University of Macerata

University Research Projects – Year 2013
FORM PROPOSAL TEMPLATE

Proposal acronym:
FACS

Full title:
Full access to cultural spaces: towards an integrated, comprehensive model for accessibility to museums and exhibitions

Summary:
This project aims to tackle the virtually unexplored field of accessibility to museums and exhibitions from a truly interdisciplinary perspective. The project itself has been conceived not simply as inter-, but transdisciplinary from the very onset, as a full integration of competences, knowledge and experiences is in its very essence. As for its development, after evaluating current practices, experiences and the state of the art in international research in access services, the project aims to take a twofold, empirical path. First of all, it aims to provide an interdisciplinary analysis of two, important museums selected as case studies (Museo Nazionale del Cinema, Torino, and Museo Archeologico Nazionale, Ancona), from the linguistic, technological, museological, architectural and cognitive points of view. The main focus will be on technologies used for accessibility and their possible simplification and standardization. Secondly, the project involves a series of eye-tracking tests within the same museums, in order to identify the saliency of elements on display and the overall fruition of selected sections by tracking the movements of the eyes of a selected sample of visitors. Both empirical paths involve the recourse to qualitative as well as quantitative analysis. The data from empirical analyses shall subsequently be combined, with the support of international advisors, in order to draw up a comprehensive, integrated and user-friendly model for universal accessibility to museums and exhibitions. The ultimate aim of the project is to optimize all variables in the provision of appropriate, innovative access services: from the technologies used to their effective usability, from the texts designed for access to their appropriate reception by diverse categories of the population. In line with the principles of universal design, and taking into account the increasing need for easy-to-use, smart technologies, this project wishes to contribute to making accessibility more and more a reality, a priority and a true form of inclusion.

Key words:
museum, exhibition, accessibility, technology, inclusion

ERC panels:
SH2_10 Communication networks, media, information society
SH4_5 Linguistics: formal, cognitive, functional and computational linguistics
SH5_7 Museums and exhibitions

Macro-Sector:

Social Sciences and ICT, digital humanities, communication, media, information society.

Name of the Principal Investigator (PI):
Elena Di Giovanni

Department of the Principal Investigator:
Dipartimento di Studi Umanistici. Lingue, Mediazione, Storia, Lettere e Filosofia.

List of participants:

Participant name	Position held	Department / Institution	SSD
Elena Di Giovanni	*Researcher/Lecturer*	*Dipartimento di Studi Umanistici*	**L-LIN/12**
Pierluigi Feliciati	*Researcher/Lecturer*	*Dipartimento di Scienze della Formazione, Beni Culturali e Turismo*	**ING-INF/05**
Paola Nicolini	*Associate Professor*	*Dipartimento di Studi Umanistici*	**M-PSI/04**
Antonella Nardi	*Researcher/Lecturer*	*Dipartimento di Studi Umanistici*	**L-LIN/14**
Patrizia Dragoni	*Researcher/Lecturer*	*Dipartimento di Scienze della Formazione, Beni Culturali e Turismo*	**L-ART/04**
Francesca Raffi	*PhD Student*	*Dipartimento di Stumi U Unimc/Università Federico*	**L-LIN/12**
Fabio Levi	*Full Professor*	*Università di Torino*	**M-STO/04**
Simone Borsci	*Researcher/Lecturer*	*Brunel University, London, UK*	**M-PSI/01**
Pilar Orero	*Professor*	*Universitat Autonoma de Barcelona, Spain*	**L-LIN/12**
Anna Vilarò	*Researcher*	*Universitat Autonoma de Barcelona, Spain*	**M-PSI/01**
Joselia Neves	*Associate Professor*	*IACT, Instituto Politecnico Leiria, Portugal*	**L-LIN/12**

Partners
The project will see the active participation of partners, especially two important museums which have agreed to support our project throughout and collaborate as active case studies. A third, active partner will be an international company which provides linguistic and technological support for accessibility. Proof of their true intention to support and share this project is attached (see letters of support).

- Museo Nazionale del Cinema, Torino
- Museo Archeologico Nazionale, Ancona
- Subti Access, Roma e Londra

Advisors
Since the project's main aims are to be empirical, truly international, well-informed and also cutting-edge, the investigators have decided to include a number of international advisors, who have said to be willing to cooperate and share their knowledge.

- Silvia Filippini Fantoni, Director of Interpretation, Media and Evaluation, Indianapolis Museum of Art, Indianapolis, USA

- Amir Parsa, Pratt Institute and MoMa (Accessibility Projects), New York, USA
- Veronica Ceruti, Museo MAMBO, Bologna
- Susan Hazan, New Media and Head of Internet Office, Israeli Museum,
- Jerusalem, Israel
- Annalisa Trasatti, Museo Omero, Ancona

Estimated budget (referred to the Unimc contribution)

Types of expenses	Amount in euros	Description
Organization of first meeting and related workshops	3,700	Travel and accommodation expenses for project investigators, advisors and partners. Venues, equipment, working materials.
Organization of closing Conference for the dissemination of results	4,500	Travel and accommodation expenses for project investigators, advisors and partners. Venues, equipment, working materials.
Eye tracking glasses	5,800	Six-week rent of eye tracking equipment, software for data extraction and analysis and first day training from Tobii, world leader in eye tracking technologies (www.tobii.com).
Case studies analysis	2,000	Travel, accommodation and other expenses for the carrying out of analyses and eye tracking experiments at the two selected museums (over two months).
Secretarial/organizational Support	2,000	Support in the organization of events, reservations, payments, documents, editing of final publication,etc.
TOTAL	18,000	

