

Deliverable Summary

DELIVERABLE KEY INFORMATION	
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Context and Purpose

Madeira island is a tourist destination and receives tourists all year round from all over Europe (mainly from Portugal, Germany, UK and Scandinavian countries). Walking is one of the most preferred activities, both for residents and for tourists who visit Madeira, be it in the “wild” mountain Nature, inside the city or by the sea. The city of Funchal is a cosmopolitan, relatively small, highly enjoyable place, with a lot of interesting locations / attractions to visit. The usually nice weather conditions all year round, an unpolluted city and the easy integration of the existing soft mode modalities (in particular walking, bicycle, cable car and bus public transport) effortlessly motivates people of all ages to take on relaxing and culturally rich trips. The network of pedestrian-only streets in city centre is already quite extensive and continues to expand. The provision of other geo-positioning based services rather than route/path indication for car drivers is of high interest not only for tourist, but also for local citizens.

For the mobile telecommunication networks, Madeira is a good sample representative of the national and European markets. Such systems, as the one developed under CIVITAS-MIMOSA measure FUN-8.2 are capable of serving as valuable “Living Labs” for testing new services on a limited/controlled scale. This is the case with location-enabled (or location-based) services.

Making use of CiViTAS-MIMOSA project [1], Madeira Tecnopolo, in partnership with a subcontractor (Expedita SA), designed and implemented an infomobility pilot service aimed at providing, multi-platform, rich content, digital guiding for soft mode, leisure oriented, mobility around Funchal, aimed in particular at walkable itineraries. The service integrates multimedia content (image, text and audio descriptions) in desktop and GPS based mobile applications for the design

and provision of soft mode itineraries/routes (e.g. walking) to different types of attractions and points of interest.

The implementation work was based on an existing ISNOVA “data base” supporting platform. That platform resulted from an INTERREG III-B project involving Madeira, Canárias and Baleares islands. ISNOVA platform comprises a knowledge base system available as a source for different types of front-end distributions of information content and functionality. In order to be usable for the scope of MIMOSA measure FUN M8.2 service, ISNOVA platform required an upgrade and extension of its core, namely to support GIS content (Geographic Information Systems) and the new layer of services to be made available. The quantity of resources available in Isnova was extended (attractions, activities, etc) and the complete descriptions of each attraction are now included, in Portuguese and English (content may be created in different languages). It will also be possible to include new contents/media produced by the users.

This service defines the core concept of "attraction". An attraction includes an element of interest for a given location (ex. a monument). The attraction is described by multimedia content (text, audio and photos) and is similar to "point / place of interest" (PDI in Portuguese) as usually defined in GPS applications. Possible categories of "attractions" are: museums, churches, gardens, historic monuments; sight-views such as mountain peaks; etc.

Innovative aspects of the measure

This measure introduced/created a free and open location/geographic – GPS – based, leisure oriented, information system for Funchal. By the time MIMOSA started no such service was available in Madeira and in most other cities in Europe. This measure was a pilot project on this field.

"Rotas Funchal" or "Walking routes Funchal" is a service for creating and publishing walks/routes, preferably to be performed on foot, on other soft modes and/or public transport modes. Once created and published on the web, a walk can be downloaded to a mobile phone / smartphone, it can be consulted on a browser or it can even be saved or printed on paper for later reference and usage. Through a browser on the phone or through the custom standalone mobile application, a user / tourist can be geographically guided in the path he is taking and receive multimedia descriptions of elements of interest / attractions along the route or nearby his location. As of December 2011, the standalone application is available for most versions of Android based smartphones. The mobile application can be executed in both online and offline modes.

The measure objectives are:

- Objective 1 Support to pedestrian navigation for routes to visits (or city-walks) to points of interest with related/contextual multimedia information about each point of interest or attraction;

- Objective 1.1: Provision of location/geographic based information accessible via web, both for handhelds/smartphones and desktop/laptop computers;
- Objective 2 Design, editing and publishing of personal/favourite itineraries / walks;

Summary Contents

The situation before

When MIMOSA project started, in 2008, free/public Geographic Information Systems (GIS) based services for search and provision/presentation of location based, contextual information, was not yet available in Funchal and in many other cities in Europe, not even from external sources such as Google Maps (for e.g., as of 2008 Google Maps wasn't available in map view mode for Funchal). "Rotas Funchal" is a new kind of service introduced by CIVITAS-MIMOSA. Currently, as of December 2011, public free GIS services are essentially restricted to Google Maps based information, which is now much more complete than three years ago. On the commercial side there are software applications which may be installed in handhelds for routing/driving and some enterprise services like fleet control, usually with all information installed locally on the handheld.

