Manual of good practices
for creative applications
allowing reuse of cultural resources

GIS in eCultureMap

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1. EXECUTIVE SUMMARY

This manual is a result of the AthenaPlus (Access to cultural heritage networks for Europeana) project funded under the European Commission ICT Policy Support Programme part of the Competitiveness and Innovation Framework Programme.

Five creative applications have been developed in the framework of the AthenaPlus project. Among them are:
- **MOVIO** – the software for virtual exhibitions creation;
- **City Quest** – the software that supports tourists in discovering city attractions but not only.
- **School Trip** has been created to support teachers and students in planning visits to a number of places.
- **GIS in eCultureMap** become the more and more used software which helps to locate quickly the places on a map.
- **Urban Explore** is a tool which gives opportunities to present stories related to a number of places users wish to discover.

All of the applications have been tested by the project partners, who also conducted a number of workshops involving vary communities in order to help the developers to find the bugs, improve functionality and to customize the applications according to the needs.

Each application has been translated to the partners languages to avoid problems with understanding English version of the software during the testing phase.

In this part we present **GIS in eCultureMap** as the software which helps to locate quickly the places on a map.

The main goal of this manual is to present and promote creative applications and support the users with an instruction how to implement the software in the cultural domains.

In this manual also additional literature, and addresses of help-desks are listed.

Finally there is attached an instruction of fair use of the applications offered to the communities for free.

2.   THE ATHENAPLUS CREATIVE APPLICATIONS - GIS IN E-CULTUREMAP

eCultureMap
Link to Europeana Knowledge
What is where?

The eCultureMap has been developed by AthenaPlus partner IPCHS from Slovenia – to demonstrate the use and re-use of Europeana, AthenaPlus and other digital cultural heritage content, when browsing the content geographically. Currently the map has three main uses: a) a user may find out what cultural content is present on a certain location, b) s/he can plan a cultural route or c) upload own content.

3.   THE USE OF CREATIVE APPLICATIONS: A STEP BY STEP MANUAL

In this part of the Manual the user can find a condense instruction of how to proceed with the applications to get success. Those interested in using any of the creative applications should start with making decision about hardware and software selection. When this choice has been made one can follow with an implementation guidance. In this part each application is described in a special paragraph where detailed, step by step instructions are given

a.   Software and hardware requirements

This application can be used on any device capable of displaying HTTP web pages.

b.   Creating your project step by step

In this paragraph we present instructions on implementaton of the GIS in eCultureMap.

Instruction begins with information on how to start. Then the particular functions of each application are presented, and finally an advice where to find further information and support are given.
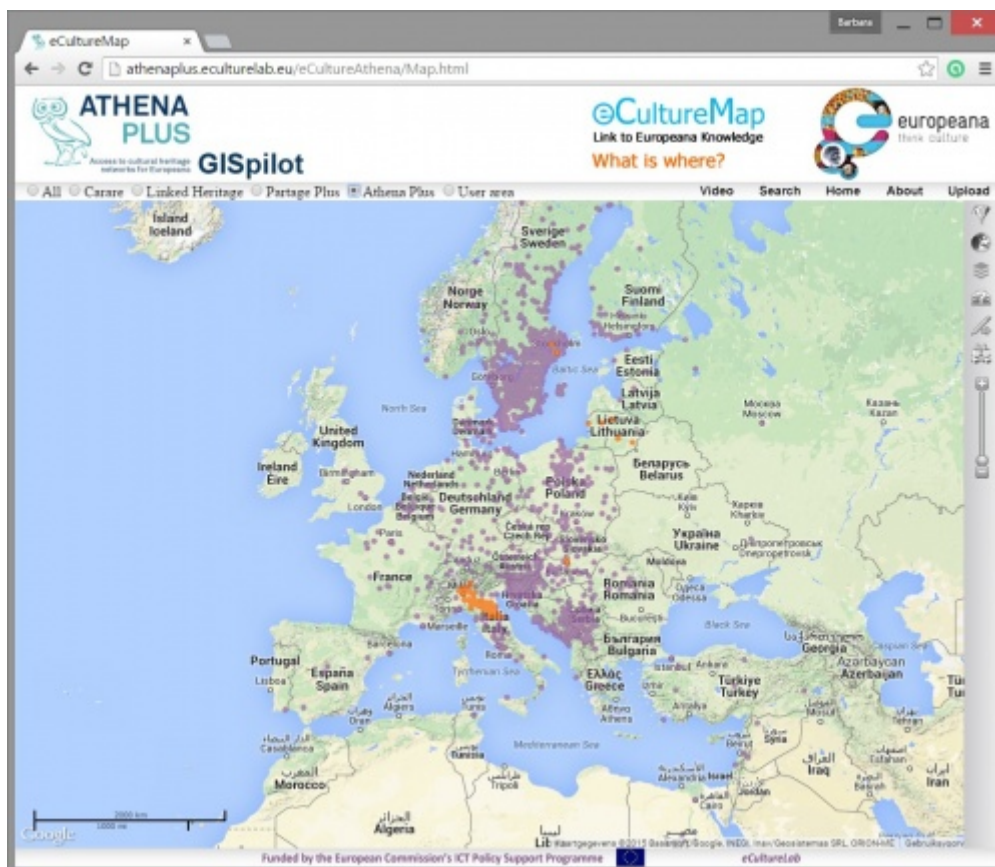
GIS in eCultureMap

The eCultureMap has been developed to demonstrate the use and re-use of Europeana, AthenaPlus and other digital cultural heritage content, when browsing the content geographically. Currently the map has three main uses: a user may find out what cultural content is present on a certain location, s/he can plan a cultural route or upload own content. A GIS Pilot action resulting in use cases and an application has also been realised.

