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IST-2001-37491

**European Network of Centres of Excellence for  
Research and Education in Digital Culture**

**Work Package 5 – Deliverable 6**

**Identify Broadband Pilots**

**Contact:**

**Kim H. Veltman**

Maastricht McLuhan Institute

Universiteit Maastricht

Grote Gracht 82

6211 SZ Maastricht


The Netherlands

Phone: +31 43 3882699


Fax: +31 43 3252930

Mail to: [k.veltman@mml.unimaas.nl](mailto:k.veltman@mml.unimaas.nl)

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<i>Project Number</i>	IST-2001-37491
<i>Project Title</i>	European Network of Centres of Excellence for Research and Education in Digital Culture (E-Culture Net)
<i>Document Type</i>	PU – Public usage of the result
<i>Document Number</i>	D6
<i>Contractual date of delivery</i>	30-11-2002
<i>Actual date of delivery</i>	
<i>Title of Document</i>	Identify Broadband Pilots
<i>Contributing work package</i>	WP5
<i>Nature of Document</i>	Report
<i>Author(s)</i>	Arturo Colorado Castellary
<i>Abstract</i>	Report identifying broadband pilots from memory institutions and from virtual/augmented reality, including models for evaluation and presentation.
<i>Keyword list</i>	Broadband, cultural heritage, virtual reality, augmented reality, museum, memory institution

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## I. Introduction

The conception of the research matrix and the Distributed European Electronic Resource (DEER) demand the collection and evaluation of possible broadband pilots in order to assess questions of accessibility, interoperability and infrastructure needs.

All identified broadband pilots are tested against an exhaustive set of requirements. Subsequently, the models for evaluation and presentation (appendices 1 and 2) will be applied to the identified projects in order to compile a set of well defined projects to be included in deliverable 10 and to include those in the proposals for the 6FP.

Preceded by a requirements statement, this report lists 37 identified broadband content pilots. In conclusion, a list of four overarching transverse projects, including participating institutions, are presented which will help to structure the content pilots into meaningful research blocks.

## II. Required Characteristics

All submitted projects have to fulfill the following characteristics:

*a) To fit into one of these programmes:*

- Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)
- Hipermedia on line (advanced interactive multimedia)
- Hipermedia E-learning
- New forms of diffusion of Cultural Heritage and Cultural Tourism on line

*b) To fulfil one of these requirements:*

- Paradigmatical general model for broadband applications
- Paradigmatical specific model for a broadband application field
- Paradigmatical web site for broadband


*c) To bring some differential and significant elements in relation with the existing projects.*

- The projects must bring some differential and significant elements in relation with the existing projects (expressive, thematic, participating, technological...).

*d) To develop in two languages at least.*

- The projects must develop in two different languages at least (mother tongue and English).

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e) *To care about the accessibility for handicapped people.*

### III. List of Candidate Broadband Projects

#### 1) Universities

##### a) *Complutense University, Madrid*

- Digital Genoma (Researchers: Isidro Moreno Sánchez, M<sup>a</sup> Teresa García Nieto)
- Multidimensional Museums (Researchers: Isidro Moreno Sánchez, M<sup>a</sup> Teresa García Nieto)
- European Museum for the Sport online (Researchers: Isidro Moreno Sánchez y Miguel Ángel Betancor León) (in cooperation with Las Palmas de Gran Canaria University)

##### b) *SEK University, Segovia*

- Segovia, Digital City in 4D (Researchers: Arturo Colorado Castellary, Miguel Jaime García, Eugenia López Reus, Miguel Angel Chaves)
- Folklore on line (Researcher: Juan José Prat Ferrer)
- Saecula Net (Researchers: Alejandro Bermúdez, Virginia Galván, Miguel Larrañaga)
- E-learning for a Virtual Campus (Researchers: Arturo Colorado Castellary, Luis Martínez Zorzo, Pilar Aramburuzabala, Fernando Hermoso)
- Pedagogy and broadband for the exploitation of the French language for the Cultural Tourism in Castilla y León (Researcher: Félix Núñez París)

##### c) *Jaén University*

- Virtual Net of the Spanish Oliva's Oil Museums (Researcher: José Ignacio Rojas Sola)


##### d) *Zaragoza University, Advanced Graphic Informatic Group*

- ROUTE: A New Approach to the European Cultural Heritage (Researcher: Diego Gutiérrez)

