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

Work Package 4 – Deliverable 5

Requirements for European Masters

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<i>Abstract</i>	E-Culture Net proposes a Masters curriculum, based on the experience of SNS, as a first initiative to spread excellence. The report includes a requirement statement, the draft of an education and training platform and presents three concrete examples of evolving Masters courses: textual and visual data bases, data base processing for conservation intervention and monumental complexes, and projecting of museum communication. In a conclusion E-Culture Net is able to offer the first Master courses already by the academic year 2004.
<i>Keyword list</i>	European Masters, European Doctorates, education, training, digital culture, cultural heritage, databases, conservation, virtual reality reconstruction, museum

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Introduction


Paramount to the evolution of new fields of research, such as digital cultural heritage, is the education and advancement of young researchers. The conception of European Masters and Doctoral curricula serves the double purpose of educating the next generation of researchers and focusing the field as a whole.

The Masters will constitute the first material initiative to spread excellence, gained through the co-operation of the members of the NoE re: the research matrix. The educational needs of the students will in turn help to give focus to the research matrix.

Concerning the Distributed European Electronic Resource (DEER), the Masters and Doctorate students will be the first users of the content collection. In turn their feedback will be invaluable for the prototyping cycles of the DEER development and might, through doctoral theses, even contribute materially to its development.


The two decades of experience of the Scuola Normale Superiore di Pisa in providing education and training in the field of digital cultural heritage represents a perfect starting point for the development of a Masters and subsequently Doctoral curriculum. In this way, the NoE should be able to accept the first Masters students already during the first year of the 6FP.

This report outlines the fundamental requirements of a European Masters in digital culture and drafts the education and training platform. Subsequently, the examples of three readily implementable Masters courses are presented. The report closes by proposing a short term initiative to start the first Masters courses immediately.

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I. Requirements for EU Masters in Digital Culture

- Education and training programmes must be integrated into an applied research framework (cf. research matrix), based on pilot cases derived from the main action lines to be developed in the NoE
- To constitute a centre (with some sub-centres) of applied research to define and realize projects in co-operation with the partners of the network to assess and test the pilot cases to be used as course material.
- Analysis, assessment and validation of methodologies and innovation of ICT methodologies.
- To enhance and improve the study, conservation and communication of cultural heritage resources, collections and libraries.
- To develop a perspective of promoting an effective and scientifically correct approach to be addressed to schools, universities, museums and tourist information.
- To develop education programmes reaching from Doctorates and Masters to specialising and up-dating courses.
- To form a core group of institutions (i.e. universities) collaborating on the Masters and Doctoral curricula with regard to complementarity of course contents and formalities of student exchange and accreditation of results.

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A group of main partners as lead of the network:
Universities,
Research Centres

- 1 a committee-group of "museums" and libraries as main content providers and consultants
- 2 companies and NGO enterprises
- 3 ministries and local managing authorities
- 4 government and private institutes for conservation
- 5 network of "museums", libraries, and collections

Educational programme:

- 1 Doctorate
- 2 Masters
- 3 Specialising courses
- 4 Updating courses
- 5 (e-learning: autonomous or complementary)

Data base of case studies is to be realised in order to be available in training programmes

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We propose to define the education and training programme using the practical model promoted by SNS through its CRIBECU centre since 1980.

The action lines of the SNS centre have been achieved through the co-operation of members of the FORMA consortium (founded in 1999 [see appendix A]) whose seat is inside the Scuola Normale di Pisa with its courses centre (recently substituting the old “CRIBECU”).

The FORMA consortium can be considered a small but valid example of what can be developed on large, European scale by the NoE through the foreseen network of centres of excellence.

www.cribecu.sns.it (the web site of the old CRIBECU Centre)

www.munch.cribecu.sns.it/tresy/cursus2.0 (the new one in course of realisation)

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The education and training programme of SNS and the FORMA consortium, on account of past experience (1997-2000 and 2001-2002) can be considered and used as a testbed to develop an E-Culture-Net platform for didactic purposes with the co-operation of its members.

II. Draft for an Education and Training Platform

The two year Doctorate can evolve from the Masters curriculum in a modular way; the second module of the Masters constituting the first module for the compulsory course work of the Doctorate curriculum.

The Masters, to be realized by the NoE, can be developed along the lines of the successful experience of the CORTONA Masters of the SNS by increasing the international co-operation as a wider platform of approaches and methodologies.

The programme has been constituted as one offering three different professional segments of final competence, based on a common platform of introductory ICT methodologies on cultural heritage systems (analysis and data base processing of libraries, visual and textual archives, monumental complexes, web languages, innovative perception technologies, diffusion of critical knowledge as how to select personal tailored levels of training and information)

- 1) ICT methodologies for conservation
- 2) Data bases for digital libraries and virtual reconstructions
- 3) Cultural planning as managing and projecting museums and exhibitions


This programme will gradually be extended to include new methodologies and technologies as they evolve. In particular a curriculum specialising in virtual reality applications is envisioned, as these technologies present a possible link between cultural heritage and contemporary creation in the context of Web-design and the games industry.