Duration: **18 months**

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1. Scientific and technical quality

1.1 Concept and Objectives

Equal access to information and services is at the core of a host of actions and projects promoted by international organizations (see, by way of example, all the activities by the United Nations' ITU group and all of its sub-groups[1]) as well as the European Union. The latter

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[1]   http://www.itu.int/en/action/accessibility/Pages/hlmdd2013.aspx.

has, over three decades, issued a number of recommendations and directives aiming to enhance and possibly even enforce accessibility, its commitment towards equal access for all having been, and still being, relentless.

Accessibility to places, services, but also entertainment and culture is at the heart of many development programmes, within the EU and worldwide. On its website, the EU clearly states that four key areas are to be tackled to achieve true accessibility: 1) the built environment and public spaces; 2) transportation and related infrastructure; 3) information and communication, including Information and Communication Technologies (ICT); 4) public facilities and services (http://ec.europa.eu/justice/discrimination/disabilities/disability-strategy/index_en.htm). Moreover, the EU recommends that "a holistic and systematic approach to the provision of accessibility is sought and implemented", which is precisely what this project aims to, in line with other EU-funded projects already carried out or under way (DTV4ALL, HBBTV4ALL, MeSch,[2] etc.).

As a result, the term 'accessibility' has been steadily gaining momentum over the past decades and its applications are nowadays diverse and increasingly flexible. In general, the term 'access' is synonym with entrance, fruition, sharing. And access today is all too frequently denied to people with some kind of impairment, be it physical, sensory, age-related, technological (digital divide) or even language-related.

This project focuses on accessibility to museums and exhibitions. Its aim is to explore, experiment with, and further develop accessibility to these cultural spaces, with reference to all categories of users which encounter difficulties in access.

Following the recommendations of many international bodies (the U.N. and EU above all), this project thus intends to pair the concept of accessibility with that of inclusion, working towards equal access to cultural spaces for all citizens. According to the principles of universal design, which has at its heart concepts like usability, quality, universality and flexibility, this project aims to follow the path designed within such programmes as Horizon 2020, having at its heart innovation and technological advances, but also usability, quality and, all in all, effective inclusion and extended participation to social and cultural life. However, if inclusion and universal design constitute the main reference framework for this project, its pioneering nature and the resources and times available for its development will make it possible to focus mainly on access services for certain categories of the population, along with the evaluation of all techniques and technologies used throughout Europe. The final aim of the project will be, however, to draft a comprehensive, integrated model for true, technologically-based, easy-to-use accessibility for museums, to be perfected and possibly further developed through larger-scale studies.

Besides the overall aims stated above, the project more specifically aims to:

1. Mapping previous and current experiences in accessibility to museums and exhibitions, in Italy and abroad. This first, essential stage will be carried out, first and foremost, by bringing together knowledge and experiences of the project's participants, partners and advisors. These will be integrated with internationally published research and reported practices, also with the support of the project's partners and advisors.

2. Developing a multidisciplinary evaluation of techniques and technologies used in a meaningful selection of museums throughout Italy and Europe, with a view to identifying their

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2   http://www.psp-dtv4all.org; http://mesch-project.eu.

effectiveness and shortcomings from the points of view of usability, quality, overall accessibility and actual fruition.

3. Analysing two case studies with reference to their overall cultural project, mission, types of users and, most importantly, their provision, or lack of provision, of access services.

4. Further analysis of case studies by means of eye tracking technology: selection of spaces and items within the two museums and eye tracking tests with a sample of visitors, with the aim to map saliency points and visual foci of attention, to better design, or redesign, access services.

5. Bringing together results from stages 1, 2, 3 and 4 and developing a comprehensive model for multifunctional, integrated, and user-friendly accessibility to museums and exhibitions, with practical guidelines. The model will include user profiles, use scenarios and *personae* sheets, to be shared in the research community to be used for future developments.

1.2. Progress beyond the state-of-the-art
Accessibility to entertainment, media and culture has been a top priority of the European Union for several years now, with a large number of EU projects having been funded, most of them aiming to enhance and promote accessibility to physical spaces and to information through the media and the internet. This increased attention has fostered many activities, it has given greater visibility to associations of people with disabilities and has led to a general improvement of the techniques and technologies which are used.

