



**INNOVATIONS FROM EU FUNDED R&I PROJECTS
EXHIBITING IN THE DEMO AREA**

Breakout session 3: 'Shared management of cultural heritage'

Focus 'Intangible heritage and community cohesion'

CHIME - A novel app and research tool for music festivals

COURAGE - The platform for sharing hidden counterculture collections and cultural practices

EHRI - Graph technologies for integrating information and collections on the Holocaust

EMOTIVE - A platform and toolbox for emotional storytelling experiences for cultural heritage

HERITAMUS Web tool for participatory curatorship of tangible and intangible heritage

TRACES- CCP, the innovative Creative Co-Productions approach for heritage transmission

Focus: 'Digital innovations for experiencing and co-creating cultural heritage'

ARCHES - Simax, the translation software and sign language avatar for all audiences in museums

CULTURAL HERITAGE INTERACTIVE MAP - A map journal tool for citizen engagement

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BREAKOUT SESSION 3 'Shared management of cultural heritage'**

I-MARE CULTURE- Virtual reality applications for virtual underwater visits

meSch - A digital platform for creating smart objects and spaces linked to physical visiting experiences

VIMM/ITNCH - Augmented and virtual reality technologies for digital cultural heritage

PLUGGY - A software platform and smartphone tool to bring out and share local cultural heritage

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CHIME

A novel app and research tool for music festivals

Helping festival organisers improve festivalgoers' experience through real-time data feedback and an in-app communication platform

WHY?

Music festivals are very popular worldwide, engaging very diverse branches of population but also offering the opportunity to investigate on how festivalgoers, musicians, and other stakeholders experience and respond to the festival atmosphere, and the people they meet. Currently, the market offers many types of apps, enabling data collection with the concern of data privacy and surveillance topping-up prohibitive costs.

WHAT/HOW?

The CHIME App is a mobile application developed through the EU and JPI CH-funded CHIME project, exploring innovative ways of planning and managing jazz festivals in online environments. The app has the potential to significantly improve the communication with – and measurement of – audiences. A novel way of engaging with the festival environment and fellow attendees helps manage festival schedules, navigate sites and communicate with friends and other users. Festival organisers are provided with a cost-effective solution for communicating with audiences before, during and after festival events, but the latest technological developments of the app are going further. An additional prototype for a CMS (Content Management System) will eventually allow researchers and festival organisations to design, create, deploy and manage their own mobile applications and data collection processes.

FOR WHOM?

Festival organisations, attendees and researchers would deeply profit from technologies enabling cheaper and better protected data collection as well as access to realtime and historic material enabling better understanding of the festival environment. Two pilot versions of the app have already been tested at the 2016 Cheltenham Jazz (UK) and the 2017 GMLSTDN Festival (Sweden). In the future, an Open Source version will enable further iterations and potentially apply the technology to other sectors and subject areas. Concurrently, a commercial product will be developed via Birmingham City University's STEAMHouse initiative (<https://www.steamhouse.org.uk>) or other accelerants and festival partners.

PROJECT: CHIME - 618104

FUNDED UNDER: HERITAGE PLUS FP7-ERANET-2013-RTD

RESOURCES: www.chimeproject.eu

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COURAGE

The platform for sharing hidden counterculture collections and cultural practices

Documenting, curating and teaching the alternative culture of the past through an online registry

WHY?

In post-war Eastern Europe, a plethora of personal strategies of dissent manifested in nonconformist cultural practices. During communism, this alternative culture was poorly documented, being often just tolerated by the institutions as a result of clandestine practices. Such memories are essential for the understanding of our past and contemporary Europe, despite being under constant threat to fall into oblivion.

WHAT/HOW?

The COURAGE project develops tools for understanding the historical dynamics of Eastern European countries related with contentious memories, aiming to enhance the networking capacities of the institutions holding them. The registry is an online platform available in 15 languages, collecting all the scattered and hidden collections representing nonconformity or counterculture.

FOR WHOM?

Researchers, educators, students and the general public can find material helping them to think differently about the object under study, turning the attention to how these movements were documented and involving the youth through playful learning methods.

The registry also motivates researchers to develop new skills: instead of presenting a linear narrative, they need to imagine the objects they study (the collections) as part of a network where different stakeholders create the links between the collections.

The registry is also complemented by a Syllabus Creator System, targeting higher education, where users can work together developing syllabus modules for their university courses and use the registry (as well as Europeana and other external sources) to curate materials for their classes.