III. Duration and Centres

The general amount of hours to be provided has been assessed to be 600, including a final phase of 220 hours aimed at providing experimental and professional internships and “personal” projecting. The introductory modules and the specialising modules correspond both to 3/4 of the global amount of hours (in the hypothetical case of full-immersion courses the weekly modules will comprise 35 hours, 7 per day). The Masters degree can be actually performed within 2 years and in different centres in accordance with their competence to the themes and methodologies to be treated.

The core group of institutions co-operating on the Masters, between which students will be required to participate in courses in a least three centres, will most likely be composed of Universidad Complutense de Madrid, Università di Bologna, Scuola Normale Superiore, University College London and Universität Wien.

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<p>220 hours Introductory modules + laboratory</p>

<p>220 hours Modules of specialisation + laboratory</p>
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<p>160 hours Projects and Internships</p>
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IV. Provisional Costs and Supports

A preliminary budget could be drafted on command (for Masters and training courses, in terms of cost per weekly modules, derived from the experience of SNS, beside of the overhead costs and the presumable charge for general organisation costs).

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V. Concrete Examples of Evolving European Masters Courses

1) Textual and Visual Data Bases

Planning and processing of data bases pertaining to digital treatment of texts and images. Virtual libraries are to be achieved operating online and on CD/DVD supports.

a) *Related EC projects* : (currently running)

- I-Mass
- Meta-e

b) *Digitised Archives of Texts and Images (modified XML –TReSy) for an Online Collection of Marked and Indexed Texts:*

- Architectural Treatises (L.B.Alberti, Vitruvio)
- Art Treatises and texts(Vasari, L. da Vinci, Michelangelo)
- Specialised Lexica (Vocabolario della Crusca)
- Encyclopaedia
- “Historical” Translations

c) *Specialised Libraries*

- BIVIO project (started 2001)
 Biblioteca Virtuale On Line of the Renaissance
 Data Base of texts and images related to the documentation and the Fortuna Visiva of the Renaissance (in co-operation with the Istituto Nazionale degli Studi sul Rinascimento , in convention with the Warburg Institute of London)
www.bivionline.it


d) *Project on Leonardo da Vinci Manuscripts (in co-operation with Museo Leonardo da Vinci, Vinci) (starting_____)*

Partners, beside the lead, Museo of Vinci:

Gerhard Budin, Univ. Wien

Manfred Thaller, Univ. Koeln

Kim Veltman as the scientific consultant on Leonardo da Vinci works

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2) Data Base Processing for Conservation Intervention on Monumental Complexes

Analysis of visual and historical technical data, processing of the data to be organised inside of an information system to build up a virtual–historical reconstruction of a monumental (archaeological, architectural, artistic, and textual-visual) data base.

a) Partners

Italian Istituto Centrale del Restauro, Opificio delle Pietre Dure (the two governmental institutes for restoration and preservation)

b) Related Projects

- CHANCE (finished, June 2002)
- Virartis (three year project by the Italian Ministry of Education, running)

c) Pilot Projects on Monumental Complexes:

Reconstruction methodology and information processing of data bases and GIS platforms supporting mapped and georeferenced visual and textual documentation:


- Assisi (XIX and XX state of the frescoes of Giotto) with Istituto Centrale del Restauro (running since 2001)
- Pompeii project with the Pompeii Directorate (Soprintendenza)
 - a) visual reconstruction of the Pompeii state in XIX century-
 - b) GIS supported data base of the historical documentation of the excavation campaigns and of the conservation intervention (starting)
- Leaning Tower Project of conservation supported and financed by the International Safeguard Committee. The project has been now developed to the whole of the historic reconstruction of the Piazza dei Miracoli (to be finished at the end of this year).
- Reconstruction of the XVII Century Rome through the texts of Bellori (finished)
- Palazzo Pitti of Florence, as the seat of the Medici family: reconstruction of the development of the different inner arrangements and furnishings through inventories and historical archives.