However, if the major media have – although not equally – benefited from the results of a few national and international projects, comprehensive accessibility to cultural spaces, in particular museums and exhibitions, has hardly ever been the object of attention and the focus of internationally-funded, multidisciplinary research. Whereas physical access to these spaces is nowadays a requirement by law in most European countries (with exceptions and an overall lack of standardization), true and effective accessibility to the contents, i.e. the **objects** and **spaces** which are at the core of the cultural experience of museums, has hardly ever been investigated. This may be due to the great diversity of such cultural spaces throughout Europe which, contrary to what happens for television, for instance, reveal a huge variety in terms of cultural project and mission, dimensions, overall organization, educational and entertaining purposes. The challenge is, therefore, wide and complex: if accessibility is already widely ensured on certain levels (provision of multilingual guides for foreign citizens is available on a reasonably high percentage of cases), the same does not apply for other categories, for instance the sensory impaired.
As a matter of fact, accessibility for the average visitor is, in itself, often inappropriate: the overall tendency to use overspecialized terminology in providing descriptive texts as access to collections and items, as well as the excessive length and verbosity of such tests, make them largely ineffective as guides through the cultural experience.
Accessibility starts with the average visitors of museums and exhibitions: the educational and entertaining objectives have to be clear, simply stated, concise. And it is precisely from explanatory texts which are thus composed that the accessibility project for a museum or exhibition comes to life.
Relying on the diverse and well-balanced competencies of all its investigators, partners and advisors, this project, therefore, aims at tackling the notion of access to museums from all sides, considering all its applications and highlighting its potential. It also aims, as a first ever research project, to evaluate current technological tools which are used for accessibility in this

field: besides the traditional, portable guides for different languages (which will also be taken into consideration), it will focus on, and evaluate the effective usability of more contemporary tools such as tagging systems for mobile phones, tablet-supported multifunctional guides, specific materials for the sensory impaired (tactiles, e-magnifiers, different types of simplified texts for individuals with cognitive disabilities, etc.).

To this end, the close collaboration with two, significantly different museums as case studies will be of tantamount importance: chosen for their profound difference in terms of cultural project, mission, organization, structure and, of course, the offer of access services, the two case studies (official partners of this project) will offer a valuable opportunity for interdisciplinary theoretical and methodological reflection, as well as for applied research and the constant monitoring of results. The museums involved in this project are not only partners but also stakeholders, with a true interest in collaborating from the onset and benefiting from the project's results.

Selected spaces and display items in both museums will be the object of innovative, unprecedented research through eye tracking technology. Making use of the latest generation of eye trackers, provided on glasses which can be worn by any user and allow for the recording of visual input when the user is moving, we aim to evaluate the selection and actual intake of visual and information and the saliency of the respective items on display. Due to the limited duration of this first project, we shall be concentrating on selected areas for each of the two case studies, but the results of these pilot studies on the eye tracker will provide unprecedented insights into the development of ad-hoc access patterns and programmes, based on the actual perception of museum spaces and items by a sample of real users. If some pilot studies have been carried out with eye tracking technologies in museums,[3] no such experiment has ever been linked to the provision of accessibility and the development of a comprehensive model. This is why all producers of eye tracking technologies which have been contacted for a price quotation have manifested a strong interest in collaborating to the project.

The ultimate strength of this project lies in the joining of data from the mapping of practices and experiences in Italy and Europe with those from the two types of case study analyses (structural and eye-tracking based), thus encompassing both quantitative and qualitative data elaboration. As for technology, we shall here recall that it is so much at the core of the project as to be play a major role as object, instrument and result of this research project.

Finally, the guidelines defined within the proposed model will leave space open for further research, which the interdisciplinary, international network composed for this project intends to further explore through larger-scale projects.

1.3. Methodology and work plan

Based upon the premises laid down above, the project aims to work towards the development of a comprehensive, integrated and user-friendly model for access to museums exploiting the project members' skills at their best and relying on a truly multidisciplinary methodology.
With the time and budget available for this project, the research network aims to work following the tasks defined below and the relative deliverables and milestones.

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3   To date, the only reported experiments with eye trackers in museums have been held at the Indianapolis Museum of Arts, the Deutsches Museum in Munich and Hatfield Marine Science Center Visitor Center in Newport, all as part of a single pilot project described here: http://mw2013.museumsandtheweb.com/paper/capturing-visitors-gazes-three-eye-tracking-studies-in-museums/.

Task list and description

1.3a Task List

Task no.	Task title	Researchers involved	Start month	End month
T01	Organization and communication within the project and its members, partners, and advisors	Elena Di Giovanni Pierluigi Feliciati Agnese Morettini	1	18
T02	Mapping the state of the art in accessibility to museums and exhibitions in Italy and abroad	All investigators, plus partners and advisors	2	4
T03	Analysis of methods, techniques and tools, with a view to identifying their effectiveness and shortcomings.	Patrizia Dragoni, Paola Nicolini, Elena Di Giovanni, Pierluigi Feliciati, Agnese Morettini, Mauro Saracco, Antonella Nardi	3	8
T04	Interdisciplinary analysis of case studies.	Patrizia Dragoni, Paola Nicolini, Elena Di Giovanni, Pierluigi Feliciati, Antonella Nardi, Agnese Morettini, Mauro Saracco, Joselia Neves, Fabio Levi, Museo Nazionale del Cinema, Museo Archeologico Nazionale	4	10
T05	Eye tracking research on selected spaces and items within case studies and subsequent data analysis.	Anna Vilaro, Pilar Orero, Simone Borsci, Elena Di Giovanni, Pierluigi Feliciati, Museo Nazionale del Cinema, Museo Archeologico Nazionale	8	12
T06	Data comparison and development of an integrated, comprehensive model for accessibility to museums and exhibitions.	All investigators	10	15
T07	Communication and dissemination.	All investigators, partners and advisors	0 and 4	4 and 18