GIS in eCultureMap application has been described in details with examples and links to instructions at the site http://wiki.athenaplus.eu/index.php/ECultureMap. It is also available on YouTube. Here you can find the Link to a short video explaining some of the features of the eCultureMap.

eCultureMap getting started

Basic information on the eCultureMap can be found at Getting started page.
The map is available at http://athenaplus.eculturelab.eu/

eCultureMap manual

The manual pages describe three main use cases of the eCultureMap, plus some specific functionalities:
1. Locating the content
2. Planning a cultural route
3. Uploading user's own content
4. Map functionalities

Locating the content

The cultural content linked to a certain location is represented by the dots on the eCultureMap. These dots are either orange or purple. An orange dot presents content with a spatial accuracy below 5-10 meters in the real world. Such accuracy is appropriate for spatial navigation. Purple dots present content with spatial accuracy above 10 meters.
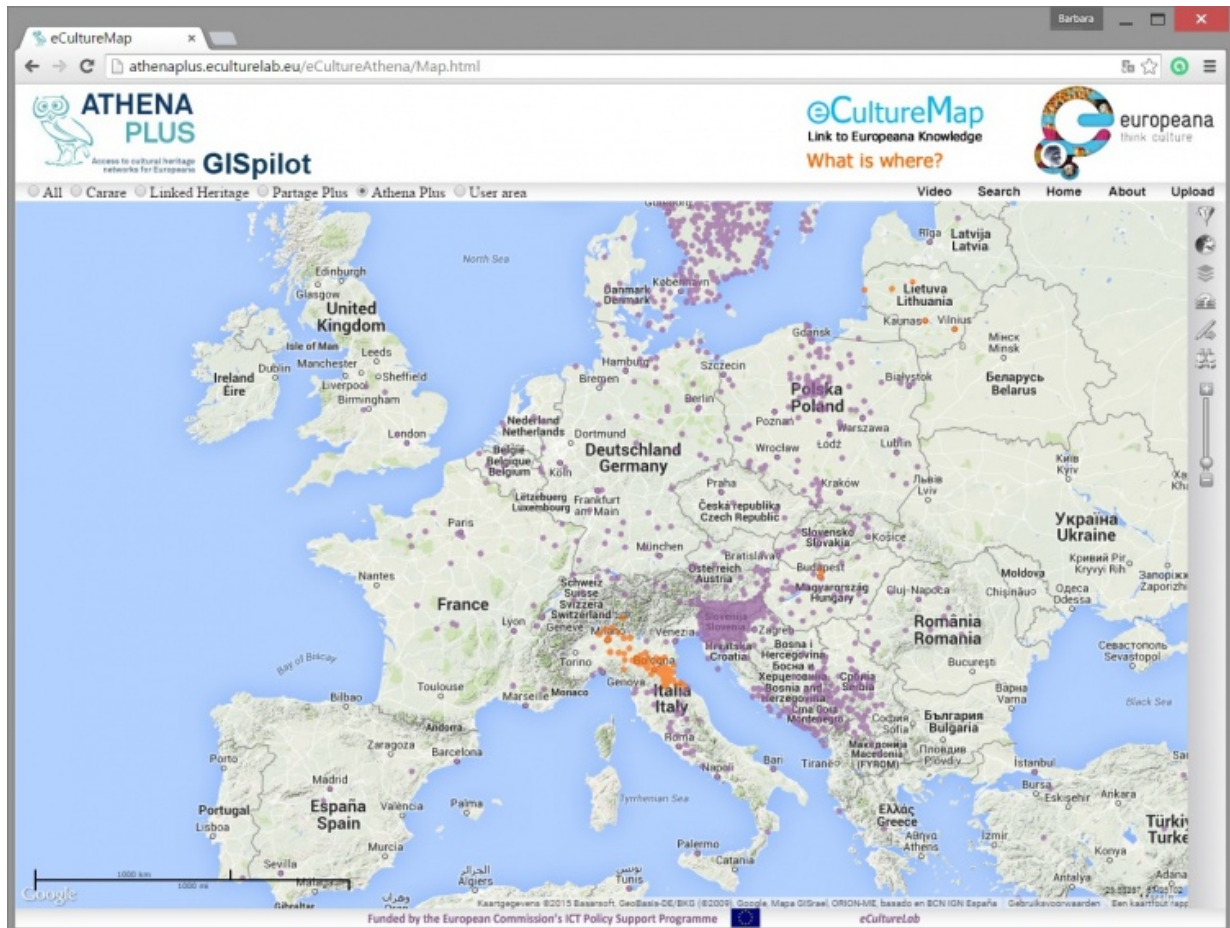
In the example below, we see cultural content in the city of Bologna. When you click on one of the icons, a popup window will appear. It displays the cultural contents that can be found on the specific location, with a thumbnail and the title of the object underneath it. In the example below, we clicked on the orange M-icon:
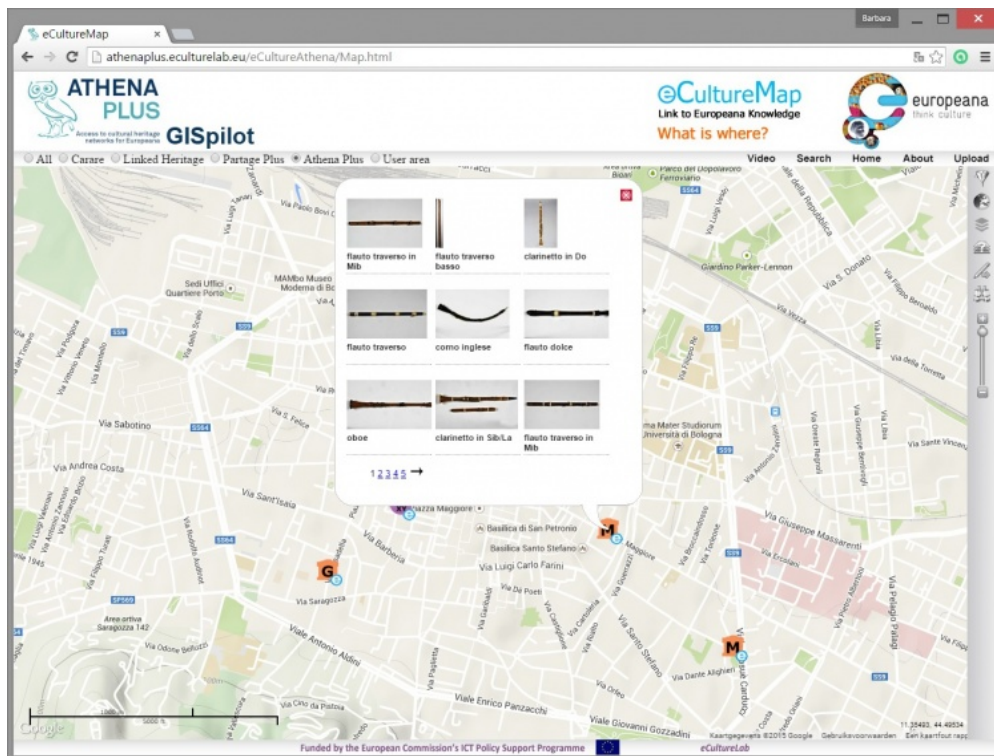
Clicking on one of the displayed thumbnails will open up a new browser tab and guide you to the item's detailed page on Europeana.

