



INDICAT
International Network
for Digital Cultural
Heritage e-Infrastructure



A data infrastructure for digital cultural heritage: characteristics, requirements and priority services

22 February 2012

TELDAP 2012 Conference

Antonella FRESA

Technical Coordinator

Central Institute Union Catalogue Italian Libraries



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



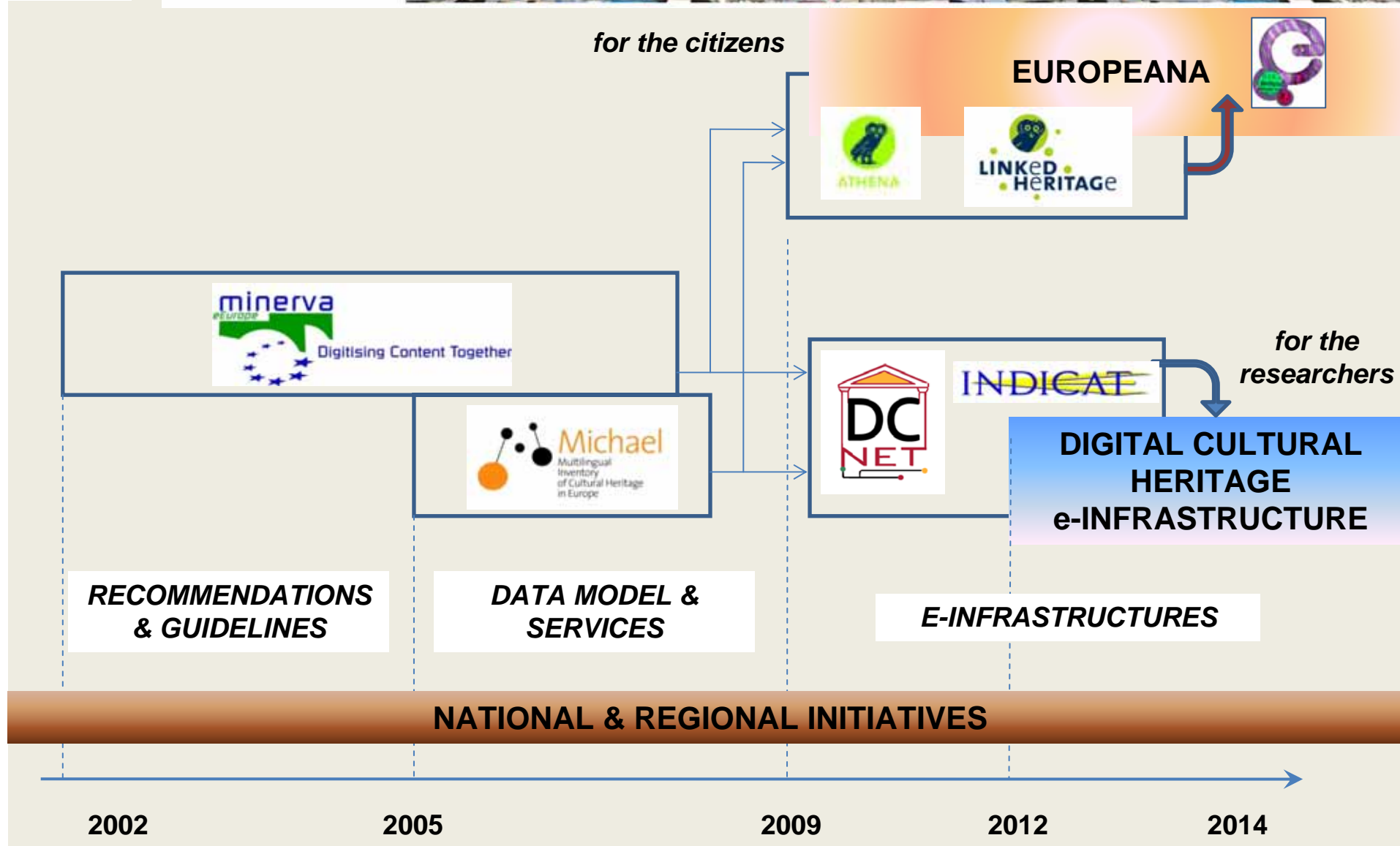
Initiatives of the European Member States in the last 10 year

