



**INDICATE**  
International Network  
for Digital Cultural  
Heritage e-Infrastructure



# **The INDICATE project**

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INDICATE Technical Conference

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# Table of content

- The Digital Cultural Heritage sector: characteristics and needs
- The vision towards a DCH data infrastructure
- Two inter-related projects: DC-NET and INDICATE
- Positioning of the DCH sector
- Towards an Open Science Infrastructure of the digital cultural heritage in 2020. First action: preservation



# Initiatives of the European Member States in the last 10 year

A wide range of activities:

- Building a shared platform of recommendations and guidelines
- Agreement on common data models
- Experimenting and launching innovative online services
- E-infrastructures for the citizens (Europeana)
- E-infrastructures for the research (NREN, NGI)
- International cooperation: in Europe and abroad
- Digitisation within national and regional programmes



**INDICAT**  
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*for the citizens*

**EUROPEANA**



**minerva**  
eEurope

Digitising Content Together



**Michael**  
Multilingual  
Inventory  
of Cultural  
Heritage  
in Europe



**INDICAT**

*for the  
researchers*

**DIGITAL CULTURAL  
HERITAGE  
e-INFRASTRUCTURE**

**RECOMMENDATIONS  
& GUIDELINES**

**DATA MODEL &  
SERVICES**

**E-INFRASTRUCTURES**

**NATIONAL & REGIONAL INITIATIVES**

2002

2005

2009

2012

2014



# Digital cultural content characteristics

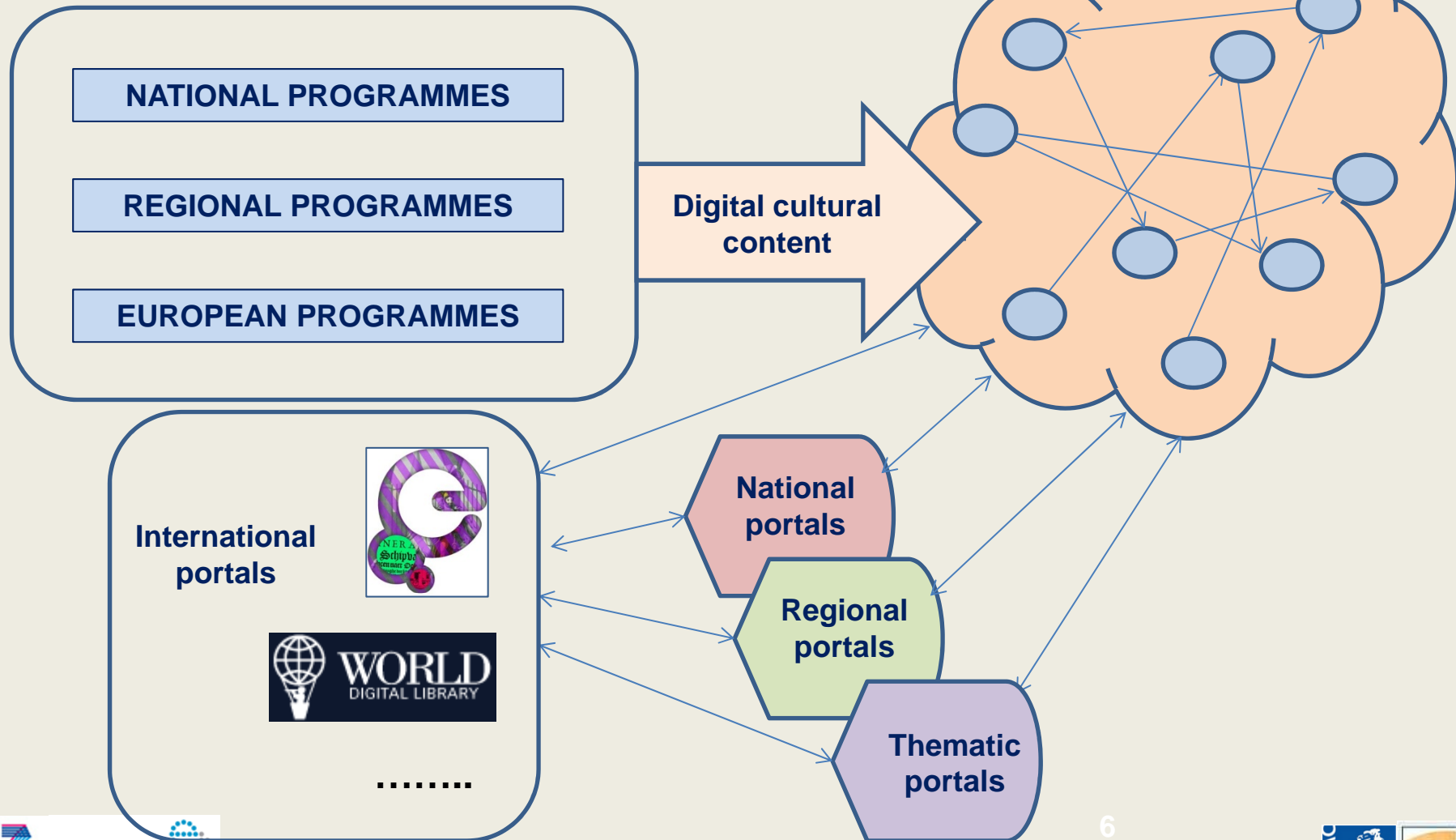
The **amount of digitised material** is growing very rapidly