Plan a cultural route

The route planning tool allows the user of the map to display the cultural content he/she may find along a particular route of interest. The identified content is eventually displayed based upon the drawing of your itinerary onto the map.

Drawing your route
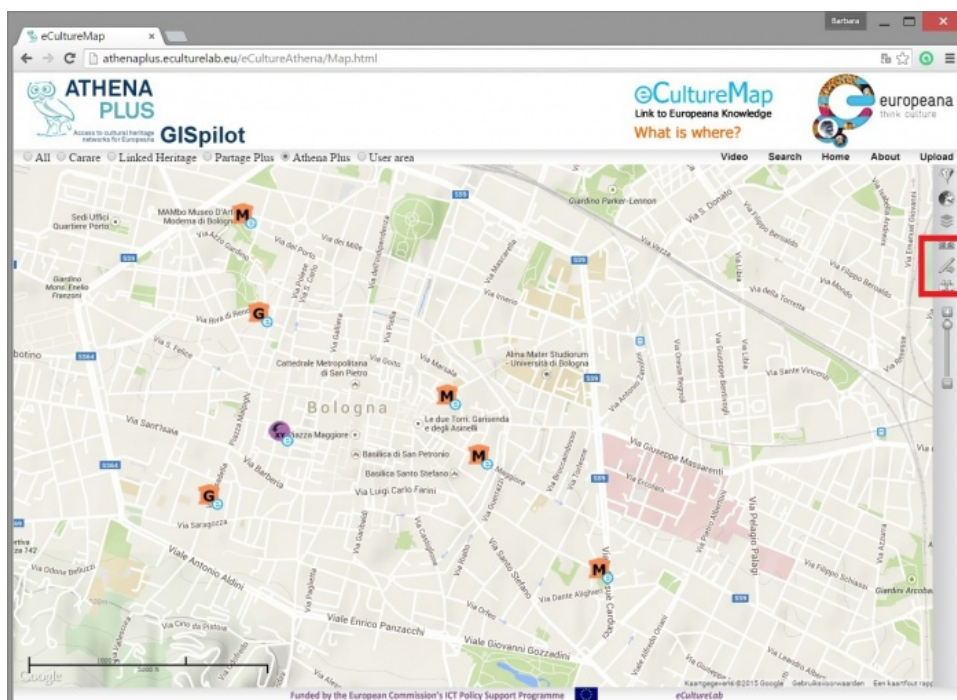
When you've zoomed onto the place you want to start your itinerary from, you have to activate the pen through the drawing icon (see red framed icon to the right of the illustration above). After clicking, the icon will turn a darker colour and the pointer of your mouse will look like a yellow dot.

Start drawing your itinerary by pointing the yellow dot to your starting place, and left-click once to start drawing. Click, hold and release to make one line and connect different turns in your walk. In the end, you will end up with e.g. a route that may look like the picture below:
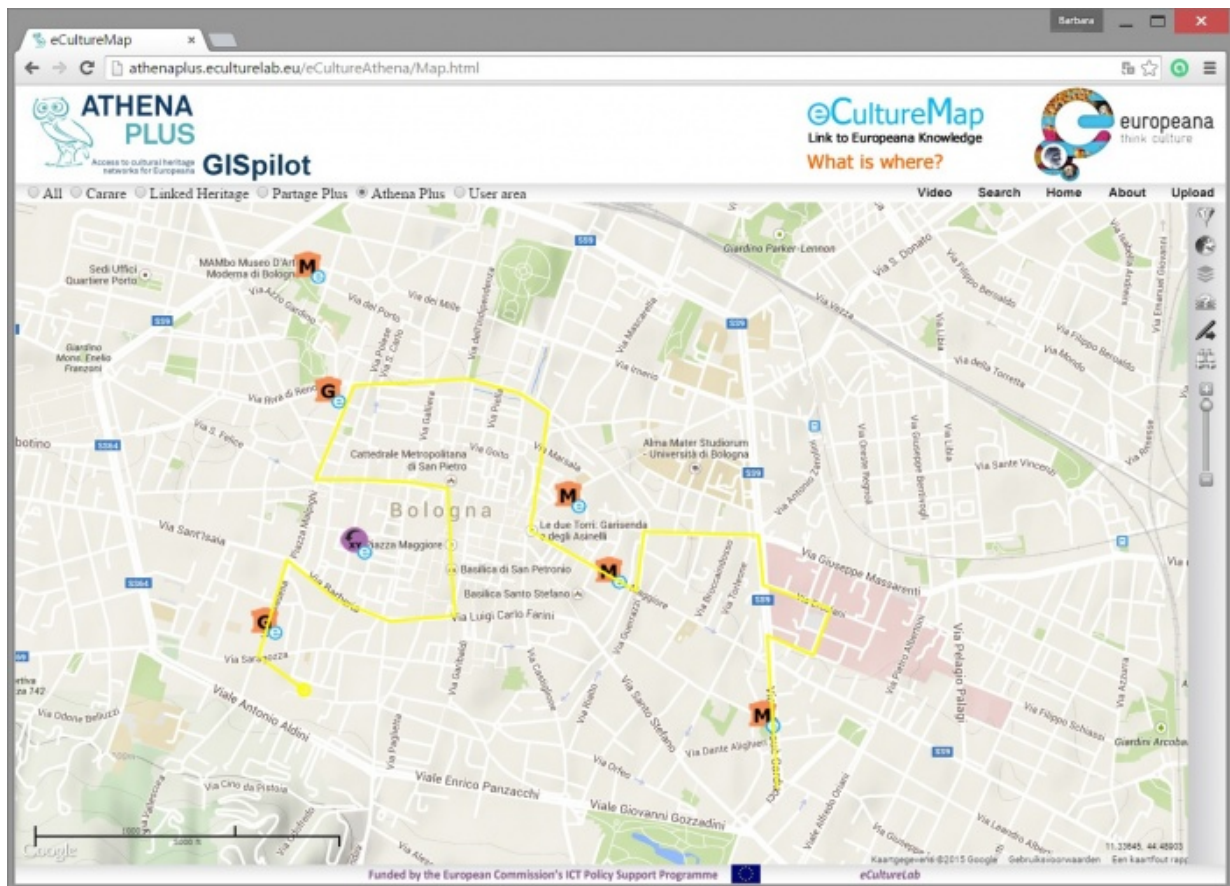
To stop drawing, double click with the left mouse button. Your line will now be saved onto the map, and a new browser tab will open automatically (see next paragraph).