Actual implementation of the measure

The first public presentation of the service was made to the participants of CIVITAS FORUM 2011, 17-19 October, in Funchal. "Rotas Funchal" is available for public/free web access at <http://routes.inmadeira.com> for both Desktop and Mobile browsers. It can be presented in desktop and mobile layouts, it can be saved/printed and it is also available as a standalone application for specific – Android – mobile phones featuring GPS integration. As of December 2011, the online web access for desktops and mobiles is complete and the standalone application for the Android platform is being tested (iPhone and Windows versions expected to become also available). The mobile application runs in both online and offline modes.

Contributions of the platform/system – main measure outputs

- A desktop and mobile web platform/service providing, leisure oriented, location based service related to using/following, creating/designing and publishing walks/routes;
- A standalone mobile application for most common smartphones featuring integrated GPS.

Once created and published, a generic walk/trip can be downloaded to a mobile phone / smartphone or it can be saved or printed on paper. Through a browser on the phone or through the custom standalone mobile application, a user / tourist can be geographically guided in the path he is taking and receive multimedia descriptions of elements of interest / attractions along the route.

Inter-relationships with other measures

There is no direct dependence of M8.2 from any other measure. Nevertheless, as new sources of information become available in the future (in particular via web services), that information can be made available on the ISNOVA platform/knowledge base underneath the service. That can be the case of the information to become available via the “Urban mobility control and monitoring centre” of M8.3, information to become available from the Official Tourist Office of Madeira or from other sources.

Deviations from the original plan

Delays in relation to original planned calendar as in current DoW: Services and platform developed/implemented under M8.2 become operational in December 2011 (Evaluation and Deployment will happen only in 2012). When compared to initial/theoretical planning in first version of DoW, this deadline corresponds to a cumulated delay of nearly 12 months. Partial delays have been reported in previous formal documents, namely in PPR1, PPR2 and PPR3.

In order to cope with the cumulated delays, the initial evaluation plan (as presented in first DoW) was later simplified. For CIVITAS-MIMOSA 3rd amendment MT also requested a 2 to 3 months extension for this measure in order to be able properly evaluate and deploy the service (this will be possible if the whole project receives an equivalent extension as well).

Under-spending in equipment: The server equipment initially planned for this measure was not purchased. The services/platforms under M8.1 and M8.2 have been installed in existing equipment, which is shared with other utilizations. Under-spending reporting in equipment for both measures FUN 8.1 and FUN 8.2 has been explained/included in Amendment 3.

Functional Use

This measure comprises the implementation of a pilot-project to a service of information and orientation within the domain of mobility, based on localization/geo-tagging, using GPS (Global Positioning System). The services implemented are addressed both to tourists and residents. An example of such service has to do with performing thematic circuits (for example, museums), where the tourist/user is guided in the chosen itinerary, being able to read, hear or watch (in text, audio and images) interesting details of the attraction/point-of-interest while doing that (such as the history of a monument). These details can be activated exactly where the user is at, by geo-tagging / GPS. The tourists/users will carry a suitable handheld equipment which can be the case of their own smartphones. Figure 1 illustrates the concept.

It must be noted that, whenever possible, all development was made Open Source oriented, meaning that in the future all the “source code” produced may be reused under the given associated restrictions. Being sufficiently generic in its design and developed under Open Source, this service/platform will be easily transferred to other cities or other locations, namely to other CIVITAS cities or expanded to cover wider areas such as the whole islands of Madeira and Porto

Santo. The core back-office code of the platform was written in Mono¹, running on a Linux server. All the web content is presentation is based on a Joomla² CMS. The standalone mobile application was developed using the FeedHenry³ development environment.

Main functionalities

- “Electronic guide” to walks on predefined routes/walks along various Points of Interest (POIs) / Attractions, giving textual and multimedia information when the user reaches a certain tagged point, via GPS. The tourist/user will be able to:
 1. Select a specific itinerary or thematic route to view and/or perform;
 2. Whenever within the perimeter of a known attraction (given by its GPS location), to have specific information about that attraction, in particular its description (in multimedia) and location.
- Users can design and make their personal walks available, with the help of the web tool.