In the future, a marketplace will be created for cultural opposition items and pieces of art from the former socialist countries, and online and offline trainings on cultural history of underground movements will complement the project.

PROJECT: COURAGE - 692919

FUNDED UNDER: H2020: REFLECTIVE-4-2015

RESOURCES: www.cultural-opposition.eu | www.facebook.com/couragecollections.en/

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EHRI

Graph technologies for integrating information and collections on the Holocaust

Bringing over 1,900 Holocaust information sources together into one comprehensive virtual portal

WHY?

Archival sources documenting the Holocaust are highly fragmented and dispersed across more than 1,900 archives, libraries, museums and other cultural heritage institutions in Europe and beyond. Such dispersal has so far presented a significant obstacle to undertaking transnational, comparative and digital approaches to Holocaust research. Moreover, integrating the sources is challenging not just because of their fragmentation and dispersion but because of their inherent complexity, as holocaust sources are characterised by deep hierarchies, complex provenances and semantic heterogeneity, and are typically not catalogued according to international standards.

WHAT/HOW?

The European Holocaust Research Infrastructure (EHRI) project has utilised graph technology to integrate and enrich information about heterogeneous, dispersed and fragmented archival sources documenting the Holocaust. This innovative tool virtually integrates information about such physically dispersed sources in the EHRI Online Portal. The portal takes advantage of Graph Database technology to flexibly model information within the complex archival data domain. The EHRI collection graph integrates both concrete and “virtual” representations of archival hierarchies and is therefore able to capture physical characteristics of dispersed archival collections. Utilising graph technology has allowed EHRI to integrate information about more than 230,000 archival units, physically held at more than 588 cultural heritage institutions located in 33 countries into its online portal.

FOR WHOM?

The primary users of the EHRI Portal are Holocaust researchers. However, since its launch in April 2015, the EHRI Online Portal has attracted interest from genealogists, local historians and the interested public. In fact, the use of graph technology to integrate complex archival data from many holding repositories is seen by several cultural heritage institutions in other domains as a blueprint to replicate.

PROJECT: EHRI - 261873

FUNDED UNDER: FP7-INFRASTRUCTURES-2010-1

RESOURCES: <https://portal.ehri-project.eu> - @EHRIproject

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EMOTIVE

A platform and toolbox for emotional storytelling experiences for cultural heritage

Bringing objects to life to enhance visitors experience at cultural heritage sites

WHY?

Storytelling applies to nearly everything we do. Whether it is to inform, persuade, entertain, motivate or inspire, we all tell stories every day of our lives. Yet despite their power, not all stories are effective in holding their audience's attention or communicating the messages they set out to convey. In heritage locations, narrative tends to be used narrowly, as a method to communicate the findings and research conducted by the domain experts of a cultural site or collection.

WHAT/HOW?

The EMOTIVE project works from the premise that cultural sites are, in fact, highly emotional places that regardless of age, location or state of preservation, they are seedbeds not just of knowledge, but of emotional resonance and human connection. Therefore, drama-based storytelling has the power to transform heritage and museum visitor experiences, encouraging repeat visits, facilitating direct and ongoing interaction and deepening knowledge transfer. The EMOTIVE's project innovative approach is fully user-centred and experience-oriented where interactive storytelling and immersive virtual experiences literally bring objects to life.

FOR WHOM?

Emotionally engaging stories target a very wide public, who can experience the cultural site either physically or remotely. Wherever visitors are, they can follow characters, look for clues and explore environments. Special emphasis is put on social interaction between group members, providing visitors with a virtual "toolbox", in which they can store notes, story elements, clues, and anything that they may want to keep for later or share with others. The EMOTIVE authoring platform is designed to attract very different authors and has the potential to address more sectors apart from cultural heritage, such as tourism, education, marketing and advertising.

PROJECT: EMOTIVE - 727188

FUNDED UNDER: H2020: CULT-COOP-08-2016

RESOURCES: www.emotiveproject.eu | [@emotive_eu](https://twitter.com/emotive_eu)

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HERITAMUS

Web tool for participatory curatorship of tangible and intangible heritage

Empowering community curation of ethnographic data on heritage using an online tool

WHY?

Currently, all the established heritage management databases and tools are designed for a hierarchical, atomistic and linear approach. Each item is linearly associated with others, and museum “assets” and cultural “knowledge” remains little articulated. This approach reinforces the institution of master narratives produced by prestigious actors, erasing controversies. It urges to picture, at a finer grain, how actors safeguard old practices and, at the same time, innovate.