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
- E-infrastructures for the research
- International cooperation: in Europe and abroad
- Digitisation within national and regional programmes



INDICAT
International Network
for Digital Cultural
Heritage e-Infrastructure





Digital cultural content characteristics

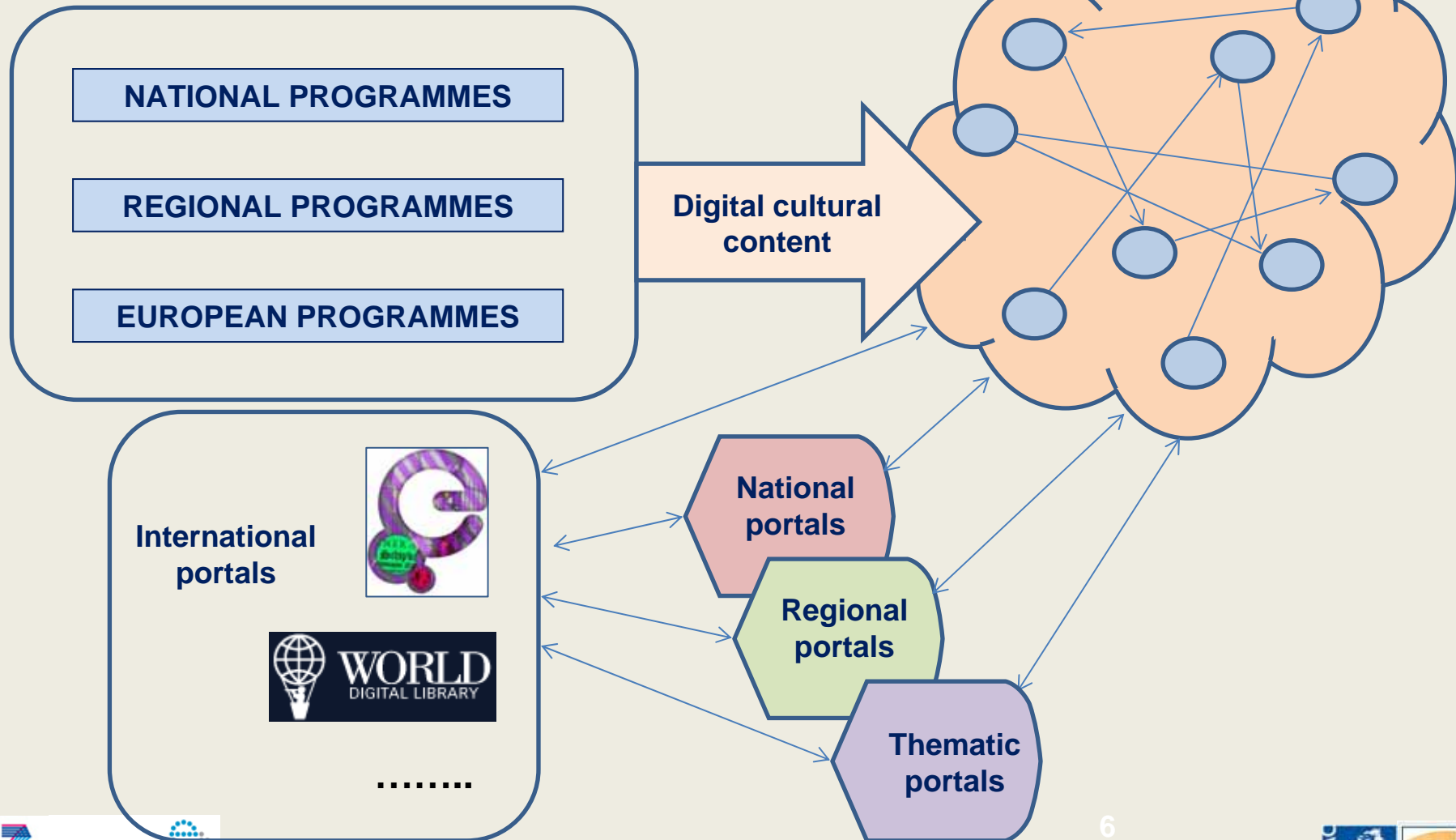
The **amount of digitised material** is growing very rapidly

- **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



Taipei, 22/2/2012



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.

