Digital Cultural Heritage Preservation

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Background and context

❑ The vision for the next two decades is to implement a federated infrastructure to support the application of open science in the arts and the humanities

❑ The **Digital Cultural Heritage** (DCH) sector is producing a large volume of digital content that needs to be safely stored and curated, permanently accessed and easily re-used by researchers in the humanities

❑ The use of existing **e-infrastructure** for research and academia (including NREN, NGI and the newer data infrastructures) would be an efficient channel for the delivery of advanced services to the DCH

❑ **Cooperation** and **coordination** is necessary both at European and international levels and among DCH and e-infrastructure organisations

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DCH and the e-Infrastructures

❑ use of e-Infrastructures can contribute to faster realise **data infrastructures** that can be accesses at international scale and this is valuable for DCH too

❑ use of e-Infrastructures will contribute to **standardisation** in the data world; for DCH not only "row" scientific data are relevant, but even more information processing, images, AV recording, e-books, etc.

❑ e-Infrastructures can support experiments of new technologies and provide in this way **new services** to the embedded data infrastructures (e.g. advanced visualisation of DCH)

❑ e-Infrastructures allow for **cost reduction** by avoiding parallel activities in investing for higher volume/throughput and substituting expensive human workforce by cheap machine processes (e.g. cataloguing, linking data)

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Digital Preservation

- Implementation of a preservation infrastructure is the **first priority** for the DCH sector

- Preservation is defined in this context as the combination of preservation of **digitised** and **born-digital content** (databases, catalogues, files, etc.) as well as preservation of **information** associated with that content, the so-called '*infostructure*', referred also as **metadata**

- Each digitisation programme is currently addressing the issue of preservation in a separate manner, while a **shared implementation** of common e-Infrastructure layers could be beneficial and cost effective to all

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DCH-RP Project

❑ **FP7 Coordination Action**

  – 13 partners from 7 European Countries, including cultural institutions, e-Infrastructure providers and a wide network of international organisations willing to contribute to the project

❑ **24 months** of duration

❑ **Total effort**: 118 person-months

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Consortium

DCH and National Authorities

ICCU (IT)
BELSPO (BE)
RIKSARKIVET (SE)
EVK (EE)
CT (UK)

E-INFRASTRUCTURES

INFN (IT)
PSNC (PL)
NIIFI (HU)

INTERNATIONAL ORGANISATIONS

TERENA (NL)
EGI.eu (NL)
MCA (BE)

PRIVATE SECTOR

PROMOTER (IT)
EDItEUR (UK)
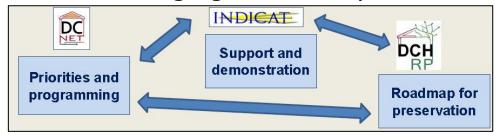
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Key features

□ Built upon the knowledge generated by **DC-NET** and **INDICATE**

□ Focus on preservation of **digital representation** of cultural objects (not preservation of physical cultural objects)

□ Focus on the **storage phase**, which includes both 'long-term preservation' (including dark archives) and 'short-term preservation' (storage for a relatively short period of access)

□ Focus on the use of **existing research e-infrastructure** as an efficient channel for the delivery of advanced services to the digital cultural heritage

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Objectives

❑ To harmonise data storage and preservation **policies** in the DCH sector at European and international level

❑ To progress with the **dialogue** and factual cooperation among DCH institutions, e-Infrastructures, research and private organisations

❑ To further develop the **network of common interest** established in DC-NET and INDICATE, contributing to the ongoing process for setting up the DCH research community (VRC/VRO/VRE)

❑ To identify the most suitable models for the **governance, maintenance and sustainability** of an integrated infrastructure for digital preservation of cultural content

❑ To coordinate with other initiatives in Europe (SCIDIP-ES, EUDAT, APARSEN, DARIAH, CHAIN-REDS) and world wide

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Expected outcomes

- ❑ The main outcome will be a **Roadmap** for the implementation of a preservation infrastructure for DCH
  - – supplemented by **practical tools** for decision makers, including:
    - ▪ best practice to promote future **interoperability** and the adoption of common **standards**, tools, approaches and business models
    - ▪ the design of a new **trust model** suitable for the case of e-infrastructures
    - ▪ recommendations for user **authentication** and **access control** system(s) and for engaging with **commercial** partners
  - – validated through a range of proofs of concepts, where cultural institutions and e-Infrastructure providers will work together on concrete experiments

- ❑ DCH-RP Roadmap is intended as the first instance of the Open Science Infrastructure for DCH in 2020

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Target audience

- ❑ **Content providers**, who need the infrastructure to preserve their content and a solid Roadmap as a reference for taking decisions (e.g. cultural managers of national institutions and libraries, small institutions, private and public publishers, etc.).

- ❑ **Policy makers** and **programme owners** at different levels (national, regional and local), who invest in the construction of research infrastructures and need guidance before deciding on future actions.