WHAT/HOW?

The HeritaMus project has developed a technical resource for organising, structuring, and retrieving historical and ethnographic data on heritage (tangible and intangible), to overcome the asymmetrical representation of knowledge by bringing practitioners into the core of the research process using graphs. The online easy-to-use free tool enables community curation of data through a participatory graph database that allows the input of user data and big datasets. The tool is centred on the idea that any item or “node” is defined by its relations with other “nodes”. The community and its knowledge can thus be traced by a network of dynamically connected “nodes”, or a “parliament of things”. The registered user simply has to identify the items that she/he recognises as their heritage (tangible and intangible) and wishes to input in the graph.

FOR WHOM?

The HeritaMus tool has been already adopted by the community of practitioners, stakeholders and researchers. It is being used by the fado community and by the project’s associated partner, Museu do Fado. Since its design is not culturally or object-specific, it can be adopted on objects and subjects other than cultural heritage.

PROJECT: HERITAMUS - 618104

FUNDED UNDER: HERITAGE PLUS FP7-ERANET-2013-RTD

RESOURCES: www.heritamus.fcsh.unl.pt

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TRACES

CCP, the innovative Creative Co-Productions approach for heritage transmission

Collaborating with artists to bring visibility and awareness to contentious local Heritage

WHY?

Practices of transmitting cultural heritage in the memory-identity-heritage complex show that the arts inhabit an increasingly central position in today's social formation. Institutional heritage providers are increasingly seeking collaboration with artists who are working on cultural heritage, not only to present existing heritages in aesthetically more appealing ways, but also to make difficult, awkward or silenced heritage more visible by using aesthetic and communicative methods and techniques.

WHAT/HOW?

With the innovative approach of Creative Co-Productions (CCPs), the TRACES project moves beyond the way art-and-research projects usually function in the cultural field. The CCPs are based on a mutual, equal process in which artists, researchers, heritage agencies (museums, sites, phenomena) and stakeholders (citizens, organisations, policymakers) collaborate on ways to approach, research, communicate, display and educate on a specific case of contentious local heritage. Members of the CCP start working together from the onset of the project and share not only the creative process, but also the formulation of the scientific questions, research strategies and methodologies. The artists have to open their ideas for discussion and be able to share the creative process and practices, while the researchers have their scientific methodologies challenged.

FOR WHOM?

Local administrations and heritage institutions are the first beneficiaries of the results, able to take advantage of the range of strategies and good practices created throughout the research process and benefit from the innovative use of CCPs in the field. The CCPs are intended to represent replicable action methodologies, able to be used in other areas exhibiting a complex heritage territory. Moreover, the innovation opens new perspectives on job creation in one of Europe's most dynamic sectors, such as the one represented by cultural and creative industries.

PROJECT: TRACES - 693857

FUNDED UNDER: H2020: REFLECTIVE-2-2015

RESOURCES: www.tracesproject.eu/ | www.facebook.com/tracesproject/

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ARCHES

Simax, the translation software and sign language avatar for all audiences in museums

Allowing deaf people to enjoy cultural content using computer databases and animated sign language avatars

WHY?

Deaf people experience serious difficulties in enjoying cultural content. They cannot use audio guides and require written information such as descriptions of art works. To tackle this issue, translation videos in sign language are produced all over the world, although this process entails high production costs linked with human persons in videos and results very time-consuming. More content in sign language, and thus more accessibility, can only be achieved if the translation process is accelerated and costs cut.

WHAT/HOW?

Sign Time developed SiMAX, a software for computer-assisted translation into sign language. Within the ARCHES project, the software is adapted to the special requirements of museums but can also be incorporated in apps which visitors can download on their smartphones. SiMAX can save translations and suggest them for similar texts. SiMAX is always operated by a person who knows sign language very well - a deaf translator - who checks the translation proposal and changes it if necessary. An animated computer figure (avatar) provides the final translation, showing emotions (as joy or surprise) and mocking grammatical facial expressions (i.e. an interrogative sentence is marked with raised eyebrows). The software does not work fully automatically, thus it is no substitute for human interpreters who interpret simultaneously, but it is a tool that is ultimately suitable for translating mass content very cost-effectively into sign language.

FOR WHOM?