##### e) *Politecnic University of Valencia – Nuria Lloret:*

- Development of a Virtual Recreation of the Historical and Cultural Environment During the Westfalia Treaty and Based on the Resources Kept in the Museums and Archives of the Countries Involved therein
- Study and Analysis of the possible application of the DOI (Digital Object identifier), Dublin Code and Water Marks in the development of virtual recreations

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f) *University Jaume I of Castellón:*

- Teaching of the Audiovisual Technologies through Multimedia Support for an on line Learning (Researcher: Javier Marzal Felici)

g) *A Coruña University - VidealAB*

- Multimedia Contents for Immersive Environments of Virtual Reality (Researcher: Luis Hernández)

h) *Universitat Oberta de Catalunya (Grup Òliba)*

- Creation of Models and Valuation of Virtual Platforms for the Diffusion, Documentation and Communication of Cultural and Heritage Institutions (Researchers: Glòria Munilla Cabrillana y Cèsar Carreras Montfort)

i) *University of Sevilla*

- Cultural Heritage and Landscape during the Middle Ages in the Southern Sierra of Sevilla (Researcher: Magdalena Valor Piechotta)

j) *University of Alcalá de Henares*

- Development and Promotion of the Historical and University City of Alcalá de Henares in a Virtual Reality and Multimedia System (technology-language vrml) for broadband (Researcher: José Morilla Critz)

k) *University of Extremadura / MEIAC*

- Creation and Communication Plan of the Contemporary Art Virtual Museum. Digital space for interaction, production and fidelitation of artists, users and contents (Researchers: Victoria Carrillo, Bernardo Riego Amézaga)

**2) Museums**


a) *MIDE (Internacional Museum of Electrography), UCLM*

- “Ocean of Know” in Europe. An E-learning experience for the childhood segment of the disfavoured communities (cultural minorities) from the biggest city areas (Researcher: José Ramón Alcalá Mellado)

b) *National Museum of Ceramics and Sumptuary Arts González Martí, from Valencia & Friends of the Museum*

- Cultural Heritage in the Net. A legacy to share. Education and Diffusion of the Cultural Heritage (Researcher: Pilar Espona)

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### 3) Entreprises and Foundations

#### a) *Gecco Media S.L*

- E-Learning platform and curricular contents for scholarly teaching (Researcher: José Manuel Nicolás)

#### b) *Nacional Association of Didactic Researchers*

- Broadband for the foreign language teaching (BELE) (Researcher: Diego Antona)

#### c) *VICOMTech, San Sebastián*

- Virtual walk throughs of historical and paradigmatical places guided by multilingual interactive avatars (Researcher: María Teresa Linaza Saldaña)

#### d) *e-Cultura Net, S.A.*

- Museums Net: Diffusion of the Cultural Heritage through Internet (Researcher: Félix Lozano Corbacho)

#### e) *EQUIPO IDEA S.L. (Filmoteca)*

- Eurointerfilm (Researchers: Abelardo Martín, Antonio Martín)

#### f) *MediaLabMadrid – Conde Duque Cultural Centre - Madrid Council*

- DASII (“Banquete on-line”) (Researchers: Kepa Landa y Luis Rico)

### 4) Councils

#### a) *Granollers Council*

- GRANOLLERS e\_CULTURA (Researcher: Vanesa Freixa Riba)


### 5) Consortia

#### a) *Consorzio Interuniversitario per il Calcolo Automatico dell'Italia Nord Orientale (CINECA)*

- Web Portal for Cultural Heritage Network of Centres of Excellence
- Access Grid Node for Centres of Excellence
- Vatican Map on a Broadband Network
- NET AKSUM - Virtual Archeological Landscape of Aksum
- Location Dependent Services Deployment and Standartization

For descriptions of the projects from CINECA, please refer to appendices 3 to 7.