Examples/scenarios of usage of the service

In the following sections we present some examples/scenarios of usage of the service accessing from the three types of client: i) desktop web application; ii) mobile web application, and; iii) Mobile standalone application (in this case for Android). For each type a number snapshots of the related interfaces are depicted. Figure 1 exemplifies the concept.

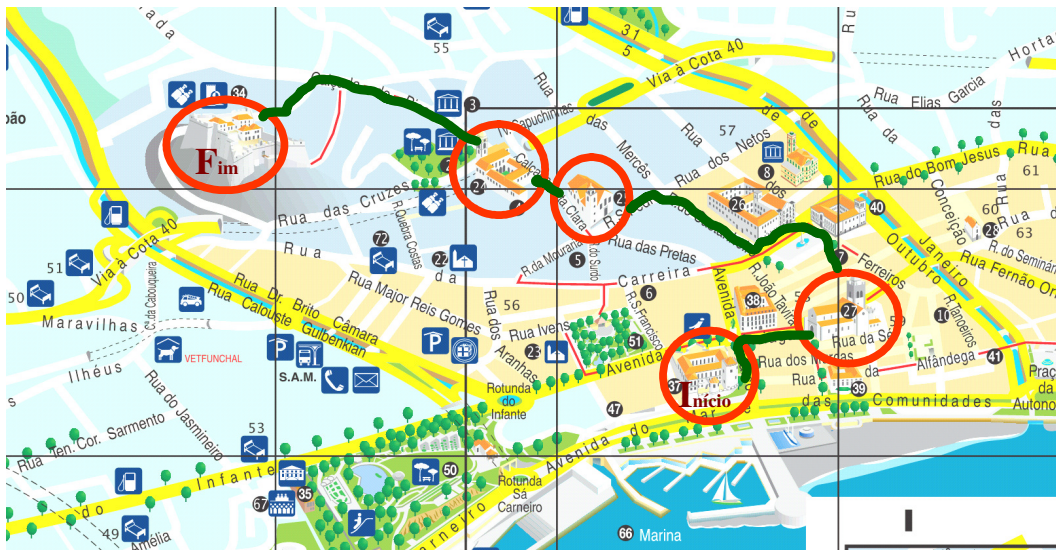


Figure 1 - Exemplification/Concept of a walk within the city centre, including five attractions. This walk begins at „Início“ and ends at „Fim“.

¹ <http://www.mono-project.com>

² <http://www.joomla.org/>

³ <http://feedhenry.com/>

For the conceptual example presented in Figure 1, there are five attractions/point-of-interest to visited along the proposed walk/itinerary. GPS location on a map and multimedia information is available for each attraction/point-of-interest, consisting of a textual description, some photos and an audio description. English and Portuguese content have been produced, but content can be in any language. Figures 2 to 11 present actual screenshots of each type of usage.

The service is now available at <http://routes.inmadeira.com/> for Desktop and Mobile web access.

i-a) Desktop web application access – using existing walks/itineraries

The desktop web access provides not only complete guides for the walks/itineraries available, but it also permits the user to design, edit and publish his own walks/itineraries.

Rotas Funchal

Places Of Interest | Classified Area | Service | Events | Monument | Natural Species

About Funchal Routes

"Rotas Funchal" or "Walking routes Funchal" is a service for creating and publishing walks/routes, preferably to be performed on foot or public transportation.

Once created and published, a walk can be printed on paper or downloaded to a mobile phone / smartphone with GPS. Through a browser on the phone or through a custom application, a user / tourist can be geographically guided in the path he is taking and receive multimedia descriptions of elements of interest (the attractions) along the route.

The "Funchal Routes" was developed by Madeira Tecnopólo and Expedita SA under the FP7 European project CIVITAS-MIMOSA (http://www.civitas-initiative.org/index.php?id=70&sel_menu=6&proj_id=11).

Our suggestions

- Churches
- Madeira History
- Shopping
- Strong emotions Itinerary
- Historic Buildings
- Traditions in Madeira
- Gardens - natural Beauty
- Nightlife
- Outdoor Tour

What other tourist suggest

- Poncha Tour

[View all Tours](#)

Developed by: **expedita** MADEIRATECNOPOLO

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Figure 2 - Main screen of the web tool which supports the design/construction and provision of (city) walks created by an end user (version as of December 2011).

Madeira History



0 people viewed this tour

Votes: ★★★★★

Duration: 12:00

Print

Description:

Take this tour as a guide for some of the museums in Funchal, and know a little from our history.