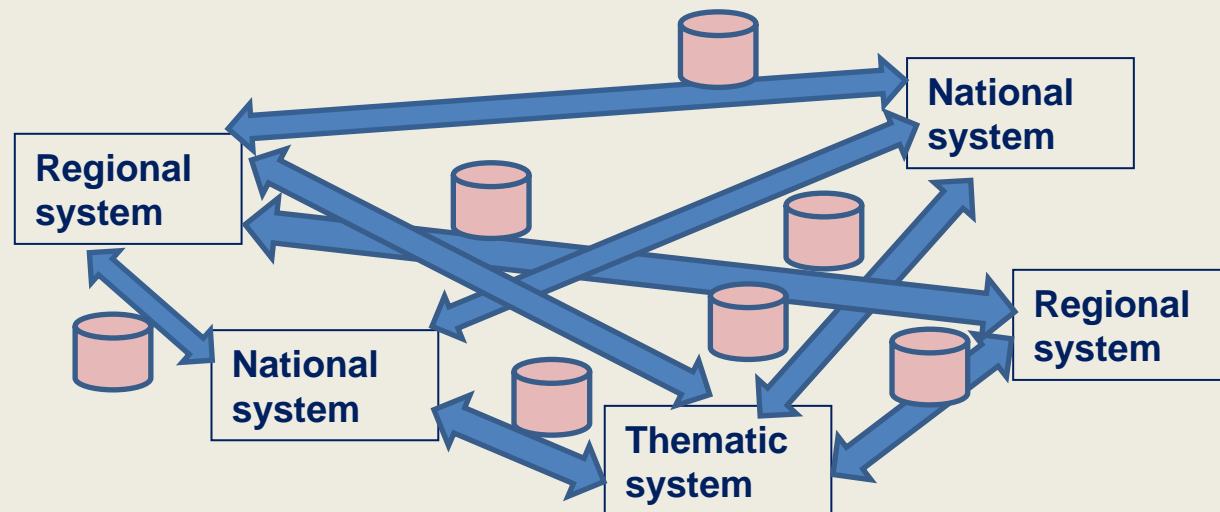


The e-infrastructure for DCH

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 on the use of existing e-infrastructures as a channel for 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**

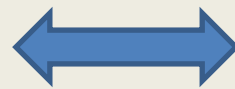


Two integrated projects

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



Priorities and
programming



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

A concrete approach within an international dimension

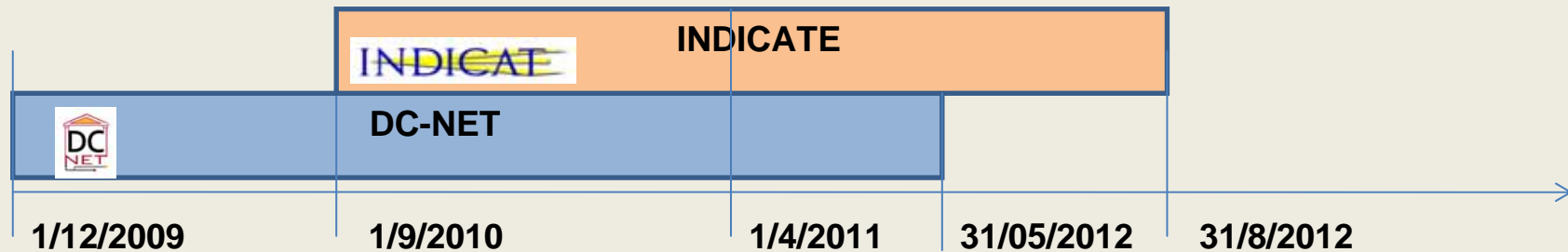
- Stimulating the **international cooperation** of eInfrastructures providers and cultural heritage users
- Target areas:
 - Mediterranean region, (Egypt, Turkey and Jordan)
 - Cooperation with China in liaison with the EPIKH Grid School
 - exchanges with South America in the frame of experiments for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



INDICAT
International Network
for Digital Cultural
Heritage e-Infrastructure



- The two projects share the same **coordinator** and 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 represent the same **DCH community**.