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## 6) Networks


### a) *Scottish Cultural Resources Access Network*

- 3D Scanning  
 SCRAN / The Multimedia Team / Arius 3D  
 SCRAN is working with the Multimedia Team and Arius 3D in scanning museum objects in 3D. ARIUS 3D are specialists in 3D scanning using laser scanning techniques to scan objects to an accuracy of 100 microns, the scan also includes true colour information. They have recently installed a scanner in Scotland. These scans create very large files and the project would look at how these files can be delivered in their original form or as degraded surrogates to suit the uses of a wide audience from school-child to researcher. The project would also allow some investigation on how user interfaces and interaction changes through the presentation of 3D objects
- e-science centres  
 SCRAN / Oxford University Computer Centre  
 Development of the high-speed delivery of high quality digital resources into the cultural/education arena. This would build on the experience gained from the e-science centre which specialized in medical informatics, and other non-humanities areas bringing this into the cultural/education sector
- Broadband delivery of interactive CD-ROMs  
 SCRAN/ Scottish Executive  
 SCRAN is involved with the Scottish Executive Education Department through the Scottish Schools Broadband Initiative. The SSBI is in the process of implementing an infrastructure that would provide a broadband network to all schools in Scotland. This project would look at repurposing highly interactive cultural CD-ROM's for delivery over a broadband network, whether as entire CD's or as a collection of themed modules.
- 3D Scanning Technologies for Memory Institutions  
 EdVEC / SCRAN / Memory Institutions  
 The Edinburgh Virtual Environment Centre (EdVEC) is concerned with the capture, modelling and representation of 3D real world objects and domains. EdVEC can create and deliver virtual environments to support teaching and research. It also provides motion capture services and undertakes collaboration with industry. EdVEC has a variety of solutions for 3D scanning, the project could investigate the optimum solutions required for scanning a variety of object types and their delivery over a broadband network.
- Broadband delivery of cultural materials to the home market  
 SCRAN / BT / Memory Institutions  
 SCRAN has recently had discussions with British Telecom (Scotland) about the

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possibility of using BT's broadband network (BT Openworld) for delivering cultural content via SCRAN to the home market.

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#### IV. Transverse Project Proposal

In the presence of many similar projects, we propose the creation of TRANSVERSE researching works. Different institutions and researchers with common objectives could join together and collaborate in them. At the same time, we propose the co-ordinators for each transverse research:

##### 1) Hypermedia Online (Advanced Interactive Multimedia)

###### a) *Paradigmatical General Model*

Co-ordinator: Arturo Colorado Castellary

- Complutense University, Madrid (Researcher: Isidro Moreno Sánchez)
- SEK University, Segovia (Researcher: Arturo Colorado Castellary)
- Consorzio Interuniversitario per il Calcolo Automatico dell'Italia Nord Orientale (CINECA)

##### 2) Intelligent Multideimensional Environments

###### a) *Multidimensional Museums*

Co-ordinator: Isidro Moreno Sánchez (Complutense University, Madrid)

- Complutense University, Madrid: Multidimensional Museums (Researchers: Isidro Moreno Sánchez, M<sup>a</sup> Teresa García Nieto)
- University of Jaén: Virtual Net of the Spanish Oliva's Oil Museums (Researcher: José Ignacio Rojas Sola)
- Complutense University, Madrid (with Las Palmas de Gran Canaria University): European Museum for the Sport on line (Researchers: Isidro Moreno Sánchez, Miguel Ángel Betancor León)
- e-Cultura Net, S.A.: Museums Net: Diffusion of the Cultural Heritage through Internet (Researcher: Félix Lozano Corbacho)
- University of Extremadura / MEIAC: Creation and Communication Plan of the Contemporary Art Virtual Museum. Digital space for interaction, production and fidelitation of artists, users and contents (Researcher: Victoria Carrillo, Bernardo Riego Amézaga)

###### b) *Multidimensional Spaces*

Co-ordinator: Luis Hernández (A Coruña University)

- A Coruña University – Videalab: Multimedia Contents for Immersive Environments of Virtual Reality (Researcher: Luis Hernández)

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- Universitat Oberta de Catalunya (Grup Òliba): Creation of Models and Valuation of Virtual Platforms for the Diffusion, Documentation and Communication of Cultural and Heritage Institutions (Researchers: Glòria Munilla Cabrillana y Cèsar Carreras Montfort)
- Politecnic University of Valencia: Study and Analysis of the possible application of the DOI (Digital Object identificator), Dublin Code and Water Marks in the development of virtual recreations (Researcher: Nuria Lloret)
- Consorzio Interuniversitario per il Calcolo Automatico dell'Italia Nord Orientale (CINECA)

### 3) **Hypermedia E-Learning**

#### a) *E-Learning for Broadband*

Co-ordinator: Diego Antona (National Association of Didactic Researchers)