0 Comments

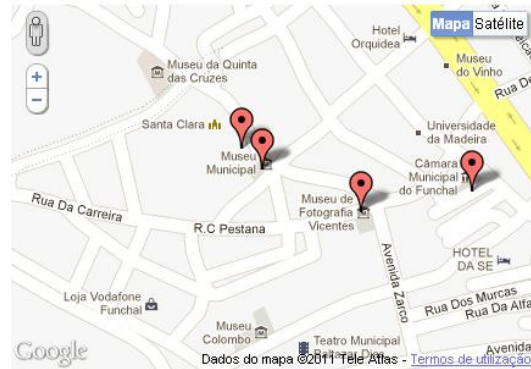
Comment(s):

No Comments!

Username:

Password:

Not yet registered?



Related points of interest



The House - Museum Frederico de Freitas

The House - Museum Frederico de Freitas is installed in the house called the Calçada, which was home to Dr. Frederico de Freitas, who lived there until his death in 1978. Having donated to the Autonomous Region of Madeira his collections, the Governm ...



Civic and cultural center of Santa Clara - Universo

The civic and cultural center of Santa Clara - Universo das Memórias João Carlos de Abreu is responsible for maintaining a public exposure of all goods donated to the Autonomous Region of Madeira in 2001 by João Carlos de Abreu. It is installed in an ...



Fotografia Museu- Vicentes

The Photography Museum-Vicente is the oldest known studio in Portugal, founded in 1848 by Vicente Gomes da Silva. The entire assets of this trading house are cultural heritage of Madeira since 1978. Initially had remarkable photographic archive with ...



Museum of Sacred Art

The Museum of Sacred Art is located in the former palace of the Diocese do Funchal. From the beginning of its construction we can still see the Chapel de São Luis de Toulousa, in its facade there is a portal that holds the crown and arms of Figueiredo ...



Mercado dos Lavradores

The building of Mercado dos Lavradores was ordered by the City Hall of Funchal. It is composed by several interior spaces from which stands out, a courtyard with a central panel with a beautiful pavement, the fish market and two stairways leading ...

Related Attractions



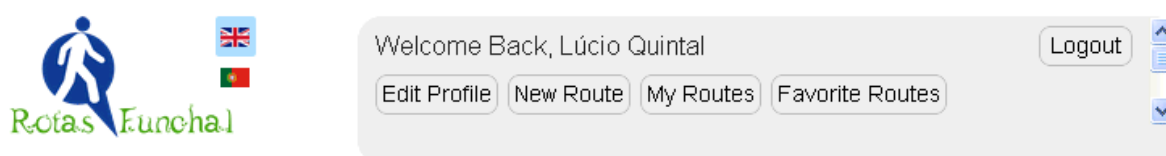
Market Night

23 December is Christmas shopping day at the market. It is also the day at the market when we can feel a really traditional festive spirit before Christmas. The market and the bars around it stay open all night making it one of the longest and most f ...

Figure 3 - Main view of a walk, called “Madeira History”, created and published using the web tool prototype. It can be presented in desktop and mobile layouts, it can be printed and it will also be available in a specific mobile application featuring GPS integration (version as of December 2011).

i-b) Desktop web application access – designing and publishing walks/itineraries

The design, editing and publishing of personal/favourite itineraries/walks is very simple and intuitive using the interface provided by the web application. In order to use this feature of the service, users have to register with minimum information (name, default language, email, password and country are required).



New Route - Main Information

Notice: This Route will be saved in **English** ⓘ

*Title:

*Description:

Duration: horas minutos

Observations:

Figure 4 – The creation of a new, personal walk starts with the indication of some general information

Select Point of Interest

 Search Clear

Cruzes Viewpoint

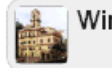
Helicopter Ride

Sledge Ride

Attached Points of Interest



Cruzes Viewpoint



Wine Museum

Create a new point of interest

*Name:

*Description:

*Localization: X: Y: Z:

Next



Back

Next

Figure 5 – The user can complete his walk / itinerary by creating his own new attractions / points-of-interest, or by inserting from the existing list.

Mobile web application access

The mobile web access consists on a customized web version of the site, but in the case of the mobile browser it isn't possible to create/design, edit or publish itineraries.