1.3b Deliverables list

Deliverable	Deliverable Name	Task No.	Nature	Dissemination Level	Delivery Date
DL-01	Programme for kickoff meeting and workshops	02	Detailed agenda for meeting, objectives of workshops for sub-groups	Unimc (research dept, communication dept, Rector), investigators, partners and advisors	3 month
DL-02	Report on kickoff meeting and workshops	02	Report	Confidential, for investigators and partners	4 month
DL-03	Bibliography of experiences and practices	02	Bibliography	Public (website)	4 month
DL-04	State-of-the-art: selected museums with access services	03	Report	Confidential, for investigators and partners	6 month
DL-05	State-of-the-art: technologies and applications	03	Report	Confidential, for investigators, advisors and partners	8 month
DL-06	Case study 1: Museo del Cinema, Torino	04	Report	Confidential (investigators and partner)	10 month
DL-07	Case study 2: Museo Archeologico Nazionale delle Marche, Ancona	04	Report	Confidential (investigators and partner)	10 month
DL-08	Protocol for eye tracking tests	05	Prototype	Confidential (possibly disseminated at the end)	8 month
DL-09	Analysis of eye tracking data	05	Report and statistical analysis	Confidential, for investigators and partners	12 month
DL-10	Comparative report of results	06	Report	Confidential	16 month
DL-11	Comprehensive model for accessibility	06	Report / guidelines	Confidential (possibly made public at the end)	16 month
DL-12	Accessible publication	07	E-volume	Public	18 month
DL-13	Finalized balance sheet	01	Report	Unimc offices and members of research team	18 month

1.3.c List of milestones

Milestone No.	Milestone name	Tasks	Expected	Means of

		involved	date	verification
MS-01	From mapping the state of the art to the analysis of museums, techniques and technologies	02-03	4 month	Definition of protocol for analysis of case studies
MS-02	From general analysis of case studies to eye tracking experiments	04-05	8 month	Definition of protocol for eye tracking tests
MS-03	From data gathering and comparison to creation of comprehensive model for accessibility	02-03-04- 0	12 month	Model description, guidelines for application in different museums
MS-04	Model discussion	07	18 month	Accessible, e-volume to share with the community of researchers and practitioners (open debate)

1.3.d Task Description

Task 01
Objectives: Organization and communication within the project and its members, partners, and advisors
Description of work and role of participants:
This task involves the project as a whole and stretches over its entire duration. Organization and, above all, communication among investigators, with partners and advisors will be of paramount importance at every step of the project. Each investigator with a role in this task (see below) shall deal with specific aspects of the organization and communication: the website, private forum and open discussion forum shall have to be appropriately managed, for the benefit of all project members and the external community. Expenses will be constantly monitored, leading to the production of a final balance sheet.

- Elena Di Giovanni, organisational and scientific coordinator
- Pierluigi Feliciati, co-coordinator
- Agnese Morettini, communication and organisational support

Deliverables: DL-13, Finalized balance sheet

Task 02
Objectives: Mapping the state of the art in accessibility to museums and exhibitions in Italy and abroad
Description of work and role of participants:
This will be a crucial step in our project. Although every member (investigators and partners) has an advanced knowledge of the state of the art in access to museums, from their own perspective, the sharing, and putting together of all information, research, experiences and studies will be of tantamount importance to define appropriate lines of actions within the project. This task will constitute the true starting point for the project. A kickoff meeting of all investigators and partners will be organized, where every participant will be asked to report on their experiences and knowledge. Furthermore, working groups will be organized as a final part

of this meeting, in the form of specialized workshops aiming to define subsequent lines of actions within each proposed task and sub-task.

All participants, partners and possibly advisors will be involved, at different levels.

Deliverables:
DL-01, Programme for kickoff meeting and workshops
DL-02, Report on kickoff meeting and workshops
DL-03, Bibliography of experiences and practices

Task 03

Objectives: Analysis of methods, techniques and technological tools, with a view to identifying their effectiveness and shortcomings.

Description of work and role of participants:
After the completion of Task 3, and the consequent release of the due report, a selection will be made of the most relevant techniques and technological tools applied throughout Europe, for a more detailed analysis which will contribute to the designing of a more effective, comprehensive model for accessibility. This task will mainly engage internal researchers (Paola Nicolini, Patrizia Dragoni, Elena Di Giovanni, Pierluigi Feliciati, Agnese Morettini, Mauro Saracco, Antonella Nardi), with the support of international advisors.

Deliverables: DL-04, State-of-the-art: selected museums with access
DL-05, State-of-the-art: technologies and applications

Task 04

Objectives: Interdisciplinary analysis of case studies.
Description of work and role of participants:
This will be the first, truly empirical part of the project. In collaboration with the two selected museums which have agreed to be our case studies, we shall undertake a detailed analysis of their structure, collections, space allocation and organization, cultural and educational message, average users, technologies used for accessibility, textual dimension and its true accessibility. Each part of the analysis will be functional to the others, and will, indeed, be carried out from a multidisciplinary perspective. The museologist will work hand in hand with the architect and linguist, the IT and usability experts with the text analyst and psychologist. Investigators from outside our University will play a key role: Fabio Levi has been a consultant for museum access for blind people for more than two decades; Joselia Neves, a linguist by training, is an internationally-known expert in the creation of access services and accessible exhibitions.