- National Association of Didactic Researchers: Broadband for the foreign languages teaching (BELE) (Researcher: Diego Antona)
- SEK University, Segovia: Pedagogy and broadband for the exploitation of the French language for the Cultural Tourism in Castilla y León (Researcher: Félix Núñez París)
- MIDE (Electrography Internacional Museum) from UCLM: “Ocean of Know” in Europe. An E-learning experience for the childhood segment of disfavoured communities (cultural minorities) from the biggest city areas (Researcher: José Ramón Alcalá Mellado)
- Gecco Media S.L.: E-Learning platform and curricular contents for the scholar teaching (Researcher: José Manuel Nicolás)
- Consorzio Interuniversitario per il Calcolo Automatico dell'Italia Nord Orientale (CINECA)


### 4) **New Forms of Diffusion of the Cultural Heritage and Cultural Tourism Online**

#### a) *New Perspectives for the European Cultural Heritage*

Co-ordinator: Diego Gutiérrez (University of Zaragoza)

- University of Zaragoza, Advanced Graphic Informatic Group: ROUTE: A New Approach to the European Cultural Heritage (Researcher: Diego Gutiérrez)
- Politecnic University of Valencia: Development of a virtual recreation of the Historical and Cultural Environment happened during the Westfalia Tractate, based on the resources kept in the Museums and Archives of the countries involved in it (Researcher: Nuria Lloret)

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- University of Sevilla: Cultural Heritage and Landscape during the Middle Ages in the Southern Sierra of Sevilla (Researcher: Magdalena Valor Piechotta)
- Nacional Museum of Ceramics and Sumptuary Arts González Martí, from Valencia & Friends of the Museum: Cultural Heritage in the Net. A legacy to share. Education and Diffusion of the Cultural Heritage (Researcher: Pilar Espona)
- Consorzio Interuniversitario per il Calcolo Automatico dell'Italia Nord Orientale (CINECA)
- VICOMTech, San Sebastián: Virtual walk throughs of historical and paradigmatical places guided by multilingual interactive avatars (Researcher: María Teresa Linaza Saldaña)

*b) Digital Cities*

Co-ordinator: Arturo Colorado Castellary

- SEK University, Segovia: Segovia, Digital City in 4D (Researchers: Arturo Colorado Castellary, Miguel Jaime García, Eugenia López Reus)
- University of Alcalá de Henares: Development and Promotion of the Historical and University City of Alcalá de Henares in a Virtual Reality and Multimedia System (technology-language vrm) for broadband (Researcher: José Morilla Critz)
- Granollers Council: GRANOLLERS e\_CULTURA (Researcher: Vanesa Freixa Riba)
- Consorzio Interuniversitario per il Calcolo Automatico dell'Italia Nord Orientale (CINECA)

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## Appendix 1

# E-CULTURENET-RED EN ESPAÑA

## EUROPEAN NETWORK OF CENTRES OF EXCELLENCE: DIGITAL CULTURE RESEARCH AND EDUCATION NETWORK

-RESEARCH PROJECTS FOR BROADBAND INTERNET-

- **STANDARD MODEL FOR THE DEFINITIVE PROJECT VALUATION** -

ENTERPRISE OR INSTITUTION'S DATA RESPONSIBLE OF THE PROJECT	
INSTITUTION OR ENTERPRISE	
FOR FURTHER INFORMATION CONTACT TO	

PROJECT DATA
PROJECT TITLE
<p><b>PROGRAMME OR PROGRAMMES INSCRIBED FOR THE FIRST TIME: (mark in boldface)</b></p> <ul style="list-style-type: none"> <li>• Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)</li> <li>• Hipermedia (advanced interactive multimedia)</li> <li>• E-Learning</li> <li>• Cultural Heritage and Cultural Tourism</li> </ul>


<b>PROJECT EXPLAINING SYNOPSIS (no more than 15 lines)</b>
--

<b>KIND OF PROJECT (mark in boldface)</b> <ul style="list-style-type: none"> <li>• Paradigmatical general model for broadband applications</li> <li>• Paradigmatical specific model for a broadband application field</li> <li>• Paradigmatical web site for broadband</li> </ul>
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The project will be developed in the next languages:
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Project Global Cost:
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<b>PROJECT GENERAL VALUES</b>
<b>Innovation</b>
<b>Expressive</b>
<b>Participation</b>
<b>Technological</b>
<b>Project General Importance</b>