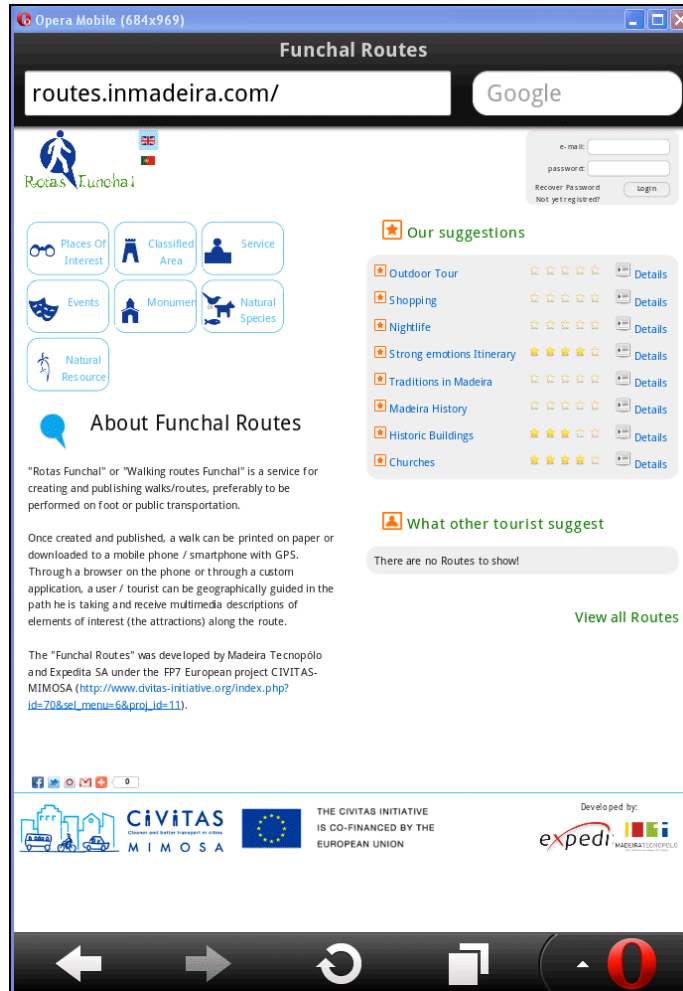


Figure 6 - Main screen of the mobile web access to the service. The main URL is the same both desktop and mobile access. The mobile client is automatically detected (version as of December 2011 on Opera web browser for mobile).