- **National, regional and European programmes** support the digitisation of the content of Museums, Libraries, Archives, Archaeological sites and Audiovisual repositories
- The generation of digital cultural heritage is accelerated also by the impulse of **Europeana** that is fostering the European cultural institutions to produce even more digital content
- Digital cultural heritage content are **complex and interlinked** through many relations



## THE VISION

### Data Continuum







# The needs of the DCH sector

1. high quality **information technology** management, to ensure trust, availability, reliability, long term safety of content, security, preservation and sustainability;
2. **access facilities** to the final users (*the researchers*) who will search into the DCH e-Infrastructure for their research and to the cultural institutions that will deliver their data to the DCH e-Infrastructure;
3. **interoperation** among existing cultural heritage repositories and of cultural heritage data with research data.

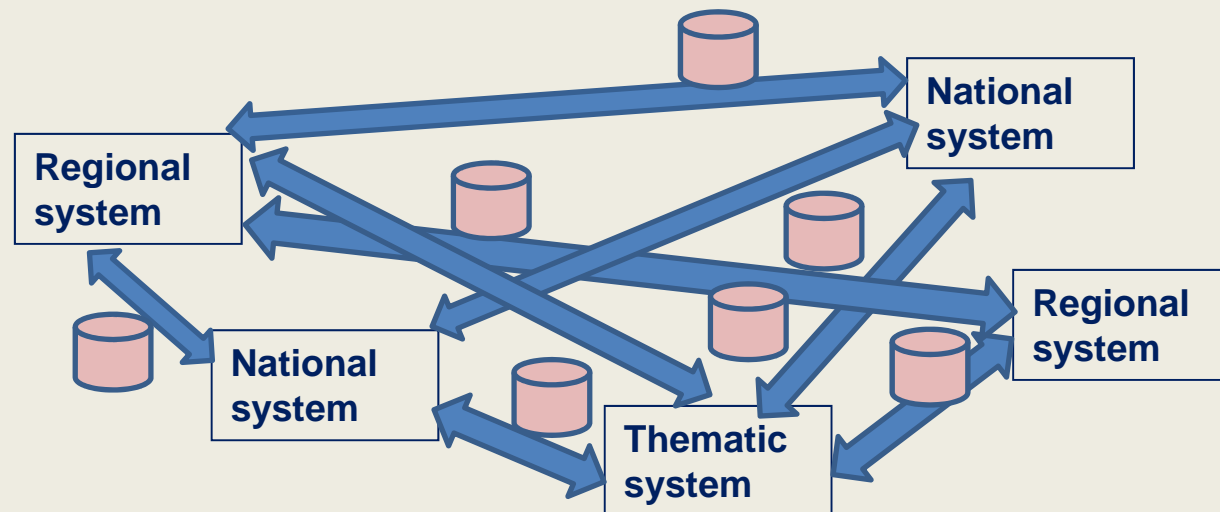


# The e-infrastructure for DCH

It is not a “new infrastructure”, but it is instead a “**new approach**”

- based on **national and regional systems**
- Valorising **existing resources**

The keyword is **INTEROPERABILITY**







# Expected impacts

- **e-Infrastructures**

The adoption of the e-Infrastructures by the digital cultural heritage community will open new scenarios of use and exploitation

- **Cultural Heritage**

Cultural managers will become more aware about the potential that the e-infrastructures can offer to their work: storage, preservation, access services for the cultural institutions, etc.

