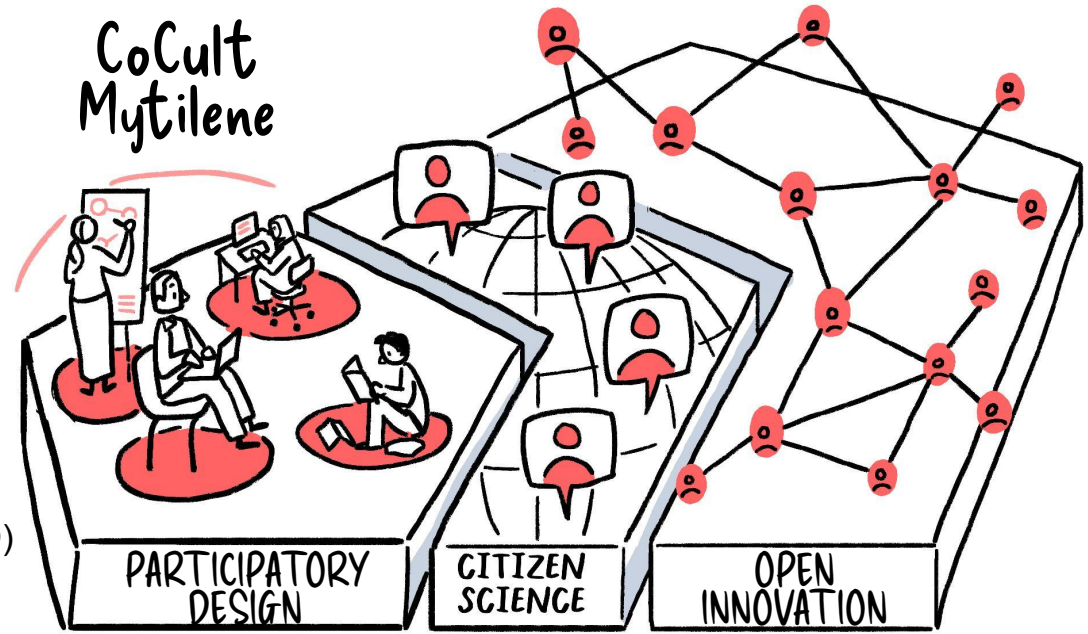
Intelligent Interaction
Research Group



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