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## **E-Culture Net Thematic Network (2002-2003)**

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1. Introduction
  2. Creation of Website ([www.eculturenet.org](http://www.eculturenet.org))
  3. Distributed European Electronic Resource (DEER)
  4. Development of DACO (Distributed Autonomous Cultural Object) protocol
  5. Demonstration of DACO protocol
  6. Broadband Demo
  7. Broadband Pilots
  8. Criteria/Topics for European Masters and Doctorates
  9. Demo of Research Matrices and Research Topics
  10. National Networks
  11. Written Agreements
  12. Permanent Home
  13. Proposal for FP6
  14. Further Steps
- 

### **1. Introduction**

This article provides a short description of the main outcomes of E-Culture Net. Subsequent articles will provide detailed versions of some of the main reports produced by members of the thematic network.

E-Culture Net (IST-2001-37491) began on 1 July 2002 as a one-year thematic network and resulted in twelve outcomes: 1) website with definition of vision, structure, expansion; 2) first steps towards Distributed European Electronic Resource (DEER) including scenarios for interfaces; 3) development of DACO protocol for access to local databases; 4) demonstration of protocol; 5) broadband demo; 6) definition of broadband pilots; 7) criteria and topics for European Masters and Doctorates; 8) demo of research matrices and research topics; 9) development of first national networks; 10) written agreements with number of partners; 11) permanent home in the new European University of Culture (Strasbourg) and 12) submission of proposal to become an NoE in FP6. Each of these will be described briefly:

### **2. Creation of Website ([www.eculturenet.org](http://www.eculturenet.org))**

The vision is to provide access to Europe's cultural heritage through co-ordination of networks and develop a Distributed European Electronic Resource (DEER) through a grid for culture; to use the DEER to develop critical methods and thought via European

Masters and Doctorates; and to keep it up to date through research matrices to understand the digital knowledge production life-cycle and generate new research topics.

#### Newly Accessed States (NAS) and Beyond

Gerhard Budin (Vienna) identified NAS partners. Giorgio Giannoulis and Tonia Zervaki (Foundation of the Hellenic World, Athens) identified Mediterranean partners especially via the Medina Network. In Russia, thanks to the work of Nadezhda Brakker (Centre PIC, Moscow), 23 institutions signed letters of intent and A2 forms to join the NoE.

#### Specialised Networks

E-Culture Net has taken up afresh the idea of a Network of Networks, introduced in 1989 by UNESCO through Culture Link<sup>1</sup> (Network of Networks for Research and Co-operation in Cultural Development) and CIRCLE (Cultural Information and Research Centres Liaison in Europe).<sup>2</sup> Whereas the earlier effort was limited to a loose connection through a website with addresses, E-Culture Net foresees a more systematic co-operation by involving existing specialised networks in specific elements of the DEER vision. By joining these smaller networks in a common task, E-Culture Net achieves a new critical mass; at the same time it brings into new light (valorising, in the language of Brussels) various excellent achievements such as the Inventaire, which were previously often unknown beyond their country of origin. Among the networks formally included to date are ERPANET, C2RMF, NEHRN, SCRAN, ORION and SIMILAR. Specialised networks such as the European Network for Ethnological Archives (Réseau Européen des Archives Ethnographiques) and GLEN (Greek and Latin Epigraphy Network) are in the process of joining. Provisional links with MINERVA have been discussed.

#### International Networks

In addition, a series of links with UNESCO and with other cultural networks have been initiated and strengthened. Here the efforts of Frederic Andres (Laval and NII) have been extremely helpful. These networks include:

Canada	Canadian Heritage Information Network	(CHIN)
China	Chinese Cultural Heritage Network	(CCHN)
Japan	Asian Network of Excellence on Digital Silk Roads	(ANoEDSR)
Russia	Russian Cultural Heritage Network	(RCHN)
United States	Nat. Sc. Foundation Digital Silk Roads Cultural Grid	(NSF DSRCG)
World	UN Educational, Scientific and Cultural Organisation	(UNESCO).

### 3. Distributed European Electronic Resource (DEER)

How does one translate a long-term vision into a practical reality? A first step was to identify a series of 12 modules and find existing groups (e.g. consortia) to develop each of these (figure 1). Next, Suzanne Keene (UCL) working with Alice Grant and Francesca Monti produced a series of papers resulting in a Foundation for the DEER with three essential features: a Distributed Repository, a Virtual Reference Room and a Virtual

1) Security	UCLouvain
2) Legal Arrangements	Valencia Team
3) Storage	UNESCO
4) Multilingual Mapping	AMP Consortium
5) Semantic Mapping	SEMKOS Consortium
6) Digital Autonomous Cultural Objects	University of Cologne/DFG
7) Interfaces	Intermedia/Interactive Institutes
8) Multimodal Interfaces	SIMILAR NoE
9) Spatial	ORION TN
10) Temporal-Spatial	Portsmouth EoI
11) Virtual Environments	CINECA
12) Virtual Heritage Centres	CNR-ITABC/VHN

Figure 1. Twelve modules for a prototype DEED as a first step towards a DEER.