<b>PROJECT SPECIFIC VALUES</b>
<b>Concept</b>
<b>Interactive Structure</b>
<b>Narrative Treatment</b>
<b>Receivers participation</b>

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<b>Infographic design</b>
<b>Software and Hardware functional analysis</b>
<b>Prototype</b>
<b>Others (specify)</b>

<b>PROJECT DIFFERENTIAL VALUES</b>
<b>Originality in relation with other projects (on course or realized)</b>
<b>Contributions in relation with other projects (on course or realized)</b>

<b>PROJECT FEASIBILITY</b>
<b>Development strategy valuation</b>
<b>Fulfilment time valuation</b>
<b>Diffusion valuation</b>
<b>Maintenance valuation</b>

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**ACCESSIBILITY FOR HANDICAPPED PEOPLE**

**QUANTITATIVE VALUATION SUMMARY**

Project Title	Excellent (4 points)	Over the average (3 points)	Average (2 points)	Below the average (1 point)


**QUALITATIVE VALUATION**

It is important for us to motivate the qualitative valuation, because the projects could have some differential values which could justify its development, even though they have not a good valuation in other concepts.

On the other hand, some of the projects could have a good quantitative valuation, but it's possible that they have not any differential values, so they couldn't be evolved.

**COMPARATIVE TABLE FOR ALL THE OFFERED PROJECTS**

Project title	Quantitative valuation	Motivated qualitative valuation	Motivated final advisement

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## Appendix 2

# E-CULTURENET EUROPEAN NETWORK OF CENTRES OF EXCELLENCE: DIGITAL CULTURE RESEARCH AND EDUCATION NETWORK

-RESEARCH PROJECTS FOR BROADBAND INTERNET-


**- MODEL TO PRESENT THE DEFINITIVE PROJECT TO THE VI FRAMEWORK PROGRAMME -**

It will be presented in English

ENTERPRISE OR INSTITUTION'S DATA RESPONSIBLE OF THE PROJECT	
INSTITUTION OR ENTERPRISE	
FUNCTIONS	
ADDRESS	
TELEPHONE	
E-MAIL	
WEB	
FOR FURTHER INFORMATION CONTACT TO	
RESEARCHING GROUP	

OTHER COLLABORATING INSTITUTIONS OR ENTERPRISES
(Specify functions, address, telephone, e-mail, etc.)

PROJECT DATA
PROJECT TITLE
<p><b>PROGRAMME OR PROGRAMMES INSCRIBED FOR THE FIRST TIME: (mark in boldface)</b></p> <ul style="list-style-type: none"> <li>• Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)</li> <li>• Hipermedia (advanced interactive multimedia)</li> <li>• E-Learning</li> <li>• Cultural Heritage and Cultural Tourism</li> </ul>

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**PROJECT EXPLAINING SYNOPSIS (no more than 15 lines)**

- KIND OF PROJECT (mark in boldface)**
- Paradigmatical general model for broadband applications
  - Paradigmatical specific model for a broadband application field
  - Paradigmatical web site for broadband

The project will be developed in the next languages:

Project Global Cost:

**PROJECT DESCRIPTION**

**Contents**

**Objectives**

**Target (audience)**

**Brief study of similar existing projects**


**Differential elements in relation with other projects**

**Interactive structure**

**Narrative treatment (characters, space...)**


**Type of participation**

**Scripts**

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<b>Infographic design</b>			
<b>Functional analysis (concerning about programation)</b>			
<b>Storage</b>	10 GB <input type="checkbox"/>	40 GB <input type="checkbox"/>	100 GB <input type="checkbox"/>
	20 GB <input type="checkbox"/>	80 GB <input type="checkbox"/>	Otro:
<b>Broadband</b>			
1 Mbps <input type="checkbox"/>	10 Mbps (Ethernet 10 Base T) <input type="checkbox"/>	1 Gbps <input type="checkbox"/>	
2 Mbps (ADSL, Cable) <input type="checkbox"/>	100 Mbps (Ethernet 100 Base T) <input type="checkbox"/>	Otro:	
<b>Kind of platform needed and kind of conection needed for the Internet access to the project</b>			
<b>Accessibility for handicapped people</b>			
<b>Demonstrative prototype</b>			