Rendering the items on the route
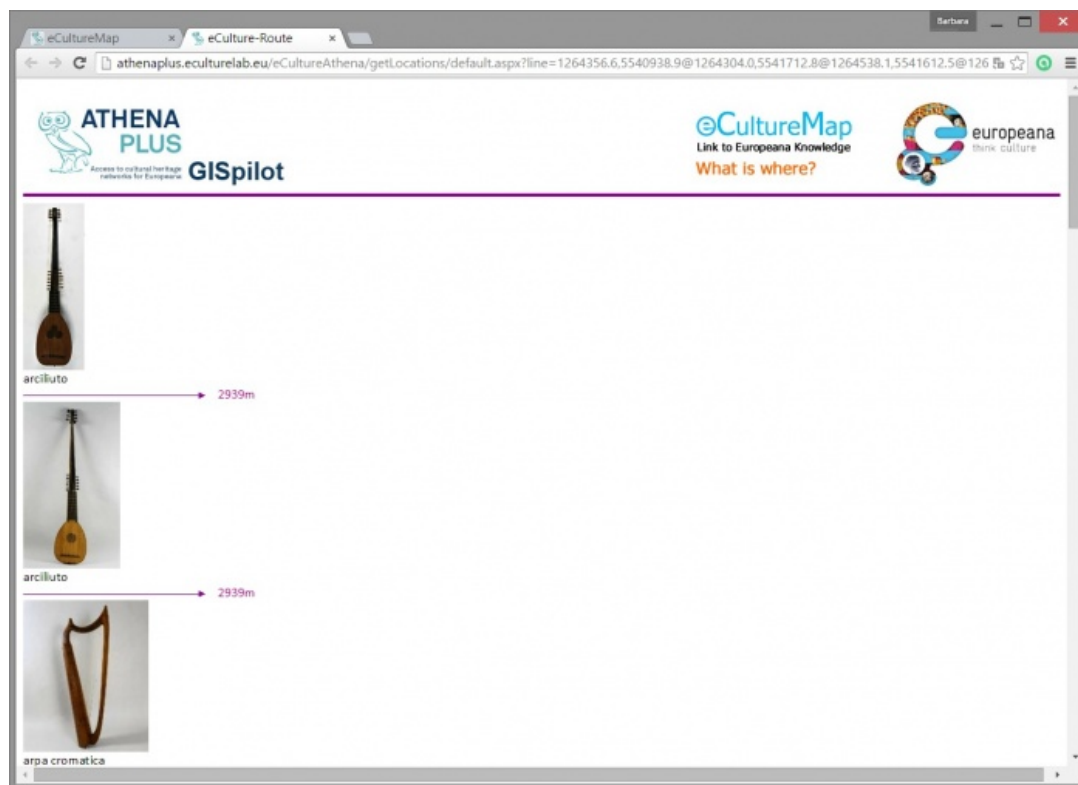
In the example above, we see a browser window with two open tabs. The first one is the eCultureMap, the second one is the overview of items we would pass in proximity when we would follow the route that we have just marked/designed on the map. In this example, we get to see some musical instruments in an indicated proximity of 2.939 meter. This distance refers to the distance how far you should travel on your pathway from the starting point to the object you discovered.

The actual route link of the pathway in this example can be traced by clicking here.

The route planning tool offer users to gather and save the information (texts, images, 3D models) on cultural content in a 20 meters radius around the selected location. The use is especially recommended for mobile tablet and use in real time when travelling by bus, car or on foot.

The route planning functionality enables displaying cultural content along the route digitized by a user. The application generates a list of all cultural content along the clicked path with distances, title and image. Each item is linked to a detail information on a content provider site or/and downloadable actual content (3D model, article, etc.)

Upload the user's own content

The AthenaPlus GIS tool enables uploading the file with data in Excell format. Uploaded data are processed and displayed on the map underneath. In order to start the upload of your own content, use the following link to access the map:
 http://athenaplus.eculturelab.eu/GISpilot_2_0/
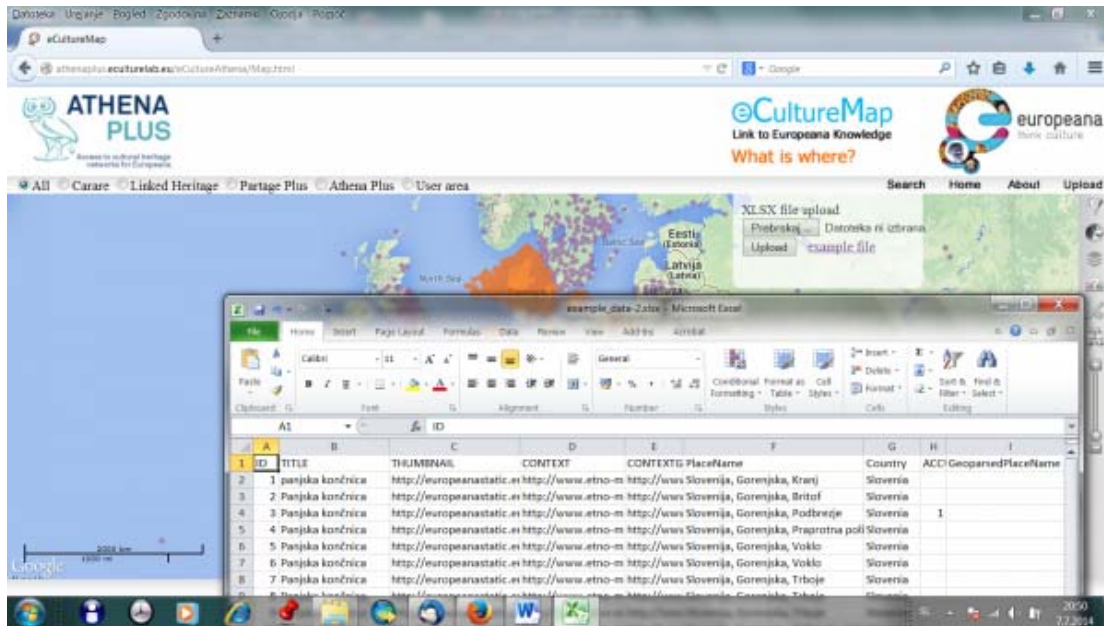
Editing data in the user area