Deliverables: DL-06, Case study 1 report: Museo del Cinema, Torino
DL-07, Case study 2 report: Museo Archeologico Nazionale delle Marche, Ancona

Task 05

Objectives: Eye tracking research on selected spaces and items within case studies and subsequent data analysis.
Description of work and role of participants:
This will be another crucial step in our project, which is empirical on two, parallel and complimentary fronts: 1) the multidisciplinary, field analysis of the two museums selected as case studies (see task 04) 2) the true, unmediated evaluation of visitors' selection of visual information and subsequent reception by means of the all-innovative, portable eye tracking technology.

This crucial step will involve the two psychologists who have a long experience of eye tracking research (Anna Vilaro and Simone Borsci), Pilar Orero, who has been a pioneer in the use of eye trackers for linguistic and IT research throughout Europe, plus the two, main experts from the University of Macerata: Elena Di Giovanni and Pierluigi Feliciati.

Deliverables: DL-08, Protocol for eye tracking tests
DL-09, Analysis of eye tracking data (report and statistical analysis)

Task 06
Objectives: Data comparison and development of an integrated, comprehensive model for accessibility to museums and exhibitions.
Description of work and role of participants:
Upon completion of the two, main practical parts of the project (interdisciplinary analysis of case studies in view of redefining their access services and eye tracking tests), the comparison, and joining of data obtained is an essential, extremely delicate stage leading towards the design of a comprehensive, integrated model for accessibility to museums. This task, which combines the results of field research and evaluates their relevance for the drafting of an innovative model, shall involve all investigators, with the support of international advisors. The model which will be drafted shall encompass all features of innovative, flexible and usable access services, with a particular emphasis on the technologies and techniques to be used.

Deliverables: DL-10, Comparative report of results
DL-11, Comprehensive model for accessibility

Task 07
Objectives: Communication and dissemination of research, its final results and possible future developments.
Description of work and role of participants:
All investigators, partners and advisors will be involved, at different stages in the communication and dissemination of the final results of the projects. The specific roles and tasks of each participant will be defined during the project.

Deliverables: DL-12, Accessible publication (probably just in electronic form) of research results and methodologies, to be shared and discussed with the research community for future developments

1.3.e Graphical summary of tasks, deliverables and milestones

Timing of different tasks during the project

Deliverables ⬡ and milestones ⬆
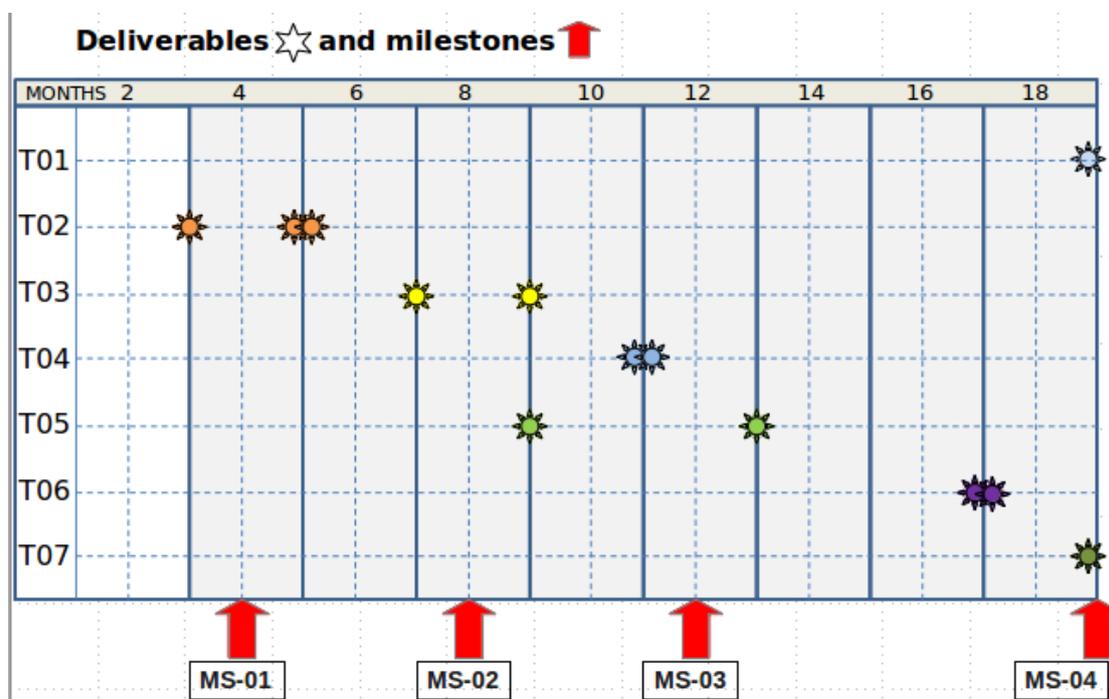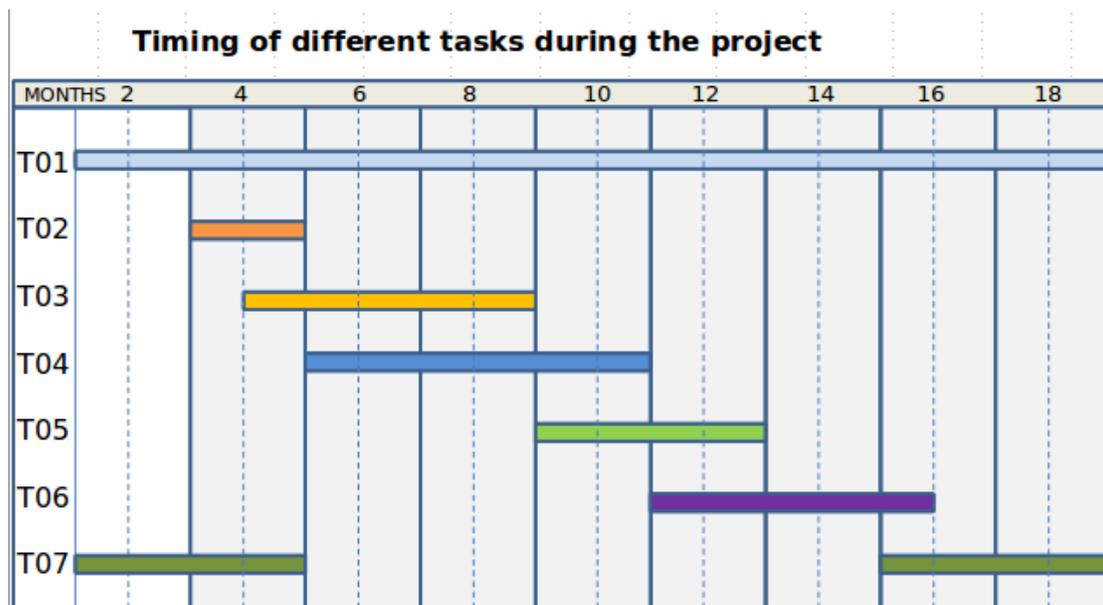
2. Implementation