- **Research**

A better integration of the cultural sector with the e-Infrastructures will enable the research of new advanced services and applications

- **Other sectors**

Digital cultural content will become more usable and re-usable for education, cultural tourism, long-life learning, non-professional cultural interests, creative industry, etc.



# DCH V/S e-Infrastructures

- To focus is on the use of existing e-infrastructures as a channel for **delivery, access and preservation** of digital cultural heritage data
- Storage, computing, connectivity together with authentication , authorisation and accounting mechanisms offered by the e-infrastructures can well serve the needs of the sector
- The issue here is to establish factual cooperation among two sectors (the research and the cultural heritage) that are not used to work together



# Key players

- **Key players from the DCH:**
  - Ministries of Culture
  - Cultural institutions
- Cross-domain: museums, libraries and archives together
- **Key player from the research:**
  - Ministries of Research
  - Researchers in the Humanities
  - Researchers in ICT applied to CH
- **e-Infrastructure providers**



# Preparatory actions

- To define **priorities** among the services to be deployed
- To consult and to advocated with **stakeholders**
- To engage with **programme owners**
- To improve **awareness**: standards, who-is-who, ...
- To promote **trust building**, covering different aspects and including organisational, operational and legal issues
- To run **experiments**: pilots and use case studies
- To open **international cooperation**
- To establish an **e-culture community**



# Two integrated projects

1. **DC-NET**: joint activities plan for DCH e-infrastructure implementation
2. **INDICATE**: international cooperation, use case studies, pilots, policy harmonisation



Priorities and  
progamming



Support and  
demonstration



# DC-NET ERA-NET

## A Network for the European Research Area:

- Composed by Programme Owners and Programme Managers in the cultural sector
- To agree common perspectives & priorities across EU Member States
- To establish an operative dialogue between cultural heritage and e-Infrastructures communities in Europe,
- To identify constraints and capabilities in order to establish a plan of joint activities

Started in December 2009, it will last until March 2012

A project funded by EC FP7 e-Infrastructures





# INDICATE Coordination Action

**A concrete approach within an international dimension**

- Stimulating the **international cooperation** of eInfrastructures providers and cultural heritage users
- Target areas:
  - Mediterranean region, (Egypt, Turkey and Jordan)
  - Cooperation with China in liaison with the EPIKH Grid School
  - exchanges with South America in the frame of experiments for live distributed performances
- Case studies: preservation, virtual exhibitions, GIS

Started in September 2010, it will last until September 2012

A project funded by EC FP7 e-Infrastructures



# The consortium of INDICAT

## 10 partners from 8 countries:

### Egypt

- Center for documentation of cultural and natural heritage (CULTNAT)



### France

- Ministère de la culture et de la communication (MCC)



### Greece

- National Technical University of Athens (NTUA)