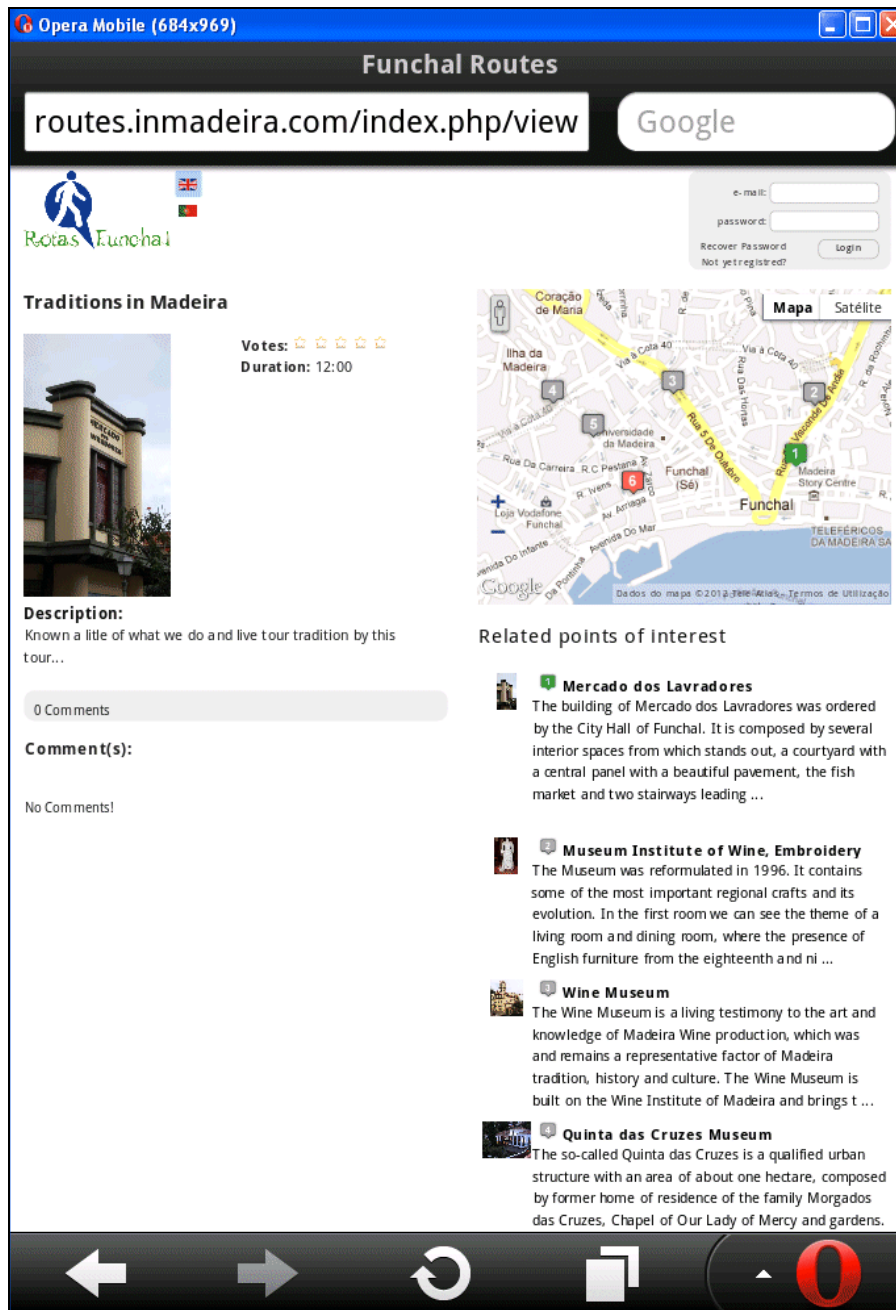


Figure 7 - Main view of a walk, called “Traditions of Madeira”, viewed on Opera web browser for mobile phones (version as of December 2011).

Mobile standalone application access

The standalone application is available for most versions of Android based smartphones. The mobile application can be executed in both online and offline modes. iPhone and Windows versions expected to become also available. The Android application is installed via a standard

“APK” Android file, which can be downloaded from the service website (<http://routes.inmadeira.com/>) or from Android Market⁴.

Figure 8 depicts the available walks/routes to be downloaded and stored locally on the mobile mobile standalone application.

Figures 9 and 10 shows the details of one of the downloaded walks (called “Historic Buildings”). Each attraction / points-of-interest is located on the map and detailed multimedia information can be presented about each point.