2.1. Principal investigator

Elena Di Giovanni is Lecturer in English Language and Translation at the University of Macerata, where she specializes in audiovisual translation training and research. She has been doing research in media accessibility (with a special focus on blindness and access to the media and the arts) for over 8 years. From 2007 to 2010, she was head of the Italian research unit on audio description for the EU-funded project "DTV4ALL – Digital Television for All" (http://www.psp-dtv4all.org/). From 2009 to 2013, she was among the investigators of the Italian-funded PRIN project "ACT-Access Through Texts". In 2012 and 2013, she has been the sole international investigator in the project "Translating Music", funded in Great Britain by the

Arts and Humanities Research Council, with a special focus on music accessibility for the sensory impaired.

For 5 years she has been special projects coordinator for SubTi Ltd and SubTi Access, London, supervising the two companies' accessibility-related projects throughout Europe and writing audio description and subtitling guidelines.

Between 2011 and 2012 she was a consultant for RAI, the Italian national broadcaster, for the renovation of their audio description service.

Since 2008, she has been actively working for the provision of access to film, television, opera, theatre and cultural spaces in Italy, with over 50 events made accessible so far.

She is Director of the international MA programme in Accessibility to Media, Arts and Culture of the University of Macerata, where she teaches access to cinema, television and live performances. She has so far supervised over 40 dissertations and 2 PhD theses on accessibility, in Italy and the UK.

She has been Visiting Lecturer in audiovisual translation and accessibility at the Universitat Autònoma de Barcelona, Spain, and Roehampton University, London, UK.

Over the past years she has been invited to lecture on accessibility at a number of Italian universities: Università di Roma 3, Università la Sapienza (Rome), Libera Università di Lingue e Comunicazione IULM (Milan), Università di Parma, Università di Trieste.

In 2011, she organized and hosted the first Italian training seminar on audio description at the University of Macerata, with over 30 participants. She has published extensively on audiovisual translation and accessibility and is currently writing the first audio description manual to be published in Italy.

For over 4 years she has been actively collaborating with associations of the sensory impaired, to foster and enhance access and social inclusion in all possible ways. In 2014 she will be lecturing in accessibility in Italy, Spain and the UK.

2.2. Research group as a whole

The research group draws its strength from the positive blend of disciplinary backgrounds and experiences of each member, as well as from its national and international prominence. Each member has been carefully selected for his/her research activity and true experience in relation to both the project's basic tenets and its objectives; besides investigators from the University of Macerata, other members have been selected for their well-known experience, their innovative and unique contribution to research within this broad, interdisciplinary field. Moreover, the project is also enriched by outstanding partners, which will truly contribute to the development of each stage of the project, and by international advisors, practitioners and experts in the field of accessibility, museum organization and innovation, use of technologies. There follows a list of bionotes for each investigator.

Simone Borsci

With several years of professional working experience in a range of interdisciplinary projects in both academia, as a research fellow and in industry, in relation to user experience and as a data analyst, since September 2011 he has been a research fellow at Brunel University where he has undertaken research on different topics such as medical device technologies and user perspectives, user experience of interaction, preferences elicitation and usability testing. He worked as a researcher for the Accessible lifelong Learning for Higher Education project (EU4ALL) funded by the European 7fp, leading of the Italian group for the accessibility and usability testing of the e-learning system developed by the EU4ALL consortium. His research interests include human factors and interaction, health and disability psychology including health technology services delivery system, matching people and technology, usability and

accessibility studies, user experience analysis in ubiquitous computing contexts, modeling of human behaviour, qualitative and quantitative research of applied psychology using multivariate and predictive statistical techniques.