Research workflow and Service priorities

Priorities for the Digital Cultural Heritage sector have been put together, having in mind the typical workflow of the DCH research.



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

FROM
common issues

TO
common priorities



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 content providers and data resource creation

Common priorities:

- Interoperation of systems
- Aggregation of content
- Cross-search
- Semantic search
- Persistent identification of digital objects
- Simplification of set-up services
- Stable platform
- Scalability



Services for managing and adding value to content

e.g.:

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



Services for content consumers

The “cafeterial model”: a broad range of services to be made available, without the need to actually deliver them for all members of the community.

e.g.:

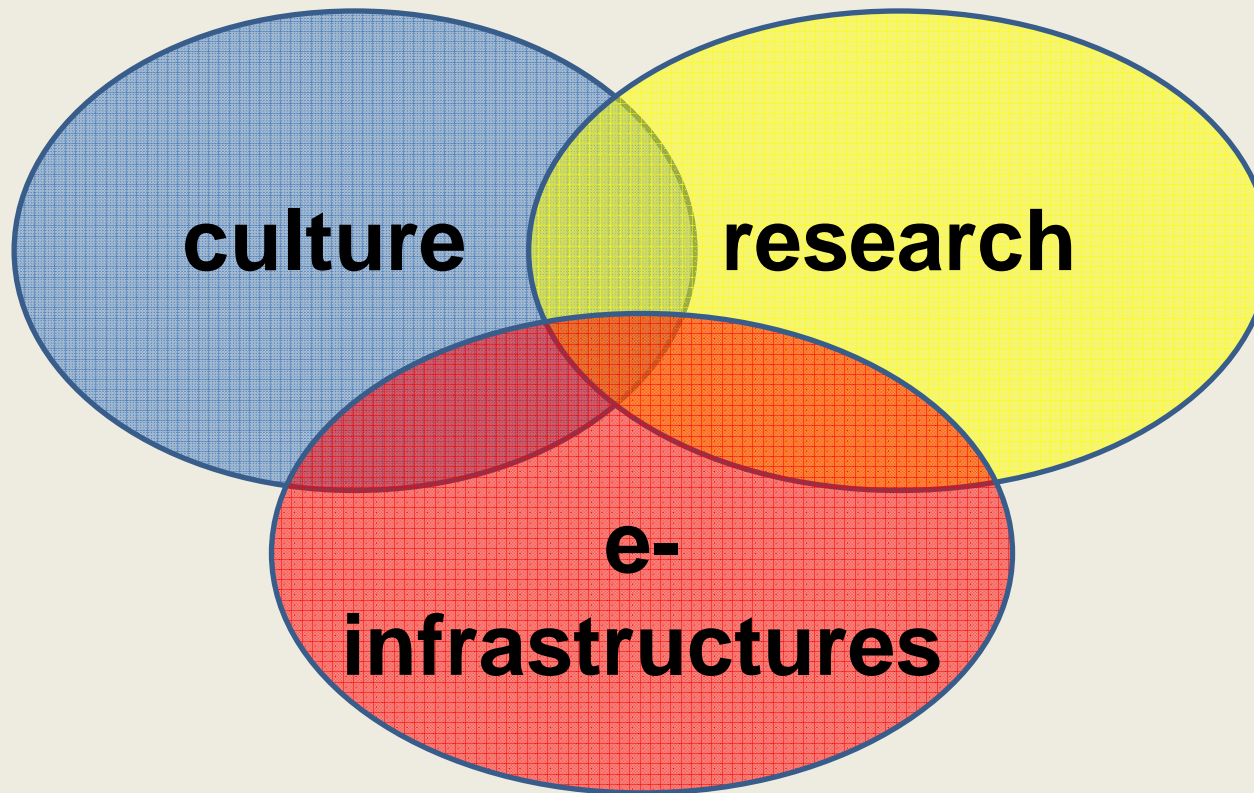
- User authentication and access control
- Collaborative environments
- Advanced search
- Visualisation