By clicking on the button 'User area' (top right corner), you are redirected to a login page.
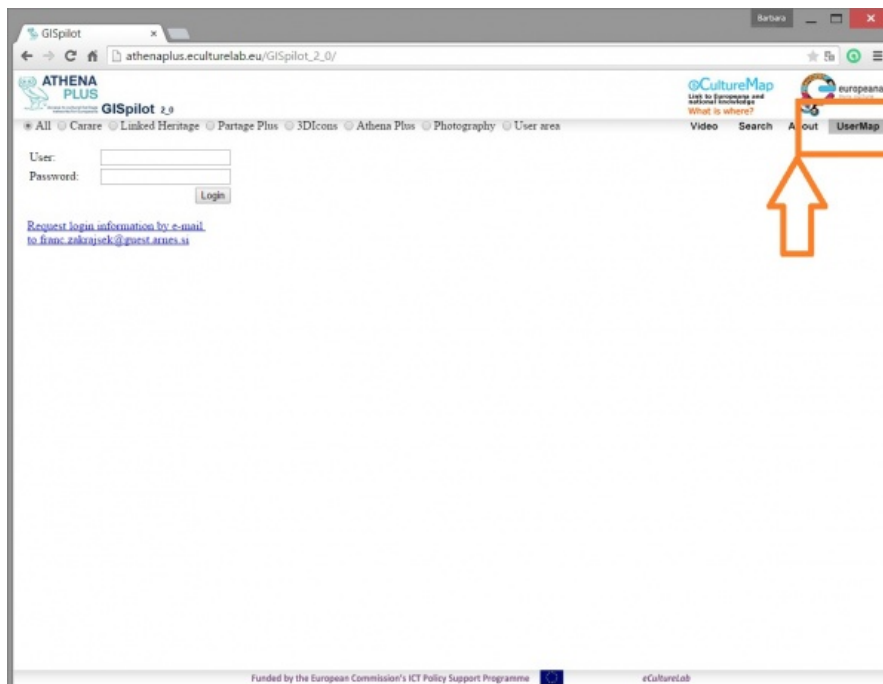
Select from the 'Collection' drop down menu the collection you wish edit. The 'Show/refresh data' button next to the menu will refresh the data in the table below after you have done

- editing of the existing data;
- an upload of new data.

The 'Unique locations' check box will - if you have marked it - only show records that contain a unique 'PlaceName' (= third column in overview table below).

Upload file/data

Click on a the 'Browse/Choose file' button and select a new .xlsx file to upload. Your file will be uploaded when you click the 'Upload' button.

Automatically the 'Collection name' will be taken from the file name (make sure before uploading that you give your file a meaningful title in order to keep good overview in the eCultureMap back end). If a collection with the same name already exists in the back end, it will be overwritten. To display a collection in the drop down menu, click the 'Show/refresh data' button again.

The button 'Download' (to the right of the uploaded file) allows to download any selected collection of data as an .xlsx file.

Geoparsing actions

With this tool, you can geoparse placenames that are listed in the selected collection. The geoparsing process may take up to several minutes depending on the number of unique place names listed in your collection.

Next to the 'Geoparse' button, there is a URL pointing to 'GeoparsingGraph'. Clicking it will render a graph visualisation of your geoparsing result, which may look like the screen below:

At the far right, you will see a link to 'Example xlsx file'. Clicking this downloads an example .xlsx file to help you prepare your own .xlsx for uploading and editing in the tool.

Anyone can register for an account on the eCultureMap tool - content provider, curator,... Anyone can upload links to their digital collection. Users should prepare a simple .xls file with the following data:

- object name
- link to thumbnail
- link to local/national context
- link to global context (e.g. Europeana, if available)
- geographical place name or geographical coordinates.

If geographical coordinates are not available, the geoparser web service will automatically determine them from the geographical place name. The detailed description of the requirements for a well formed input .xls file could be found in the example file downloadable from the tool.
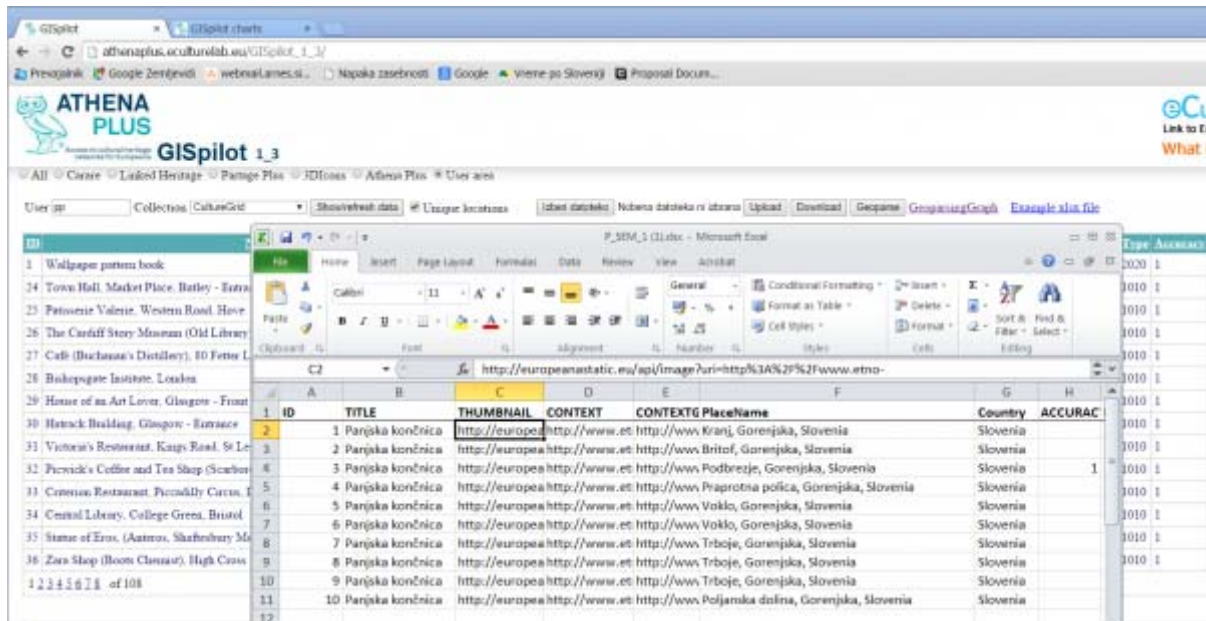
Editing the table