### Italy

- ICCU



- Consortium GARR



- COMETA



### Jordan

- Department of Antiquities



### Slovenia

- Avtorska Agencija za Slovenijo Doo



### Spain

- Fundacio privada I2CAT, internet i innovacio digital a Catalunya



### Turkey

- Türkiye Cumhuriyeti Kültür ve Turizm Bakanlığı





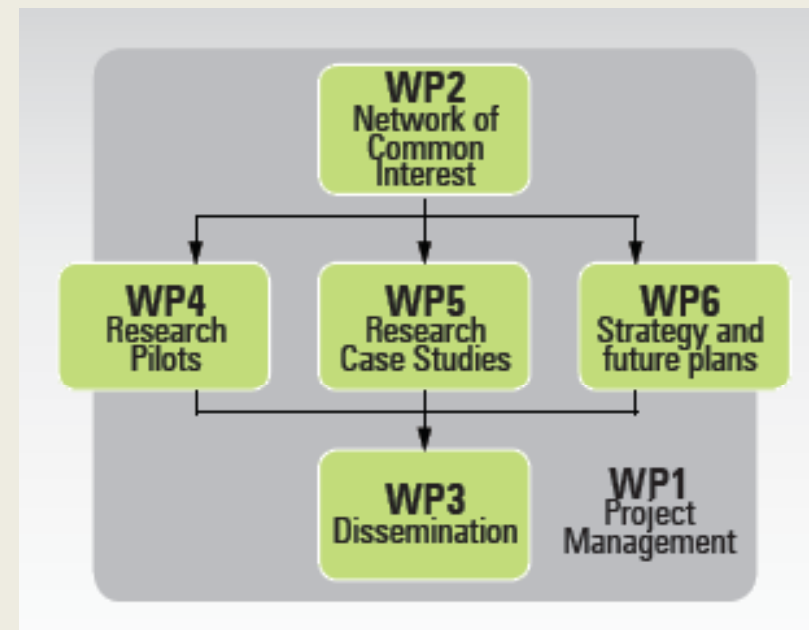
## Key actions

1. **Coordination of policy** regarding the use of e-Infrastructures for digital cultural heritage in countries all around the Mediterranean
2. **Pilots and case studies** as demonstrators of the processes relevant to establishing cultural initiatives on the e-Infrastructure platforms
3. **Dissemination** and contribution to the establishment of the DCH Community



# The workplan

- **Management (Wp1)**
- Developing a **network of common interest (WP2)**
- Research **pilots and case studies (WP4 & 5)**
- **Strategies and future plan (WP6)**
- **Dissemination (WP3)**





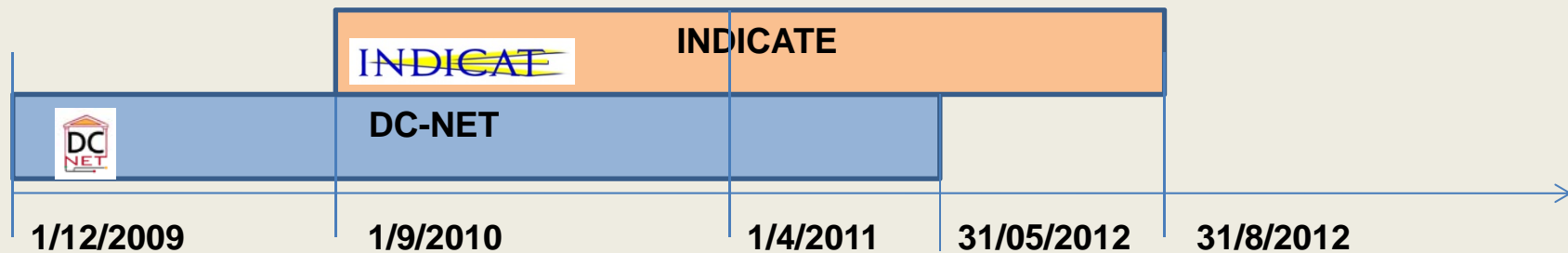
# Pilots and case studies

## Pilots

- Semantic Search pilot
- e-Collaborative Digital Archives

## Case studies

- Long Term Preservation (Ankara workshop)
- Virtual exhibitions (Amman workshop)
- Geo-coded Digital Cultural Content (Ljubljana workshop)



- The two projects have many **partners** in common.
- The e-infrastructure programmes identified in DC-NET will be at the basis of the **sustainability** of the results of INDICATE.
- The two projects target the same **DCH community**.





# Research workflow and Service priorities

Study the typical workflow of the DCH research



Derive priorities for the Digital Cultural Heritage sector

FROM

**common issues**

TO

**common priorities**



# Typical DCH research workflow

- **Find:** accessing information
- **Process:** tools for manipulating information
- **Publish:** make the results visible online
- **Conference:** discuss and annotate published information
- **Preserve:** maintaining access to content over the longer term
- **Secure**

Plus lower-level “basic digital services” such as email, data storage, web hosting, etc.