Patrizia Dragoni
Researcher in Museology, art and restoration critic. She teaches Museology and Museum Standards at the University of Macerata. Her research interests revolve around the investigation into the origins and creation of museum collections as well as museum enhancement, a discipline concerning those activities aimed at fostering cultural heritage knowledge along with better conditions of usage and fruition by disabled people, so as to promote further development of culture (as required by the Code of Cultural Heritage and Landscape of 2004). She published a lot on such topics, including works like "Il dibattito cultural in Italia. Dal 1945 all' 'Atto di indirizzo' sugli Standard Museali" (in Montella – Dragoni, Musei e valorizzazione dei Beni Culturali, Clueb, Bologna 2010), "La qualità del museo. Ricognizione sullo stato di alcuni musei locali" (P. Dragoni, ed., Eum, Macerata 2008) and a monograph, entitled "Processo al museo. Sessant'anni di dibattito sulla valorizzazione museale in Italia" (Firenze, Edifir, 2010).

Pierluigi Feliciati
Senior researcher on Information Science at the University of Macerata since 2007, he has worked since 1986 in the Italian Ministry of Culture as coordinator of National Archives web information systems (since 1986). Presently he is pro-rector for ICT and information systems at the University of Macerata, and lecturer in Information Science applied to Cultural Heritage, Communication and Digital Humanities and in several Italian and International MAs courses. Member of the Board of Directors of the international MA in Accessibility to Media, Arts and Culture (AMAC), his current research interests focus on interface quality, usability evaluation and users interaction with cultural web content: digital cultural repositories management, semantic marking, evaluation methods of users behavior and satisfaction. Member since 2003 of the MINERVA European working group on cultural web quality, co-author of the European and Italian edition of the *Handbook of quality of cultural web sites*, the *Quality Principles for cultural Web sites: a handbook* and the *Handbook on cultural web user interaction*. In August 2013 he directed the 2nd International Summer School in Policies and Practices in Access to Digital Archives, funded by CEI and OSF.

Fabio Levi
Fabio Levi is full professor of contemporary history at the University of Torino, Italy. His researches in blindness began with a book about the history of the institute for the blinds in Turin. With an italian team, he has developed a particular way of drawing and printing which allows to realize books for blind and sighted people as well. With Rocco Rolli he authored the Manual of Tactile Graphics, published in www.tactilevision.it; with Ian Jenkins and Sesan Bird he wrote a book about the Parthenon Freaze, published by the British Museum. He is president of the Italian association "Tactile Vision onlus" which is committed to developing new solutions in the field of accessibility "for all".

Agnese Morettini
Agnese Morettini is a PhD student at the University of Macerata, with a project on media accessibility. After obtaining her BA in Language Mediation, she earned her MA in Modern Languages for Interpreters and Translators from the University of Macerata with a dissertation on Subtitling for the Deaf and Hard-of-hearing (SDH). She has attended several professional and academic training courses on SDH, Audio Description (AD) and Respeaking. Her research

interests include audiovisual translation (mainly interlingual subtitling) and media accessibility (SDH, AD and Respeaking). As of recently, she has become a member of the international research group focused on translation and accessibility, called PAN-ART (Durham University).

Antonella Nardi
Researcher in German Language and Translation, Antonella Nardi is also a member of the Board of Directors of the international MA in Accessibility to Media, Arts and Culture (AMAC).
She holds a degree in German linguistics, with a dissertation on the use of audiovisual material in teaching German as a foreign language within universities. She also holds a PhD in "Sprach- und Literaturwissenschaft" from the University of Zurich. In 2005, she was an investigator in the Italian PRIN project on Italian and German academic language from a pragmatic-functional perspective. She has recently been working on a corpus of German audioguides for paintings from the Neue Pinakothek in Munchen, analysing them from a pragmatic-functional viewpoint. She has been teaching German audiovisual translation for several years in the second-level (MA) degree course in Modern Languages for International Communication and Cooperation. Her research interests lie in linguistics (text linguistics and functional pragmatics), audiovisual translation for accessibility (subtitling and audio description), comparative studies (German-Italian).

Joselia Neves
Josélia Neves has a degree in Modern Languages and Literatures, a MA in English Studies and a PhD in Translation Studies, with a dissertation on Subtitling for the Deaf and the Hard of Hearing (SDH). She teaches at the Instituto Politécnico de Leiria (IPL) and at the Universidade de Coimbra, in Portugal. She is guest lecturer at various Universities in Europe. She has carried out a number of projects within the field of sensory accessibility for the media, live performances and cultural venues. Apart from publishing a set of guidelines on subtitling and audio description, which are being used by broadcasters in Portugal, Brazil and African Portuguese speaking countries, she has published widely in international scientific journals and has made regular contributions towards collective volumes on accessible communication and audiovisual translation. She is a member of TransMedia Research Group and has taken part in a number of European projects covering diverse translation and accessibility issues. She has recently completed a post-doctoral research project, at the Imperial College of London, addressing inclusive communication in museums.

Paola Nicolini
She graduated in Philosophy in the academic year 1978/79 at the University of Macerata. She obtained a second degree in Pedagogy at the University of Urbino in the academic year 1987/88. She completed a post degree training as psychotherapist in 1994.
From 1988 to 2005 she worked as researcher of Developmental and Educational Psychology at the Faculty of Letters and Philosophy of Perugia University. From 2005, she has been Associate Professor of Developmental and Educational Psychology at the University of Macerata.
Her main theme of investigation is teachers' and socio-psycho-pedagogic operators' training. In this field her specialization is on the Theory of multiple Intelligences and its application in Italy. She also investigates on teaching-learning process in the scientific field. She recently got involved in informatics technologies applied to didactics, e-learning and e-training.
She wrote several books, chapters of books and articles, both at national and international level.