Agora: a forum for collaborative research and creation. The report outlined premises, issues and challenges and concluded that the DEER is both feasible and necessary. Lily Diaz (Media Lab, Helsinki) working with other Northern partners (e.g. Andrew Morrison, Intermedia, Oslo) designed the logo and the website, outlined interface challenges and created two concrete scenarios for the DEER.

#### 4. **Development of DACO (Distributed Autonomous Cultural Object) protocol**

Manfred Thaller (Cologne) developed a DACO protocol that builds on the Open Archive Initiative (OAI) and offers access at much greater levels of granularity, namely individual images, pages or even paragraphs, without requiring a re-organisation of existing databases. This provides an European solution to the challenge of accessing national, regional and local diversity while maintaining a “unity of diversities” (Ruffolo).

#### 5. **Demonstration of DACO protocol**

The DACO protocol was applied to five distributed databases to provide access to 1.5 million items (largely pages from books and images). A next phase is planned to involve 500 databases.

#### 6. **Broadband Demo**

Antonella Guidazzoli (CINECA) used images of a wall size fresco of a Map of Bologna in the Papal Apartments of the Vatican for a concrete broadband demonstration using the national supercomputers at CINECA and the Universidad Complutense. Specifications of how subsets<sup>3</sup> of this map could be used over Internet on lines with less throughput were the subject of a *tesi di laurea* at CINECA by Valeria Cavallari. These examples are also concrete steps in the direction of Maurizio Forte’s vision of Virtual Heritage Centres (VHCs).

## **7. Broadband Pilots**

Arturo Colorado y Castellary (Universidad SEK de Segovia, Isidro Moreno (Universidad Complutense de Madrid) and their team developed a paradigmatical model for understanding new media developments and identified three integrating themes:

1) Intelligent Multimedia Museums; 2) Hypermedia Online and 3) Hypermedia E-Learning. They used these integrating themes to define 23 projects to serve as near term inputs for prototypes for the DEER. A concrete example of work in progress includes a reconstruction of the Monastery of Santa Cruz (now the Universidad SEK), that uses Francesca Bocchi's NUME project<sup>4</sup> as a model and forms part of the Segovia in 4-D project.

Meanwhile, the work on Hypermedia E-Learning Online led to collaboration with the BELE Consortium and agreements to link learning and training networks especially in Spain, and France with existing satellite networks in South America and Russia with content, learning tools and new interfaces in an NoE.

## **8. Criteria/Topics for European Masters and Doctorates**

The goal is to develop critical methods and thought using the DEER. Benedetto Benedetti (Scuola Normale, Pisa) has identified criteria and focal points for emerging European Masters degrees as well as an initial draft for course work, identifying three thematic cycles of courses:

- 1) Textual and Visual Databases
- 2) Databases Processing for Conservation Intervention on Monumental Complexes
- 3) Projecting (Planning) of Museum Communication.

In addition, a team has been formed to develop further European Masters Courses in the realm of digital culture. These include representatives from the Politecnico di Milano, Complutense (Madrid), Sorbonne (Paris), UNESCO's World Heritage Studies Programme, and the Northern European Historical Research Network (NEHRN). In addition, four representatives will reflect Masters Courses in Russia. A next step will be to develop a similar small group to represent the Mediterranean especially with respect to Greek, Hebrew and Arabic.

Francesca Bocchi (Università di Bologna) in consultation with Arturo Colorado (Universidad SEK de Segovia) has outlined basic principles for European Doctorates in light of the Bologna Convention. Again, a team has been formed to develop further such European doctorates which includes:

- 1) two key persons from the Sapienza (Anna Maria Silvana de Rosa and Serge Moscovici) who have developed the European Doctorate on Social Representations with a network of Universities throughout Europe and also the only network of Marie Curie Training Centres in the humanities.

- 2) a representative (Thomas Riis, Kiel) from the Northern European Historical Research Network (NEHRN) which has developed a Doctor Communitatis Europaeae (DCE) which was the first of its kind in the historical field.
- 3) the founder of the new European University of Culture (Jacques Poulain, Paris 8), which has as its specific mandate the development of European Masters and Doctorates and is thus ideally suited to co-ordinate the existing efforts.

The European Masters and Doctorates will use resources from prototypes of the DEER.

### 9. Demo of Research Matrices and Research Topics

Traditionally the knowledge production life-cycle was different for each medium: i.e. the production of a manuscript in a scriptorium was very different than the production of a book in a printing press and publishing house. In analog mode, the person who produced the content in one medium was typically separate from those who developed its context and communication. Traditionally senses were also treated separately. Those concerned with visual media were separate from those who worked on tactile media.