## Services priorities

On the basis of the typical workflow of the DCH research, services are divided into 3 categories:

1. Services for content providers, i.e. those related to the **creation of online data resources** for DCH
2. Services for **managing and adding value** to the content itself
3. Services which enable, support and enhance virtual research communities and the activities of content consumers



# Services for content providers and data resource creation

## Common issues:

- Interoperability of online resources
- Insularity in terms of searching
- Changes in location
- High cost of establishment
- Vulnerability to technical problems
- Limitation on servers capacity and processing



# Services for managing and adding value to content

## Examples of common issues:

- Geo-referencing
- 3D representation
- Virtual reality and immersive interfaces
- Annotation
- Linked data generation



# **DC-NET: services priority ordering for Content Providers**

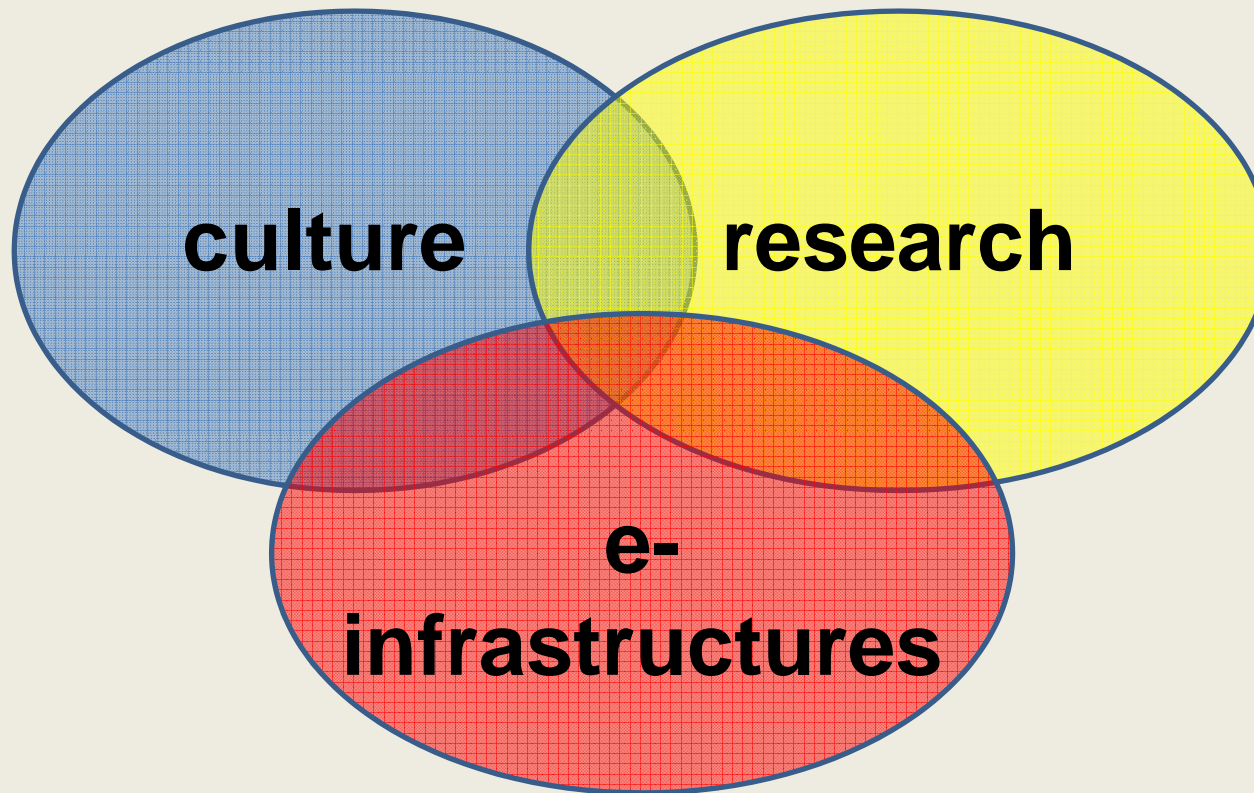
- 1. Long-term preservation**
- 2. Persistent identifiers**
- 3. Interoperability and Aggregation**
- 4. Advanced search**
- 5. Data resource set-up**
- 6. User authentication and access control**
- 7. IPR and digital rights management**





# **INDICATE: Experimenting with new services for Data resource creation and Adding value to content**

- I. Long-term preservation**
- II. Virtual Exhibitions**
- III. Geocoding cultural content**
- IV. Using the Grid for the DCH sector**
- V. Exploiting the semantic technologies**