Services priority ordering

A prioritised list of the most immediately important services has been agreed:

- 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**



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



INDICAT
International Network
for Digital Cultural
Heritage e-Infrastructure



Position Paper

Open consultation Green Paper on Common Strategic Framework

- 1. European Coordination:** the role of Member States and European Commission
- 2. Europeana:** towards its full deployment
- 3. Preservation:** a task for the Member States
- 4. Digital Cultural Heritage:** the need for a research e-Infrastructure
- 5. Research and innovation** in the digital cultural heritage: an international matter
- 6. Users involvement:** the success factor
- 7. Coordination and demonstration:** a requirement for the DCH sector



INDICATE
International Network
for Digital Cultural
Heritage e-Infrastructure



Next appointment

8 March 2012, Rome – DC-NET Final Conference

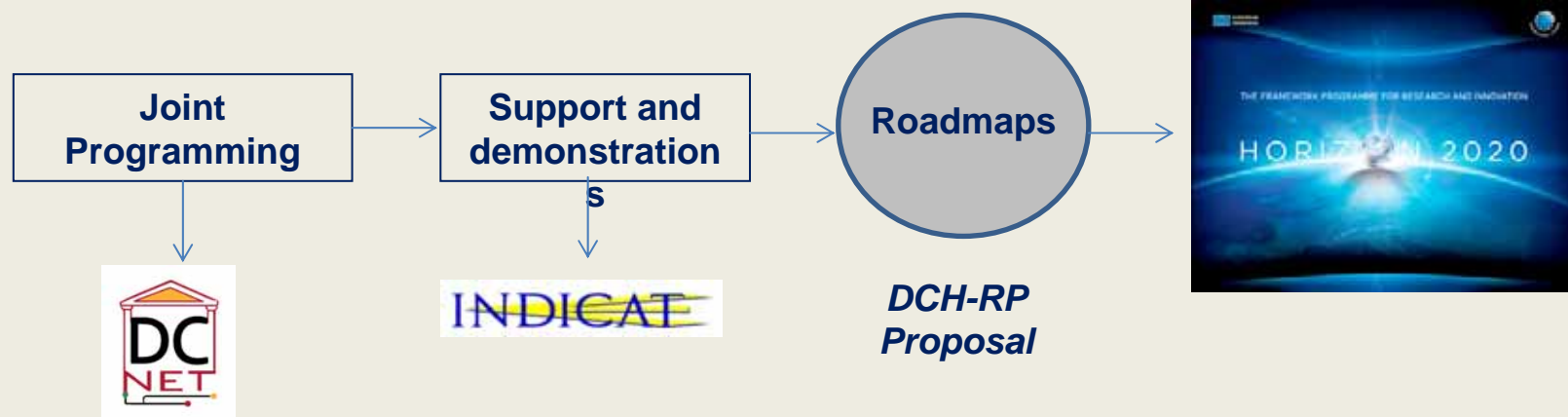
20 April 2012, Catania – INDICATE Technical Conference to demonstrate the e-Culture Science Gateway and to present the result of the use case studies on long-term preservation, virtual exhibitions and geo-coded cultural content

9-10 July 2012, Cairo – INDICATE Final Conference



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





INDICATE
International Network
for Digital Cultural
Heritage e-Infrastructure



Thank you

Antonella Fresa

DC-NET and INDICATE Technical Coordinator

fresa@promoter.it

antonella.fresa@beniculturali.it

www.dc-net.org

www.indicate-project.org