In the fourth column of the collection table, you will see a square button marked 'M'. If you click the button, you switch to a map view. You will be able to zoom in on the selected record and enable:

- editing the properties of this record;
- changing its location.

Each column can be sorted by clicking on its name in a header. A new page can be accessed by selecting a page number or pressing the arrow key.

The records are edited with the 'Lightning' icon on the map

A popup opens, and the user can edit remarks, accuracy, type of the record (archaeological heritage, built heritage, library item,...).

If the user clicks the checkbox to update all records with the same PlaceName, then all records having the same PlaceName in the table are updated with these same updates.

By clicking the 'Submit' button the record(s) are updated and displayed in the table. The user can change the view back to table view (original) by clicking on 'UserArea' - see top of page where you can also select between the different content collections available ('UserArea' is the button most to the right).
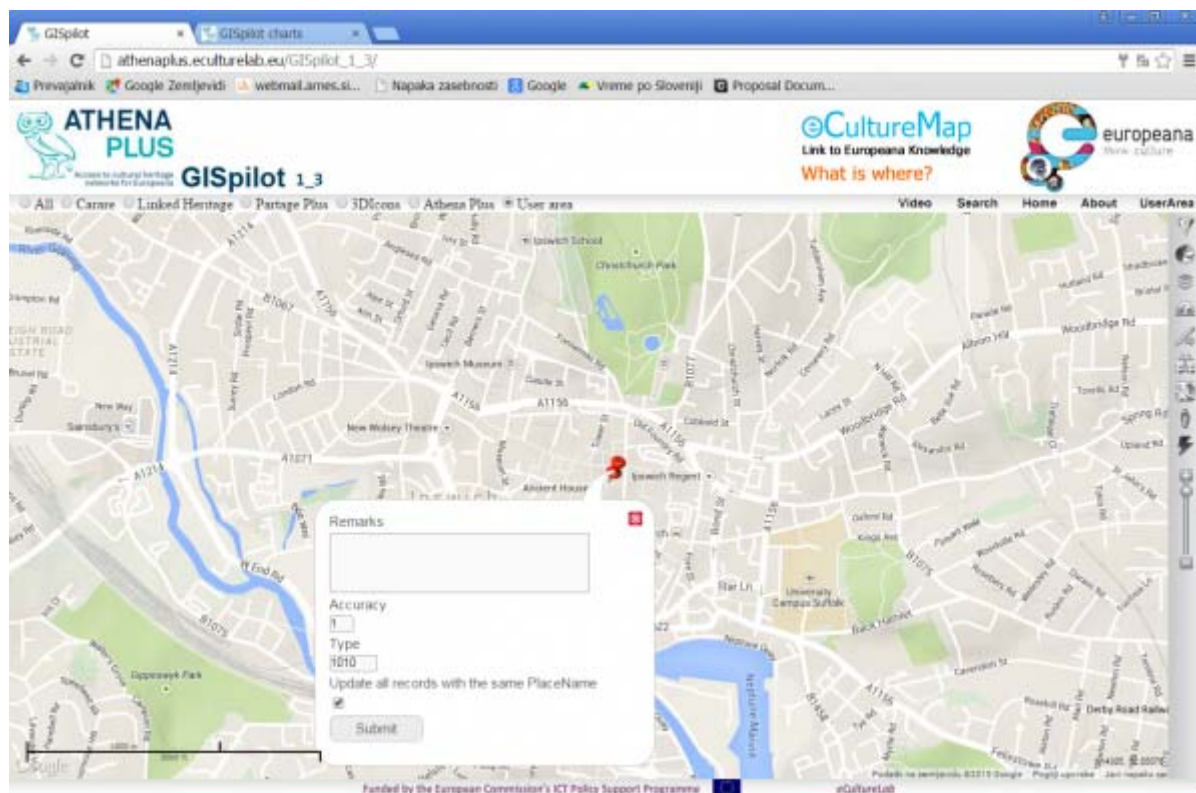
Map functionalities

Beside the usability described in the current use cases, the map itself has several functionalities:

- Basic interactive map functions (zoom to all, zoom-in, zoom-out, pan)
- Switching the basemap layer (available: Google Physical, Open Street Map, Google Satellite, Google Streets, Google Hybrid)
- The user can use a filter tool to reduce the number of digital objects displayed on the map. Because of the different languages of meta data, the automatic translation from English to native languages is provided in the background by using Microsoft Translator V2 API (e.g. filter by "castle" displays heritage containing word "château", "Schloss," "slot", "castello" in the title)
- The search tool performs searching by free text among map content and presents the location of the selected object on the map - "Where is what?". The search tool is performed by Europeana search API 2.0

Incorporating the eCultureMap to your website

The use of the eCultureMap is free for all. It is possible to embed the map or some specific features on a potential user channels or platforms. More information about this topic can be found at the incorporation tutorial page .

Anyone can register to use the full functionality of the eCultureMap and obtain login information from Franc Zakrajsek.

AthenaPlus GIS Pilot

The eCultureMap has been the subject of a pilot action in the framework of the AthenaPlus project. Several powerful features have been developed, illustrated by a couple of use cases. The link to the actual pilot implementation of the eCultureMap is available at http://athenaplus.eculturelab.eu/GISpilot_2_0/ .