<b>PROJECT DEVELOPMENT AND MAINTENANCE STRATEGY</b>			
<b>Detached tasks and institutions, enterprises and responsible people</b>			
<b>Maintenance of the project once it has been created</b>			
<b>Independent Institutions Possible Sponsorship</b>			

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ESTIMATE							
Detached estimate for tasks							
Detached estimate for institutions							
Institution	Personnel	Travel	Durable equipment	Overheads	Subcontracting	Computing	Subtotal
Institution 1							€
Institution 2							€
TOTAL	€	€	€	€	€	€	€

CURRÍCULA	
<b>Researching Group Members Curriculum Vitae</b>	
Researcher 1	Curriculum
Researcher 2	Curriculum
<b>Institutions Curriculum Vitae</b>	
Institution 1	Curriculum
Institution 2	Curriculum
<b>Enterprises Curriculum Vitae</b>	
Enterprise 1	Curriculum
Enterprise 2	Curriculum

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### Appendix 3

**E-CULTURENET  
EUROPEAN NETWORK OF CENTRES OF EXCELLENCE:  
DIGITAL CULTURE RESEARCH AND EDUCATION NETWORK**

- RESEARCH PROJECT FOR BROADBAND INTERNET -

INSTITUTION DATA	
INSTITUTION	CINECA
ADDRESS	Via Magnanelli 6/3
PHONE	+39 051 6171520
E-MAIL	<a href="mailto:guidazzoli@cineca.it">guidazzoli@cineca.it</a>
WEB	<a href="http://www.cineca.it">www.cineca.it</a>
CONTACT PERSON	Antonella Guidazzoli

PROJECT DATA	
THE PROJECT WILL BE INSCRIBED IN THE NEXT RESEARCH PROGRAMMES (choose one):	
<input type="checkbox"/>	Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)
<input type="checkbox"/>	Hipermedia (advanced interactive multimedia)
<input type="checkbox"/>	E-Learning
<input checked="" type="checkbox"/>	Cultural Heritage and Cultural Tourism

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**SHORT DESCRIPTION** (15 lines max)

**Web Portal for Cultural Heritage Network of Centres of Excellence**

The goal of the project is to develop a vertical Web portal collecting all the information regarding the location and the activities of the Cultural Heritage Centres of Excellence.

This will allow general public and researchers alike to have a single interface for the retrieval of all the information regarding these centres and their activities.


The description of most of the activities carried out by the Centres will require multimedia-enhanced contents (high definition, streaming, virtual 3D representations, etc.); the delivery of these contents required the deployment of a broadband delivery infrastructure and the resolution of interoperability and storage issues.

**PROJECT JUSTIFICATION** (40 lines max)

The project goes in the direction of the specifications for the most recent EU calls (develop networks of competence centres and inform EU citizens, and especially other researchers, of their existence and activities) [..]

The technological implementation of the portal will require a broadband delivery infrastructure and the investigation and the resolution of interoperability and storage issues regarding its multimedia contents.

**COLLABORATING INSTITUTIONS AND TASK OF EACH ONE**

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## Appendix 4

### E-CULTURENET EUROPEAN NETWORK OF CENTRES OF EXCELLENCE: DIGITAL CULTURE RESEARCH AND EDUCATION NETWORK

- RESEARCH PROJECT FOR BROADBAND INTERNET -

INSTITUTION DATA	
INSTITUTION	CINECA
ADDRESS	Via Magnanelli 6/3
PHONE	+39 051 6171520
E-MAIL	<a href="mailto:guidazzoli@cineca.it">guidazzoli@cineca.it</a>
WEB	<a href="http://www.cineca.it">www.cineca.it</a>
CONTACT PERSON	Antonella Guidazzoli

PROJECT DATA	
THE PROJECT WILL BE INSCRIBED IN THE NEXT RESEARCH PROGRAMMES (choose one):	
<input type="checkbox"/>	Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)
<input type="checkbox"/>	Hipermedia (advanced interactive multimedia)
<input checked="" type="checkbox"/>	E-Learning
<input type="checkbox"/>	Cultural Heritage and Cultural Tourism

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**SHORT DESCRIPTION** (15 lines max)

**Access Grid Node Network for the Centres of Excellence**

The goal of the project is to develop a network of Access Grid Nodes for the Cultural Heritage Centres of Excellence.

This will allow these Centres to share their competences and activities, organizing seminars and the like, and drastically reducing the costs and the time wasted in travels

The Access Grid (AG) technology is currently one of the best real-time broadband distance collaboration technologies available, developed in the supercomputing field but suitable to other fields of research.