In digital mode, all media and senses are potentially interlinked: Hence, the rise of terms such as multi-media, inter-media, trans-media and cross-media. There are also new links between content, context and communication, which leads to new interplay among cultural organisations, industry, research institutions and government. Needed are new overviews to understand these developments.

A first challenge was to develop a prototype for such research matrices. This began by identifying basic categories for a macro- and a micro-research matrix of which details are available on the website. Next, Alexander Bielowski and two student programmers developed a working model to which members can add content. The BRICKS IP plans to adopt this approach.

Netzspannung.org has been working on knowledge discovery tools with semantic maps and other features, which will in future enable users to walk through knowledge landscapes. A next stage will be to combine the research matrices with Netzspannung's approach to achieve new understanding of the digital knowledge production life-cycle. In the longer term the research matrices will become one of the dimensions of the Distributed European Electronic Resource (DEER).

There was also work on research topics. In the short term, by way of preparation for the DEER, research into two basic areas was proposed, namely, access (and preservation) to Existing Cultural Knowledge and Production and Preservation of New Cultural Knowledge. These two areas generated four integrating themes for further research which could become IPS,<sup>5</sup> namely:

- 1) multilingual, semantic access and knowledge organisation
- 2) spatio-temporal access with historical-cultural dimensions
- 3) collaborative creation with multimodal interfaces
- 4) personal and collaborative e-learning.

Following a survey of 23 academic disciplines, two areas for long-term research were also considered, namely, Dynamic Knowledge and New Models of Culture. In addition five further implications were identified:

- 1) Massive new content
- 2) New methods of scholarship
- 3) Multilingual methods to reflect diversity at national, regional and local levels.
- 4) New fields of study
- 5) Changing boundaries of scholarship.

These new areas for future research confirm that the so-called revolution in new media is much more fundamental than hype about more powerful computers linked by faster connections. It is changing the methods for creating, preserving, accessing, and learning (presenting) knowledge. It is changing the boundaries between disciplines and in many ways transforming the nature of knowledge itself.

#### **10. National Networks**

A model of national networks ensures that E-Culture Net can expand to achieve a critical mass that is representative of Europe's enormous diversity. In the course of the first year Spain established a solid national network complete with its own website at <http://www.ucm.es/info/eculture/index.htm>. Content pilots served as a motivation to integrate these efforts. In most European countries a permanent or temporary representative was found to lead the national network. Within the thematic network, membership expanded to 16 European countries, and 9 NAS countries.

National networks, with close links to the policy strands of national governments (e.g. via MINERVA) can address the challenges of subsidiarity and assure that local, regional and national interests become more visible and are fostered through a European E-Culture Net. The national networks can raise awareness of Europe's remarkable unity of diversities as emphasised by Giorgio Ruffolo (European Parliament) and thus contribute to a new, emerging consciousness of what it means to be a European.

#### **11. Written Agreements**

Written agreements with UNESCO, a number of organisations and existing projects ensure that members will enter into a firm framework of co-operation.

#### **12. Permanent Home.**

A permanent home for E-Culture Net has been found at the new European University of Culture on the premises of the European parliament buildings in Strasbourg. This collocation with the premises of the Council of Europe (CoE) ensures a fitting and enduring home for the network.

### 13. Proposal for FP6 NoE

As with other Networks, the co-ordinator will work with a small number of contractors (6) responsible for administering the financial dimensions with other members. Beyond this, the basic goals are broken into activities and these into components each of which is led by an already existing group, sometimes a consortium, sometimes an EoI. This has led to 24 main participants, who have attached to them 132 organisations with a total of 537 researchers. In effect, the NoE is a consortium of a number of smaller, specialised NoEs which, in isolation, lack the critical mass to achieve what is now possible. Basic rules for membership (entry and exit), organisation and structure have been defined and are available online.

The activities of E-Culture Net included two conferences for members (11-14 December 2002, 16-17 June 2003), which included guests such as Michael Schnaider (Co-ordinator, artnouveau network). E-Culture Net was also represented at artnouveau's conference in Donostia (5 May 2003). Also among the guests at the second conference were representatives from the German Netzspannung network. This has resulted in agreements for co-operation with these networks.

#### Acknowledgements

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#### Notes

<sup>1</sup> See: <http://www.culturelink.org/>

<sup>2</sup> See: <http://www.circle-network.org/>

<sup>3</sup> See: <http://www.cineca.it/test/ECultureNet/UltimaVersHome.html>

<sup>4</sup> See: <http://www.storiaeinformatica.it/nume/italiano/ntitolo.html>

<sup>5</sup> Four such possible IPS were identified:

- i) DILIGEANT (Digital Libraries in a GEANT framework)
- ii) ACE (Augmented Cities and Environments)
- iii) CO-CREATE (Collaborative Creation)
- iv) PACE (Personal and Collaborative E-Learning).