Cooperation and coordination among these three sectors is at the core of the DCH e-infrastructure



# The network of common interest

It combines:

- regional, national and international levels,
- bottom-up (working groups) and top-down (Joint Programming) approaches

**Working groups:** experts seconded by their cultural, research and infrastructure organisations

**Cooperation with other networks and projects:** EPIKH, CHAIN, EUMEDGRID-Support, EUMEDCONNECT2, LINKED HERITAGE, ....



# Liaisons with strategic bodies

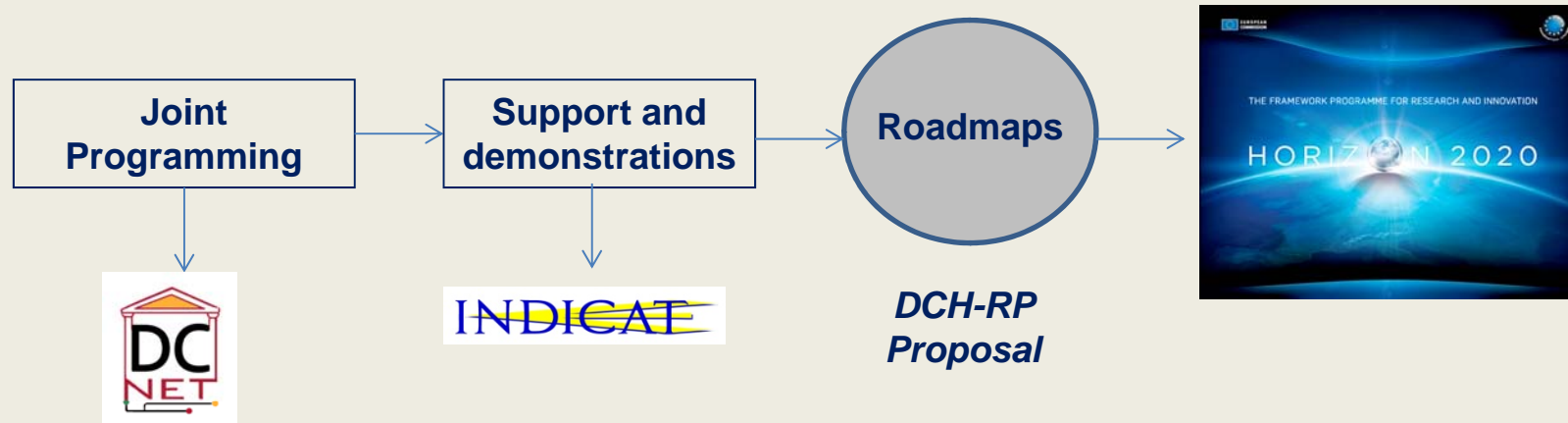
Factual cooperation is established with:

- **e-IRG** e-Infrastructure Reflection Group
- **ESFRI** European Strategy Forum on Research Infrastructures (SSH thematic working group)
- **EGI** European Grid Initiative
- **TERENA** Trans-European Research and Networking Association
- **MSEG** Member States Expert Group on digitisation
- **ASREN** – Arab States Research and Education Network



# The vision

- INDICATE and DC-NET are part of a wider process, which started 10 years ago among cultural institutions
- This process entered in a new phase joining the research e-infrastructures
- Time is ready to start working towards an Open Science Infrastructure for Digital Cultural Heritage in 2020