Currently the AG allows real-time audio/video interaction of multiple audiences and distributed PowerPoint presentations. One of the goals of the project will be to develop tools to be integrated in the AG technology which should allow the distance collaboration on virtual 3D representations, high-resolution images, and so on.

**PROJECT JUSTIFICATION** (40 lines max)

The project goes in the direction of the specifications for the most recent EU calls (develop networks of competence centres have them share their competences and activities) [..]

The development of AG-related technologies will allow to extend the AG technology to other fields of research.

**COLLABORATING INSTITUTIONS AND TASK OF EACH ONE**

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## Appendix 5


### E-CULTURENET EUROPEAN NETWORK OF CENTRES OF EXCELLENCE: DIGITAL CULTURE RESEARCH AND EDUCATION NETWORK

- RESEARCH PROJECT FOR BROADBAND INTERNET -

INSTITUTION DATA	
INSTITUTION	CINECA
ADDRESS	Via Magnanelli 6/3
PHONE	+39 051 6171520
E-MAIL	<a href="mailto:guidazzoli@cineca.it">guidazzoli@cineca.it</a>
WEB	<a href="http://www.cineca.it">www.cineca.it</a>
CONTACT PERSON	Antonella Guidazzoli

PROJECT DATA	
THE PROJECT WILL BE INSCRIBED IN THE NEXT RESEARCH PROGRAMMES (choose one):	
<input checked="" type="checkbox"/>	Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)
<input type="checkbox"/>	Hipermedia (advanced interactive multimedia)
<input checked="" type="checkbox"/>	E-Learning
<input checked="" type="checkbox"/>	Cultural Heritage and Cultural Tourism

deliverable6.doc	Final Version	20 January 2003	24/31
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 <b>e-culture net</b>	IST-2001-37491	WP5	D6
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**SHORT DESCRIPTION** (15 lines max)

The purpose of the Vatican Map on a Broadband Network project is to construct, in a multidisciplinary working environment, a tool for sharing among researchers a large visual high resolution Data Base of historical sources starting from a digital fresco of Bologna Mappa Vaticana (a 7 metre by 5 metre fresco, 1 Gbyte per square metre, 32 bit per pixel in the digital format). The fresco, now preserved in a hall, called 'Sala Bologna', in Vaticano near the private papal apartments and for this reason inaccessible to the public, is a complex work ordered by Pope Gregorio XIII, from Bologna, in 1575. It is an accurate reproduction of the town of Bologna in XVI century.


The network tool should be designed in order to be connected to a GIS representation of the city of Bologna and the environment should be navigable by a guided tour or a free navigation, moreover the user should be able to ask for information (multimedia data, html documents, multimedia data or GIS data) about some buildings in the fresco.

Moreover a specific graphic interface should be designed in order to select objects (single buildings, or interesting areas) and easily control all the parameters of the network application.

**PROJECT JUSTIFICATION** (40 lines max)

**COLLABORATING INSTITUTIONS AND TASK OF EACH ONE**

Dipartimento Discipline Storiche Bologna University Prof. Francesca Bocchi and her staff

 <b>e-culture net</b>	IST-2001-37491	WP5	D6
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## Appendix 6

### **E-CULTURENET EUROPEAN NETWORK OF CENTRES OF EXCELLENCE: DIGITAL CULTURE RESEARCH AND EDUCATION NETWORK**

- RESEARCH PROJECT FOR BROADBAND INTERNET -

INSTITUTION DATA	
INSTITUTION	CINECA
ADDRESS	Via Magnanelli 6/3
PHONE	+39 051 6171520
E-MAIL	<a href="mailto:guidazzoli@cineca.it">guidazzoli@cineca.it</a>
WEB	<a href="http://www.cineca.it">www.cineca.it</a>
CONTACT PERSON	Antonella Guidazzoli

PROJECT DATA	
THE PROJECT WILL BE INSCRIBED IN THE NEXT RESEARCH PROGRAMMES (choose one):	
<input checked="" type="checkbox"/>	Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)
<input type="checkbox"/>	Hipermedia (advanced interactive multimedia)
<input type="checkbox"/>	E-Learning
<input checked="" type="checkbox"/>	Cultural Heritage and Cultural Tourism

 <b>e-culture net</b>	IST-2001-37491	WP5	D6
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**SHORT DESCRIPTION** (15 lines max)

Virtual Reality technology is increasingly viewed as a powerful instrument of knowledge enabling the discovery of cognitive worlds through a sense and motion learning process.