- ❑ **Final users**, who need the infrastructure to get safe access to data for their research (e.g. researchers, practitioners, students and amateurs)

- ❑ The **e-infrastructure providers** and the R&D institutions active on digital preservation

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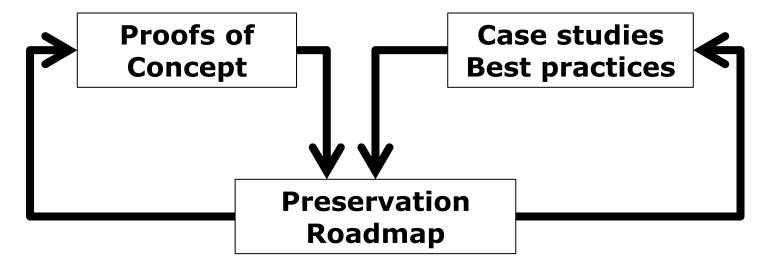# Preservation Roadmap

- ❑ Designing a preservation Roadmap for DCH implies:
    - to develop a **registry of services and tools**
    - to investigate how **Infrastructure as a Service** can contribute to digital preservation services for DCH
    - to explore the state of art in cultural heritage and e-Infrastructure
    - to consider how **standards and interoperability** principles can be adopted by the cultural heritage and e-Infrastructure communities

- ❑ DCH-RP Roadmap aims to remain **valid for several years** starting around 2015 until 2020
    - as much as possible **independent** of concrete current e-infrastructure realisations and DCH contents

- ❑ Validated through **real, tangible, proofs of concepts** at a reasonable scale, both in terms of number and size
    - allow the DCH community to provide requirements and feedbacks and contribute to steer the development of the Roadmap

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A virtual cycle

□ Through the **Proofs of Concepts** cultural institutions and e-Infrastructure providers experiment the actual use of distributed computing and storage infrastructures (NREN, grids, clouds, newer data infrastructures) to store and manage cultural digital resources, starting from the targeted specific services identified in the Roadmap for preservation and from real scenarios and user stories provided by the cultural institutions

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Proofs of concept

- **Italy** with e-Infrastructure facilities provided by INFN and data provided by ICCU

- **Poland** with e-Infrastructure facilities and data provided by PSNC

- **Hungary** with e-Infrastructure facilities provided by NIIFI and data provided by Hungarian Cultural Institutions that will cooperate with NIIFI

- **Sweden**, **Belgium** and **Estonia**, with e-Infrastructure facilities provided by the respective National Grid Initiatives exploiting the Memorandum of Understanding signed in the frame of DC-NET and data provided by DCH-RP partners

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Web presence

❑ DCH-RP aims todisseminate the results of the project to the wider cultural heritage and e-Infrastructure communities beyond the consortium, and to other regions outside the EU, in order to enable them to benefit from the research of the consortium and from the work of the project

❑ DCH-RP has chosen a range of instruments to achieve a strong **web presence**, both for the cooperation among the partners and for the project's communication:

❑ eCulture Science Gateway: **ecsg.dch-rp.eu**

❑ Cooperation space at: **documents.egi.eu**

❑ Project website: **www.dch-rp.eu**

❑ Showcase at: **www.digitalmeetsculture.net**

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eCulture Science Gateway

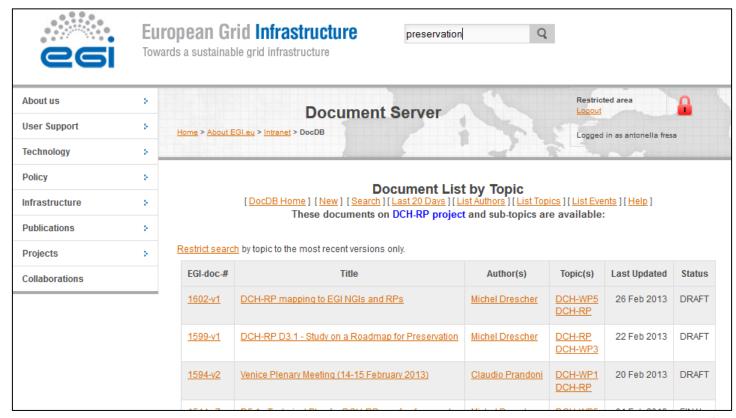❑ The ECSG will support the execution of the experiments carried out in the DCH-RP Proofs of Concept

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Cooperation space

❑ The Cooperation space of DCH-RP is based on the cooperation services offered by EGI

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Project web site

❑ The project website aims to present the project partners, objectives, activities and main results

❑ Target users: DCH experts from museums, archives, libraries and other cultural institutions, scientists, national authorities, content-contributing community, government and policy bodies, private (publishing) sector

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DCH-RP Show-case on digitalmeetsculture.net

- ❑ **www.digitalmeetsculture.net** is an interactive online platform for cooperation and information in the field of digital technologies applied to cultural heritage and the arts

- ❑ The show-case of DCH-RP provides general information about the project, link to the project website and to each partner's website, contacts, auto-refreshing news via RSS, **articles on the project and on related topics**

Conclusions

❑ DCH-RP is one step, belonging to a longer process.

❑ In the last decades, cultural institutions started to move their cultural content on the digital world. This has implied to know new instruments, new rules of access, new standards to exhibit digital heritage, new ways of communication.

❑ The amount of digital cultural content is now so valuable that the issue of preserving the digital cultural heritage is becoming as much urgent as the preservation of tangible heritage.

❑ The national policies about cultural preservation (digital and tangible) needs to re-use best practices, to share solutions, to avoid duplication of efforts.

❑ The use of the e-infrastructures is a pillar in this direction and the cultural heritage sector should progress towards its full integration in the new concept of open science.

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Thank you!

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