Pilar Orero

Pilar Orero holds a PhD in Translation from the University of Manchester, UK. She is full professor of translation and the head of research at CAIAC Research Centre (Universitat Autònoma de Barcelona, Spain). She is also director of the European MA in Audiovisual Translation at UAB, http://mem.uab.es/metav/. Her recent publications include: Topics in Audiovisual Translation (2004) John Benjamins. Co-editor with Jorge Díaz-Cintas and Aline Remael of Media for All: Subtitling for the Deaf, Audio Description and Sign Language (2007) Rodopi. Co-editor with Anna Matamala Listening to Subtitles: SDHoH (2010) in Peter Lang. Co-writer with Anna Matamala and Eliana Franco of the Voice-over: An Overview (2010) in Peter Lang. Co-guest editor with J.L. Kruger Perspectives on Audio Description (2010). She has been leader of numerous research projects funded by the Spanish and Catalan Government. She leads the research group TransMedia Catalonia and is co-founder of the international Transmedia research group. She holds the INDRA accessibility chair 2013 and is currently leading the EU-funded project HBB4ALL (Seventh Framework Programme).

Mauro Saracco
Researcher in Architectural Restoration at the University of Macerata since 2007. Earned a PhD in "Conservation of environmental and architectural heritage" from the Polytechnic University of Milan in 1998. Since 1992, he has been teaching and researching at the University of Florence, the Polytechnic University of Milan, the Marche Polytechnic University and the University of Macerata. Here he is in charge of a course in "Preventive and planned conservation of built Cultural Heritage" and also teaches a course in "Museology and museum technique" since 2007. Licensed to practice Architecture in 1992, registered at the Professional Association of Architects in the province of Macerata on 22/09/1992. His research interests revolve around the investigation into conservation of historicized architectural heritage, with specific reference to modern architecture and industrial archaeology for compatible re-use and enhancement. On this respect, the topics of accessibility and usability are crucial for the verification of architectural re-use and/or updating solutions.

Anna Vilarò
Anna Vilarò has a BA in Psychology from Universitat Autonoma de Barcelona (Spain) and is finishing her PhD on stereoscopic audiovisual content and subtitling and verbal and visual information processing. She lectures at the European MA in Audiovisual Translation, and the Universitat Oberta de Catalonia (Spain). She specializes in eye tracking technology and its application to moving images and dynamic settings. She is the author of numerous papers on audiovisual translation and eye-tracking methodology. She is the manager of the LabTab at CAIAC, UAB.

3. Impact

3.1 Expected impact
The first of its kind in Europe, this project aims to contribute to the enhancement of access services for culture and entertainment by systematically tackling the complex and varied domain of museums and exhibition spaces. The true, functional interdisciplinarity of the investigators' competences and knowledge is in line with the very interdisciplinary nature of the project itself, which would be impossible to break down into monodisciplinary activities or competences. All of this is matched by the advisors' and partners' experiences, as a guarantee of effective, innovative results.
The project could easily fit into a EU call, by virtue of its uniqueness, innovation, as well as its

strong technological, cutting-edge slant. Also, the already international dimension of the investigators, which could be further enhanced for a European project, ensures a broad perspective, from the opening stage (observation of the state of the art in practice and research) to the results and their possible applications.

The choice of Italian museums as case studies is due to the limited amount of funding available for this first project, but could be further developed on an international level for a EU call. However, it is important to remark that the two museums selected as case studies are extremely well-known both in Italy and abroad, for the prestige and uniqueness of their collections. One more element which could favor the selection of this project for EU funding is its strong, empirical dimension: the analyses of case studies, as well as the eye tracking experiments, will provide sound evidence for the drafting of a comprehensive model for integrated museum accessibility.

Moreover, all international partners and advisors would be interested in bringing the collaboration undertaken for this project further, through the application for a European call.

3.2 Dissemination and/or exploitation of project results

The project will have a website and discussion forum from the very start, where some of the results and milestones will be disseminated on a regular basis, in line with the project's agenda. The direct involvement of museums as partners, as well as a company providing access services, ensures that stakeholders are part of the enterprise from the very onset, thus ensuring constant and appropriate consideration of their needs and viewpoints.

The two museums which are partners in this project, as well as the accessible museum involved as advisor, will be the first beneficiaries of the results, as well as providers of feedback. The model to be designed as a result of this project, along with the protocol designed and used for the analysis of the two museums, could certainly be further applied to museums and exhibition spaces after the project completion, even with the support of international advisors. Further application will also offer the opportunity for fine-tuning and further developments. As a further tool for dissemination, sharing and testing, the model (or parts of it) could be the object of training seminars to be held within museums, training institutions or governmental bodies connected with the management of, or accessibility to, museums and cultural spaces. The model could even be the object of an international patent by the University of Macerata.

Finally, the project will be presented in early June, 2014, at a conference organized by ITU-T, the United Nations' group for Telecommunications and Accessibility.