During the ARCHES project, SiMAX has already been tested with artworks of several museums, like the Kunsthistorisches Museum in Vienna and the Victoria and Albert Museum in London. The software significantly decreases translation costs and can be used for a wide variety of applications besides accessible cultural heritage (i.e. websites, TV programmes etc.). In the future, SiMAX will also be available as cloud service for translation agencies.

PROJECT: ARCHES - 693229

FUNDED UNDER: H2020: REFLECTIVE-6-2015

RESOURCES: www.arches-project.eu | <https://giphy.com/simax> | <https://simax.media>

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Cultural heritage interactive map

A map journal tool for citizen engagement

Taking European citizens on a visual journey through European cultural heritage sights and initiatives from the comfort of their own home

WHY?

This tool was developed for the “European Year of Cultural Heritage” to respond to the absence of a harmonised repository of EU initiatives supporting the preservation of European Cultural Heritage. More than just an information source, the web tool serves as an outreach effort to increase the public’s involvement in their own cultural heritage. The tool seeks to depict the many layers of European cultural heritage in a consistent and harmonised way.

FOR WHOM?

The Cultural Heritage Interactive Map invites the general public, as well as cultural heritage experts, to browse cultural initiatives and events across Europe using interactive story maps online.

WHAT/HOW?

This map journal interactively showcases what the European Union and its partners are doing to protect, promote and raise awareness on cultural heritage in Europe. It combines panels with rich content - text, photos, illustrations, videos - and maps that can be queried by the user. Maps and stories are thus integrated to create a unique storytelling experience.

Users simply scroll down the journal to discover new sections around themes relevant to the preservation of cultural heritage in Europe. Each story map features easy-to-read content and enables users to zoom in and out as well as hover over map locations for additional information. As users navigate the site, they can instantly find the most important cultural heritage sites around them. Story maps also allow users to discover endangered cultural heritage sites, explore the Cultural Routes of the Council of Europe, learn about the DiscoverEU initiative and get inspired for a culturally rich Interrail trip.

PROJECT: Cultural Heritage Interactive Map

FUNDED UNDER: JRC

RESOURCES: <http://arcg.is/0TjSai>

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iMARECULTURE

Virtual reality applications for virtual underwater visits

Bringing the unreachable treasures of underwater archaeological sites to the surface through virtual experiences

WHY?

Underwater archaeological sites are widespread all over Europe and represent an incredible cultural heritage treasure still under-explored by the general public. Accessibility is one of the main issues, limiting public awareness and influencing dissemination strategies to the wider public. Digital technologies can provide valuable support to ensure an authentic experience for the visitors and encourage self-motivated learning.

WHAT/HOW?

Virtual reality applications developed by the iMARECULTURE project can now facilitate virtual underwater visits as well as enhance actual dives in archaeological sites. Virtual and augmented reality applications have been developed and tested by the iMARECULTURE project to provide advanced, immersive and personalised experiences to be used at home, in-situ or at a museum. Based on existing 3D data, three sites have been carefully selected for the VR/AR interactive virtual underwater visits, such are Mazotos shipwreck, Baiae archaeological site and Xlendi shipwreck. The visualisations provide visitors an interactive and enhanced experience of diving into an unreachable underwater site, while offering additional information through storytelling about the artefacts displayed. Moreover, more advanced immersive technologies will be tested in Thalassa museum (CY), a partner of the iMARECULTURE project.

FOR WHOM?

The market is showing increased interest in VR applications in the underwater environment since it is exciting and difficult to reach. Demand for VR educational content is expected to increase as VR devices become more affordable. Synergies between virtual and traditional museums and cultural institutions will support the economic sustainability of such actions.

PROJECT: iMARECULTURE - 727153

FUNDED UNDER: H2020: CULT-COOP-08-2016

RESOURCES: www.imareculture.eu | [@imareculture](https://twitter.com/imareculture)

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ITN-DHC / ViMM

Augmented and virtual reality technologies for digital cultural heritage

Improving the authenticity of virtual and augmented reality in the cultural heritage experience

WHY?

There is a need for a more holistic approach to the e-documentation of the past to “tell the whole story”. A holistic approach reveals how the reconstruction was conducted and why each part has its dimensions, materials, actual colour and artistic outlook, especially when elements of intangible heritage are incorporated into virtual reconstructions, such as in Historic Buildings Information Modelling (HBIM) systems.

WHAT/HOW?