# DCH-RP to create a validated Roadmap for the long-term preservation in DCH

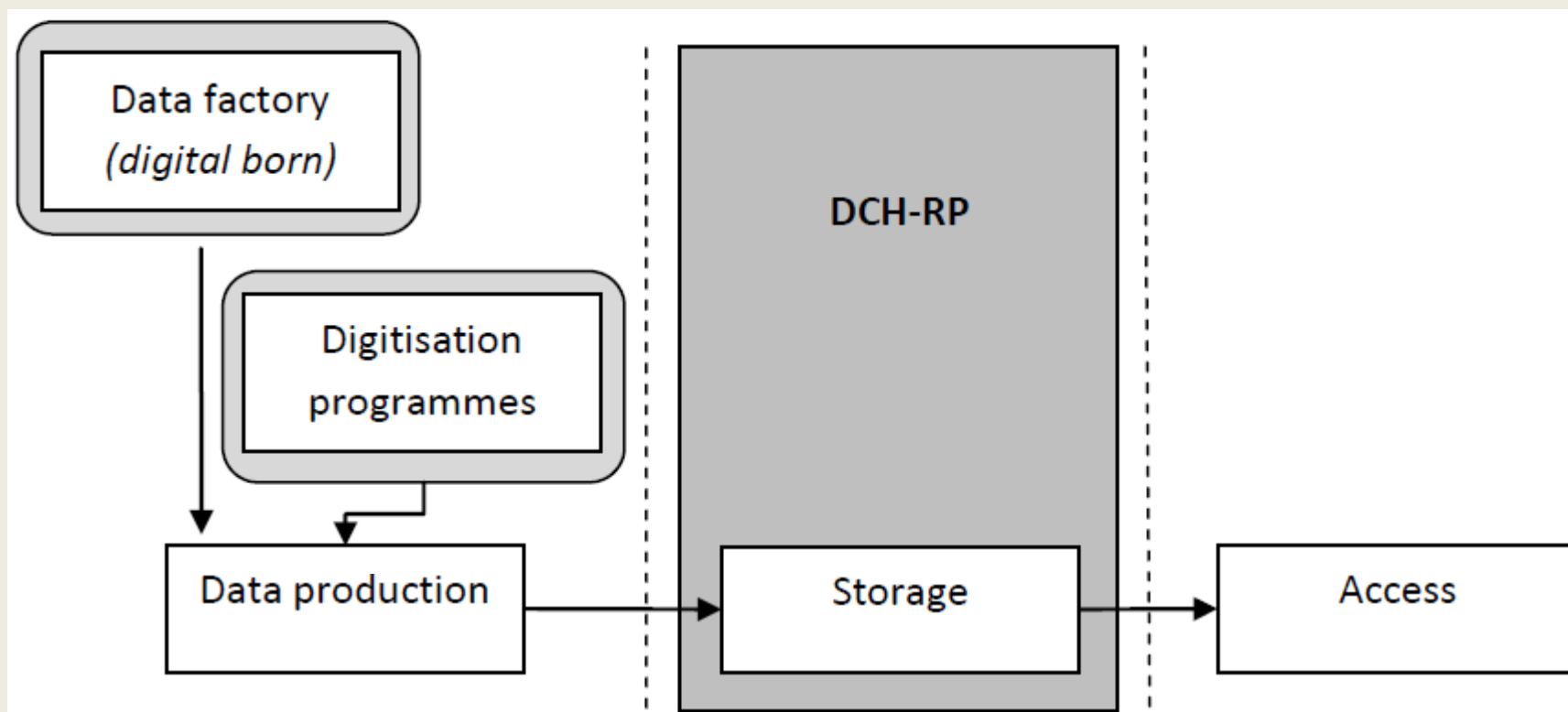
- The use of existing research e-infrastructure is an efficient channel for the delivery of advanced services to the digital cultural heritage
- To achieve this goal, NREN and NGI facilities needs to be complemented with targeted specific services
- DC-NET and INDICATE started the work
- DCH-RP will continue adding more concrete results in the specific area of the **digital preservation**





## DCH-RP characteristics

- A Coordination Action (under negotiation) with cultural institutions, e-infrastructure providers and a wide network of international organisations willing to contribute to the project
- DCH-RP refers to the digital preservation of digital representation of cultural objects (not to the preservation of physical cultural objects).
- DCH-RP deals with the storage phase, which includes both '*long-term preservation*' (including dark archives) and '*short-term preservation*' (storage for a relatively short period of access).