The pilot action created the following results:

- eCultureMap connected with Google Street View
- Powerful refine search among items on a certain location
- Three use cases:
    - Van Wittel vedutes
    - Geocoding historical photographs
    - Architectural heritage
- eCultureMap augmented reality mobile application: it's possible to browse over two million cultural objects from the eCultureMap on mobile device. The application is free for download (Android only).
- AthenaPlus GIS Pilot APIs: two additional APIs are available for web developers of cultural heritage related portals. The API enables the reuse of eCultureMap data and can be embeded into any webpage and/or mobile application.

4.   HELP-DESK

If you would like to make a suggestion, report any problem or obtain additional information, you can address your questions to the developers with the following forms:

eCultureMap	https://docs.google.com/a/i2cat.net/forms/d/1Nf5K-vTJJng8UWq7AXAMPqTU5nbFl7afHWCfWz7noQ4/viewform

Don't forget to add a contact email to your comment so that we can reach you!

5.   FAIR USE AND BENEFICIARY OBLIGATIONS

Several of the creative applications prepared in the framework of the AthenaPlus project are available for free use as based on the open source. Therefore the interested institutions are welcome to use the created software just for a simply use for their needs or also for further development. In the case of development and improvement of the software they are obliged to offer access to this new release on the same conditions i.e. for free.

Each institution interested in the software use is expected to sign a short form of cooperation to let the developers know how good and popular their product has been. In a case of any bugs or disfunction such partnership agreement can also be used for communication and possible improvement.

6.   ACKNOWLEDGMENTS

This manual is based on the creative applications developers instructions, and include materials from printed articles, leaflets, and the project blog. Apart Franc Zakrajsek, the main authors of instruction to this creative application, we thank to the project coordinators Maria Teresa Natale, Rosella Caffo and Simonetta Buttò who inspired and managed the entire process.

APPENDIX 1. GUIDELINES FOR INVOLVING USERS IN THE DESIGN OF YOUR PILOT

Innovation is a very important asset for organisations. However, innovation driven only by technological push has a market risk. Companies may find themselves in a situation where they have a promising engineered innovation in their hands while users will ignore it, because it was designed and marketed out of the user experience. Hence, it is essential to reach out to external stakeholders, and organise actions in which we can hear their opinions and suggestions.

One proven and tested way to solve the gap between technology and society is to involve the prospective users into the process of developing these innovations. The involvement of users on innovation research ensures that the products and services have not only a "user touch" but also a user point of view and the user experiences included. Including users as participants, co-creators, co-designers, first usability evaluators and other roles on the innovation projects diminishes the risk of project failure and increases the probabilities of a successful technology.

To this end, the purpose of this document is to provide pilot partners with a set of recommendations to assist them in organizing sessions in which the external users' feedback, both professionals and prospective visitors, can be generated and collected.

Before the session...

Strategies to launch sessions with users

The main point for you to consider is to seek synergies with your own activities, so that you can add a "Get to know our project" session at some convenient point. Here's a set of things you can do:

End users

- Schools and high schools visiting your institution are a great opportunity. Before the visit, discuss with the teacher the possibility of using some time to present your project to the students and the teachers, and have them fill a feedback questionnaire afterwards.

- Organise a session to present your project at a local library or community center.

- If you have an open museum day (i.e. in Barcelona many museums have free entrance every Sunday after 3pm), you can consider setting up a small stand in a corner. This stand would have some promotional posters, a few computers in which the interested visitors can check out your creative project, and a staff member answering questions and making sure that each visitor who has accessed the creative project fills in a questionnaire.

Professionals

- For large institutions, you can organise a training session with the creative tools with participants from other departments.
- Organisations which have a budget to organise training workshops are strongly encouraged to administer the questionnaires and/or the interview guide to the workshop's participants, either as a paper form at the end of the session or via an online form a few days after.
- You can also organise a dedicated creative tools training session for the local professional associations (this is especially indicated for those organisations interested in the education and tourism sectors).

Tips for recruiting users

Here are a few tips to recruit users:

- Communicate with the prospective participants through your usual channels. If you have a monthly newsletter, announce that you will be holding a session to present your project. If you have a website or presence in social media, run a short newspiece on it.
- If you'll be offering some refreshments, do not fail to mention this fact in the recruitment communication: believe it or not, it does make a difference ;)
- To manage the registration of participants, you can use a free event planning tool such as www.eventbrite.com
- In cases in which you recruit the participants individually (that is, not as part as an organisation such as a school or a professional association), you may expect as many as half of the registered participants to not show up.

During the session...

The realisation of a user involvement action integrates, generally, a six-step process:

1. Welcoming
2. Presenting the activity
3. Preparation for the activity
4. Core activity
5. Feedback collection
6. Thanking, rewarding and closing

The core activity of the session may be different depending on whether the participants are end users or professional users:

- In the case of sessions with professionals, the core activity will be a short training session, in which the workshop leader shows the promotional material available on the creative tool, goes over some examples of projects created with the tool (so that attendees learn about the possibilities of the tool), and gives some basic ideas on how to work with the backend.
- In sessions with end users, the core activity will be promotion and dissemination, in which the staff member running the event tries to get visitors to access the creative project and provide their feedback afterwards.

General principles for user involvement

During the preparation and coordination of user involvement actions, the project partners will keep in mind general principles such as:

- Users are helping you. They have no obligation to you or your research in spite of their potential interest in your technologies.
- Ask them if they would like to be involved in this research and commit them to give insights.
- Remember them that the research takes some time and effort both for them and you as a researcher.
- Remember that they are very generous to assist to your activities and to give you their time.
- Treat them very respectfully.
- Be patient with their ignorance of the technology that they are exploring.
- Facilitate their participation.
- Make the event a good experience to them.
- Thank them for everything.
- Share some photos with them as a souvenir of the activity to share with others (and the odds to come back next time will increase)

Tips for running sessions with users

- The main gold rules to be considered when preparing user involvement activities are:
- Activities have to be prepared in a positive and non-stressful mood for everybody, including the researchers.
- First at all, be sure that technology is really working and ready to be used for the users. Don't make users wait for technical preparations. When they arrive, everything should be ready to be tested or displayed. Respect their time.
- Don't forget items for registering data on the event (photo camera, notebooks, etc).
- Don't forget any printed questionnaire you consider necessary to use and enough copies and pen/pencils for each user.
- Foresee any additional material you'll need such as promotional material, markers, etc.
- It is much recommended to have an assistant researcher to help you making pictures; observing and interviewing the users as you'll do run the workshop.