The approach increases the scientific, economic and social potential of advanced services to users, which capture, reconstruct, model, archive, and enable use, reuse and dissemination of cultural heritage content. Augmented and virtual reality are used widely in the cultural heritage domain to present monuments and objects (reconstructed and otherwise) to the users, but it is still evident that many users think the things that they are looking at are not real. Future applications will provide the best quality possible so that the users will not be able to tell the real objects from the augmented ones.

As a step forward, two EU projects have showcased state-of-the-art technology combined with novel experimental apps involving high quality dense matching photogrammetry, novel reverse engineering processes from created point clouds, morphological and holistic reconstruction of monuments, single image 3D reconstructions (camera alignments), 3D real-time implementation to mobile devices using AR, IVR (immersive VR) and VR implementation to mobile devices showcasing 4D cityscapes and sites.

FOR WHOM?

These applications have involved the city of Calw in Baden Wurttemberg (Germany), the Panagia of Asinou church in Cyprus, the ancient site of the Roman legionary fortress of Carnuntum in Lower Austria and a museum and cultural and educational centre in Thessaloniki (Greece).

PROJECT: ITN-DCH/VIMM - 608013/727107

FUNDED UNDER: FP7-PEOPLE-2013-ITN / H2020:CULT-COOP-08-2016

RESOURCES: <https://www.vi-mm.eu/case-studies/> - @ViMMuseum

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meSch

A digital platform for creating smart objects and spaces linked to physical visiting experiences

Bridging the gap between the material and the digital with personalised content for cultural heritage visitors

WHY?

Cultural heritage continuously seeks to engage visitors via digital means in novel ways, but screen-based interactions are not new. Screens also capture visitors' attention to the detriment of the experience and the appreciation for the collection. In contrast, the meSch project's installations use smart objects and intelligent spaces to bridge the gap between the material and the digital and deliver curated and personalised digital content as part of the physical visiting experience.

WHAT/HOW?

With meSch, cultural heritage organisations and professionals can easily create smart objects and spaces for novel interactive experiences. The platform is composed by a browser-based editor to upload content and define the visitors' interactions, and a set of smart blocks (sensors, actuators, and small computing units) to compose the smart setting the visitor interacts with. The use of Cloud Computing (for the online editor) and the Internet of Things (for the physical smart components) allows to edit the content and instantaneously deploy it. The visitors' experience on-site continues online via personalised and recommended content created using the data from the visit. meSch enables cultural heritage institutions to independently create personally meaningful experiences for the visitor.

FOR WHOM?

meSch targets cultural heritage professionals - curators and exhibition designers - for the benefit of their visitors. It allows professionals to quickly prototype and deploy interactive installations that engage both the senses and the imagination. Over 40 professionals and 20.000 visitors have tried the meSch technology in hands-on events organised by the meSch team. The system has already attracted interest from cultural and tourism organisations.

PROJECT: meSch - 600851

FUNDED UNDER: FP7-ICT-2011-9

RESOURCES: www.mesch-project.eu

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PLUGGY

A software platform and smartphone tool to bring out and share local cultural heritage

Creating, modifying and safeguarding heritage with the help of virtual heritage communities

WHY?

The Faro Convention (2005), emphasised the role of cultural heritage as an asset and a responsibility for all, fostering greater democratic participative actions with concern for the local communities and the everyday life. Currently, there is a shortcoming in ICT tools for enabling people to bring out their local cultural heritage. The existing applications and repositories target a more professional audience, whereas social platforms may offer potential to build networks, but they have still been little exploited for cultural heritage.

WHAT/HOW?

The PLUGGY project is working to develop an innovative social platform and a suite of smartphone tools that will enable individuals, community groups, industry, museums and countries to document and share their heritage online. The PLUGGY software platform will facilitate a continuing process for creating, modifying and safeguarding heritage, helping to build new virtual heritage communities.

FOR WHOM?

Content will be either uploaded by end-users or derived from digital collections such as museums, archives and cultural institutions, allowing users to create links between seemingly unrelated facts, events, people and digitised collections, leading to new approaches of presenting cultural resources, and new ways of experiencing them. Moreover, four PLUGGY derived applications will be developed and released to demonstrate the potential of the PLUGGY software platform.

Both the PLUGGY software platform and the four applications (augmented reality, geolocation, 3D sonic narratives and collaborative games) will be released as technological tools made freely available under open source licenses and, as such, applications will remain free for any external organisation or developer to use and modify them.

PROJECT: PLUGGY - 726765

FUNDED UNDER: H2020: CULT-COOP-08-2016

RESOURCES: www.pluggy-project.eu | @Pluggy_Eu