## DCH-RP objectives

- i. to harmonise data storage and preservation policies in the DCH sector at European and international level
- ii. to progress with the dialogue among DCH institutions, e-Infrastructures, research and private organisations
- iii. to establish the conditions for these sectors to integrated their efforts into a common work
- iv. To identify the most suitable models for the governance, maintenance and sustainability of such integrated infrastructure for digital preservation of cultural content



# DCH-RP expected outcomes

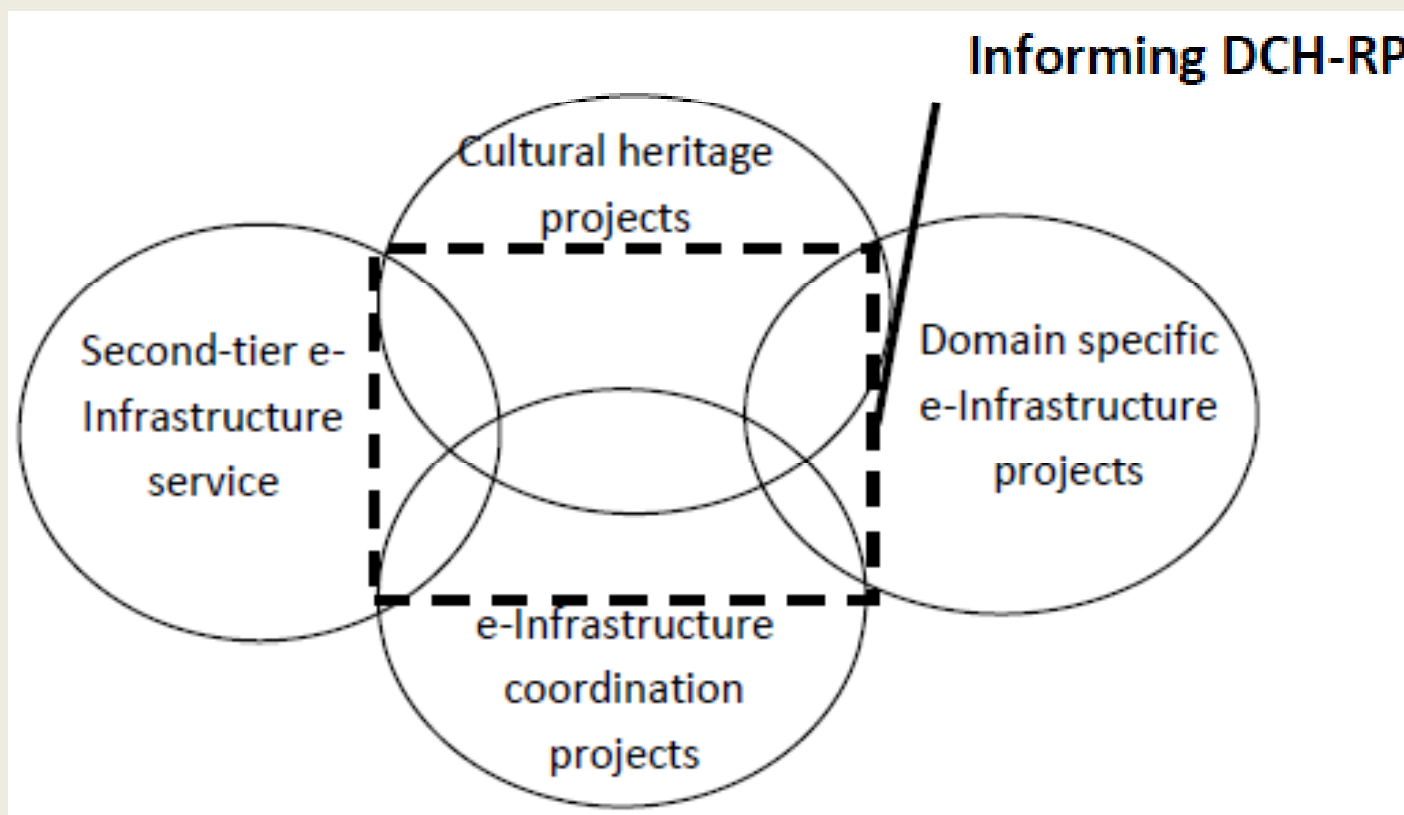
The main outcome will be a Roadmap for the implementation of a preservation infrastructure for DCH

- supplemented by practical tools for decision makers
- validated through a range of proof 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



# Cooperation









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# Next appointment

**7-8 June 2012, Paris – INDICATE Workshop on Strategies and future plans**

**9-10 July 2012, Cairo – INDICATE Final Conference**

**October 2012 – launch of the new DCH-RP initiative**



**Catania, 20/42012**





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# Thank you

[www.dc-net.org](http://www.dc-net.org)

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