The purpose of the NET AKSUM project is to construct , in a multidisciplinary working environment, a cognitive representation of the archaeological site of AKSUM Ethiopia by means of Virtual Environments modelling and the implementation of interactions and links to data related to the site sharable on a broadband network


The environment should be explored by a guided tour or a free navigation, moreover the user can ask for information (multimedia data html documents, multimedia data or GIS data ) about the objects available in the scene.

A graphic interface should be designed in order to select objects (single objects, objects grouped by classes or object selected by a specific query) and control all the parameters of the broadband network application.

**PROJECT JUSTIFICATION** (40 lines max)

**COLLABORATING INSTITUTIONS AND TASK OF EACH ONE**

CNR ITABC Maurizio Forte and his staff

	IST-2001-37491	WP5	D6
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## Appendix 7

### E-CULTURENET EUROPEAN NETWORK OF CENTRES OF EXCELLENCE: DIGITAL CULTURE RESEARCH AND EDUCATION NETWORK

- RESEARCH PROJECT FOR BROADBAND INTERNET -


INSTITUTION DATA	
INSTITUTION	CINECA
ADDRESS	Via Magnanelli 6/3 Casalecchio ( BO)
PHONE	+39 051 6171520
E-MAIL	<a href="mailto:guidazzoli@ceneca.it">guidazzoli@ceneca.it</a>
WEB	<a href="http://www.cineca.it">www.cineca.it</a>
CONTACT PERSON	Antonella Guidazzoli

PROJECT DATA	
THE PROJECT WILL BE INSCRIBED IN THE NEXT RESEARCH PROGRAMMES (choose one):	
<input type="checkbox"/>	Intelligent Multidimensional Environments (virtual recreations and artificial intelligence)
<input checked="" type="checkbox"/>	Hipermedia (advanced interactive multimedia)
<input type="checkbox"/>	E-Learning
<input type="checkbox"/>	Cultural Heritage and Cultural Tourism

 <b>e-culture net</b>	IST-2001-37491	WP5	D6
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<p><b>SHORT DESCRIPTION</b> (15 lines max)</p> <p><b>Location Dependent Services Deployment and Standardization</b></p> <p>The goal of the project is to develop wide-adopted standards, protocols and technologies related to location dependent services implemented using PDA or other mobile terminals with wireless broadband access (or GSM/GPRS/UMTS where applicable) and GPS localization systems.</p> <p>The project will focus on</p> <p>a) investigating and developing protocols and standards regarding data representation for location dependent services, with an eye on interoperability on different mobile platforms (PDA, enhanced cell phones, mobile terminals) and to the limitations of these platforms and of wireless networks (low computing power, small memory, wireless bandwidth availability, power consumption issues) compared to current PC platforms</p> <p>b) implementing a data development and delivery infrastructure and a wireless network testbed where different mobile terminals with different capabilities can access the same data in a seamless way</p>
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**PROJECT JUSTIFICATION** (40 lines max)

GPS, GSM, GPRS and mobile terminals usage has become widespread; UMTS and wireless broadband services covering metropolitan areas (“Wi-Fi”) are starting to be deployed. Thus, the technologies required to deploy location dependent services on a large scale are starting to be widely available.


The main issue with mobile technologies is the number of different platforms, programs and data formats available for data representation, since the market is still in the developing phase.

To use a location dependent service now means to have the “right” mobile terminal, using the “right” software, “downloading the “right” map, and using the “right” connectivity available.

This hinders the development of location dependent services and of the related infrastructures, because the fragmentation of the market does not create the “critical mass” needed for widespread acceptance and cost reduction.

The objective of the project is to investigate and develop protocols and standards regarding data representation for location dependent services, and work on the interoperability issues and limitations of mobile platforms and wireless networks, implementing a data development and delivery infrastructure and a wireless network testbed where different mobile terminals with different capabilities can access the same data in a seamless way

A typical application for the infrastructure could be to enter in a new town (by car, plane, train and so on) and to be able to download “on the spot” and on a wide range of mobile terminals, the most recently updated map of the town, containing the information required for work, travel or leisure, and then navigating with it.

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