The index of the following items means to give a draft programme of applied researches already running in our ICT Centre of the Scuola Normale that can be used as far as customised and properly tailored to the requirements of didactic and edutainment e-book materials to be addressed to schools, universities and tourism cultural products.


d) “Palaces” and Architectural Complexes as Royal Residences:

- Palazzo Vecchio in Florence (*in the beginning phase*)

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- The Quirinale in Rome (now the official residence of the President of Italian Republic)
 - Fontainebleau in France
 - Vienna, Schloss Schönbrunn
- e) *Monumental Complexes and Archaeological Sites*
- Pompeii archaeological site (*running*)
 - Assisi, The Basilica with the cycle of frescoes of Giotto (*running*)
 - Pisa: the Piazza dei Miracoli with the Leaning Tower (*mostly finished*)
 - Piero della Francesca “La Flagellazione”: the geometrical analysis of the perspective of this famous painting. A prototype reconstruction for schools for didactical purposes. (*already done*)

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3) Projecting of Museum Communication

Museum communication is meant in the broad sense to build up a new museum (involving exhibition structures) or to “re-style” or re-innovate an “old” one. The related methodologies for a best practice approach can involve:

- Analysis of the mission and the objective of the museum in coherence with its “objects” as concerning its cultural identity (and of its territory)
- Planning and designing a “revised” selection of the object in coherence with the revised mission and the objectives to be reached in terms of cultural and sustainable exploitation
- Defining and designing a systems of services, devices and tools for communicating through a new exhibiting structure the content of the museum
- Cultural strategies of communication must be defined in terms of technical equipment for the exhibition and the related cultural services to be promoted
- Protocols of best practice for museum organisation and maintenance are to drawn up from meetings, consulting exchanges and debates among the main partners in order to achieve a common base of intents with “customised or customisable” hand books or proposals to be submitted to others museum on request.
- Data bases of pilot cases can be arranged for consulting and access also in order to define a common platform of different approaches of intervention


a) *Related Task*

To constitute an international centre to develop studies, projects, training programmes in the field of museology and museum communication

b) *Partners Participating in this Sub-programme:*


- Victoria & Albert, focusing the newly realised complete re-building and re-designing of the exhibition structure
- Louvre
- Staatliche Museen zu Berlin,
- Castle of Schönbrunn - Vienna,
- Museum of Leonardo da Vinci - Vinci
- Pompeii archaeological site
- Museums of Rome
- Museum of Design in Munich (a huge structure very successfully inaugurated in 2002, integrating a wide range of approaches to contemporary design and

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exhibiting the evolution of industrial and technical “objects” and materials to match applied researches and artistic developments in most sectors of design)

- Fondazione Cini of Venice : will act both as an international seat for meetings, workshops and a sample of authoritative structure for museums, photographic archives, different kinds of collections (objects, dresses), exhibitions, libraries, specialised training courses
- Philadelphia Museum (contacted and in course of agreement)
- Smithsonian Museum of Washington (contacted and in course of agreement)
- Thyssen Foundation (to be contacted)

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VI. A Short-term “Minimal” Proposal

Actually, SNS is supported by the Provincia di Pisa for the period 2003-2004, as a grant for a biannual education and training programme to be performed in the medieval centre of Volterra (Pisa):

300.000€ for a master course

60.000 € for a cycle of specialising courses, also in form of workshops

The Master and the course to be supported and realised at Volterra could be organised as the first products of the NoE with the following foci:

Master:

Cultural planning of a territory with distributed cultural resources (integrating in a tailored profile for young graduated people)


Content and methodologies: points 1-3 above, including GIS methodologies

Specialising course:

Projecting a new museum or redesigning an “old” one

Content and methodologies: point 3 above

The modules, particularly those of the specialising part, should be constituted by thematic sub-modules of a week, that can be addressed also to professionals or “already on the job” young people as tailored short courses to update or improve their skills.

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Appendix A

The FORMA Consortium

Members of the Consortium:

- 4) Scuola Normale Superiore di Pisa . *includes* : centre of ICT researches on cultural heritage
- 5) National museum of cinema and of visual archives, Turin
- 6) CNR–ITABC - National Council of Researche, Institute of Technologies Applied to Cultural Heritage (*in course of admission*)
- 7) ISEA - Institute of studies and economic analysis. Rome (of the Ministry of Economic Affairs)
- 8) Politecnico di Milan - Department of Electronic Engineering
- 9) Associazione CIVITA (NGO for management of museums and exhibitions), Rome
- 10) Electa-Element-Mondadori (publishing company), Department of Museums and Exhibitions
- 11) INSR - National Institute for Studies on Renaissance, Florence,
- 12) ICR - Central Institute for Restoration (Rome) - Ministry of Cultural Heritage
- 13) Soprintendenza Archeologica di Pompei (Archaeological Directorate of Pompeii) - Ministry of Cultural Heritage,
- 14) Fondazione Cini of Venice (foundation seat , library, collections in San Giorgio island and museum in the centre of Venice) (*in course of admission*)

Structure:

Group joining authoritative public institutions (Universities - Research centres - Museums) and NGO/private enterprises, all operating on top levels in the sectors of cultural heritage resources


Sectors of Intervention :

- Applied research
- Projecting
- Consulting
- Education and training

Fields of Interest:

- Art

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- Archaeology
- Museology
- Libraries
- Collections
- Photographic archives
- Historical archives
- Web language
- E-learning as a laboratory for research on WEB language and training methodologies, beside other technological aspects involved in it