After the session...

After the session, it's time to collect the feedback and report the event. Generating feedback on the participants' experience is what gives you the ability to adapt to their recommendations and make use of their suggestions.

Collecting the feedback

Several feedback collection tools, ready to use, were included in D6.1 of the AthenaPlus project, which you can access here. These comprise end user questionnaires, professional questionnaires, interview guides, etc.

Pilots are encouraged to adapt these to their contexts, for example by:

- Translating the questionnaires to their local language
- Adding, removing or rewording questions if needed
- Changing graphical elements (i.e. adding the pilot institution's logo)

An online version of the questionnaires can also be easily created with Google Forms, which sometimes helps in administering the questionnaire after the event and analysing the results.

APPENDIX 2. RECOMMENDED LITERATURE

Ciurea Cristian, Dumitrescu Gabriela, *Developing Virtual Exhibitions on Mobile Devices for the Educational Sector,* Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p. 144-149

Ciurea Cristian, Filip Florin Gheorghe, *Multi-Criteria Analysis in Choosing IT&C Platforms for Creative Digital Works*, Uncommon Culture: Creative Digital 2015, vol. 6, no. 2 p.21-27

Dierickx Barbara, Julien Brouillard, Claire Loucopoulos (2013). *Report on existing tools and devices related to narrative approaches and requirement functionalities.* http://athenaplus.eu/getFile.php?id=178

Digital storytelling and cultural heritage: stakes and opportunities, edited by AthenaPlus WP5 "Creative applications for the reuse of cultural resources"; texts by Julien Brouillard & Claire Loucopoulos, Dédale (France), Barbara Dierickx, Packed available for free download at http://athenaplus.eu/index.php?en/169/publications

Dziekan Vince (2012). *Virtuality and the Art of Exhibition. Curatorial Design for the Multimedial Museum*. Chicago, 207 p.

Habibi Minelli Sam, Natale Maria Teresa, Dierickx Barbara, Ongaro Paolo, Ugoletti Daniele, Saccoccio Rubino, Aguilar Santiago Marc, *"MOVIO: A semantic content management and valorization approach for archives and cultural institutions,"* *Girona 2014: Arxius i Indústries Culturals*, 2014, Available at: http://www.girona.cat/web/ica2014/ponents/textos/id234.pdf

Hagedorn-Saupe Monika, Peukert Arlene, *New Ways of Presenting the Past | Work, Research, and Findings of the International Digital Exhibitions Working Group,* Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p. 37-42

Handbook on virtual exhibitions and virtual performances – version 1.0, August 2012, MIBAC and INDICATE.

Hearn Gregory, Bridgstock Ruth, Goldsmith Ben, Rodgers Jess, *Creative Work Beyond the Creative Industries: Innovation, Employment and Education Creative Digital*, Edward Elgar Publishing, London, 2014.

Katona Júlia, *Structuring and Visualising Information in Digital Story-Telling Applications. Use of Two ICT Tools in Hungarian Museums: MOVIO and HOMM,* Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p. 132-137

Meštrović Iva, *Digital and Virtual Exhibitions – A Glance at the Situation in Croatia,* Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p.114 - 119

Metadata for the description of digital exhibitions: the DEMES Element Set Version 0.9 (August 2015) available for free download at http://athenaplus.eu/index.php?en/169/publications

Mukienė Danutė, *Virtual Exhibitions of Lithuanian Museums,* Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p. 138-143

Museums' Experiences in Creating Cultural Narrations Using the AthenaPlus Tool Called MOVIO, Authors: Sam Habibi Minelli, Iva Meštrović, Petra Milovac, Orsolya Veress, Donatas Snarskis, Jovita Vilimaitiene, Linnéa Karlberg Lundin, Karin Glasemann, Piot Kożurno, Marek Wieczorek, Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p. 67-87

Natale Maria Teresa, Habibi Minelli Sam, Dierickx Barbara, Aguilar Santiago Marc, *Innovative approaches for narrating tangible and intangible cultural heritage: the AthenaPlus creative tools.* Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p.20 - 36

Natale Maria Teresa, Habibi Minelli Sam, Dierickx Barbara, Ongaro Paolo, Piccininno Marzia, Ugoletti Daniele, Saccoccio Rubino, Raggioli Alberto, *Exhibiting Intangible Cultural Heritage using MOVIO: a multilingual toolkit for creating curated digital exhibitions, made available by the AthenaPlus project,* ICOM 2014 - Access and Understanding – Networking in the Digital Era: Intangible Cultural Heritage, 2014, available at: www.cidoc2014.de/images/sampledata/cidoc/papers/H-2_Natale_Minelli_et-al_paper.pdf

Schweibenz Werner (2012). *How to create the worst online exhibition possible - in the best of intention.* http://swop.bsz-bw.de/volltexte/2012/1064/

Towse Ruth, Handke Christina, (Eds.). *Handbook on the Digital Creative Economy.* Edward Elgar Publishing, USA, 2013

Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 available at: http://uncommonculture.org/ojs/index.php/UC/issue/view/459/showToc

Van Eyck Griet, *Leonardo da Vinci's Last Supper in Belgium: Traces of Humanism Preserved in a Once Flourishing Abbey*, Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1, p. 98 - 105

Vassallo Valentina, Hermon Sorin, *Creative Re-use of Data: a GIS Tool to Trace the Provenance of Cypriot Cultural Heritage*, Uncommon Culture: Creative Digital 2015, vol. 6, no. 2 p.110-115

Wouters Peter, *Virtual Exhibition from the Flemish Art Collection,* Uncommon Culture: Virtual Exhibitions, 2015 vol. 6 no 1 p. 90 - 96

Zakrajsek Franc J., Vodeb Vlasta, *Geocoded Digital Cultural Content. Available from the AthenaPlus website*: http://athenaplus.eu/index.php?en/169/publications

Zakrajsek Franc J., Vodeb Vlasta, *Guidelines for Geographic Information*, *AthenaPlus* **website:** http://athenaplus.eu/index.php?en/169/publications