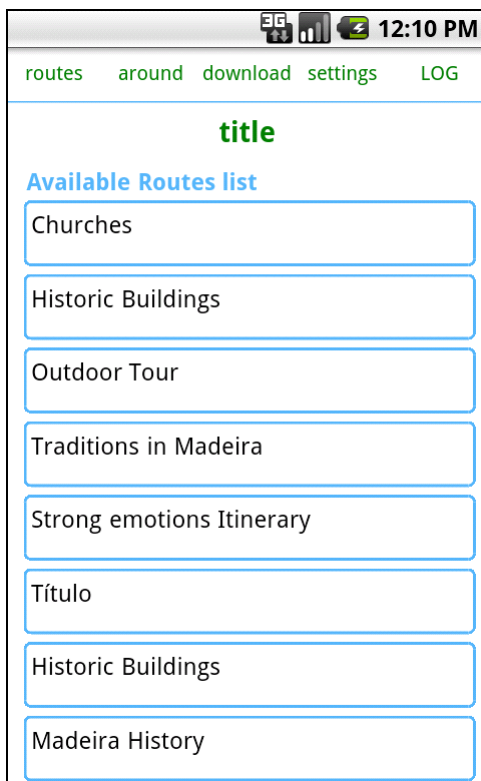


Figure 8

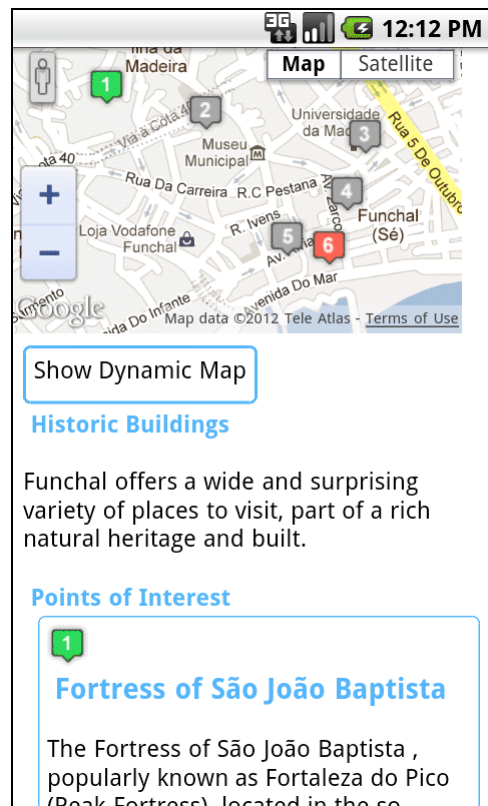


Figure 9

⁴ <https://market.android.com/>

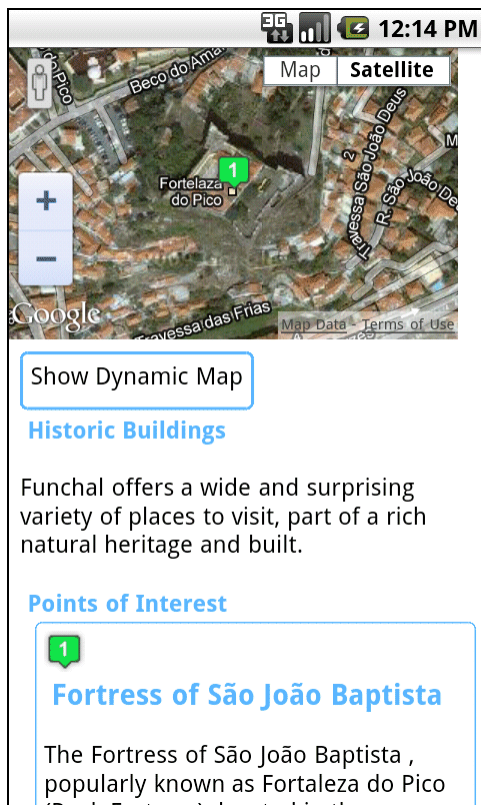


Figure 10

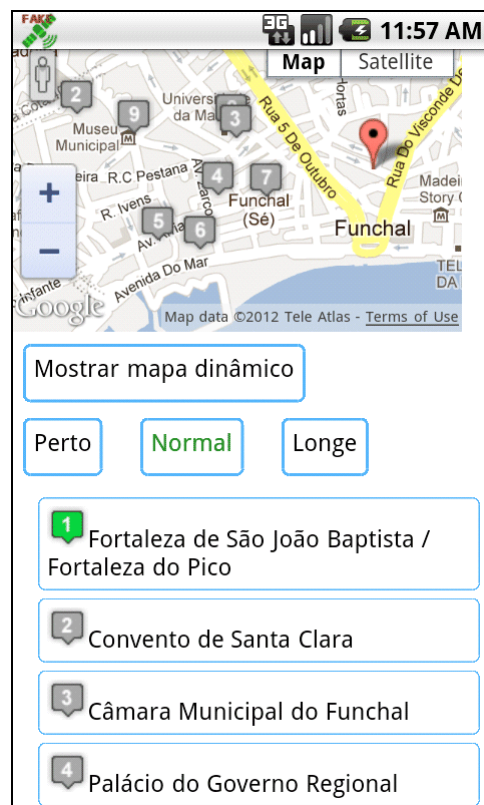


Figure 11

Figure 11 depicts the case where a user can check and view the existing attractions / points-of-interest near his current location as given by GPS. Three distance ranges are available: Near, “Normal” and Far.

Lessons learned and future work

Considering what as been previously described, we conclude that this measure, which was a pilot project, was successful since it introduced a new, interesting and innovative “Infomobility Transport Telematic System” for citizens and visitors of Funchal. “Rotas Funchal” was the first “Location-enabled Mobile Search and Guidance”, GPS based service freely available in Funchal and in Madeira island. In fact it is available on the web and the standalone mobile application can be downloaded and used by anyone.

During the four years of CIVITAS-MIMOSA project, location-based technologies and related services (including production of new content) available evolved and as we present the results of this measure some other initiatives may present similar and/or complementary offers in some aspects. Future work may thus involve potential partnerships with the owners/providers of such

services. By the end of the implementation this measure we have identified two such cases. One is related to the provision of web based only thematic itineraries/guides for Funchal, produced by the CULTUREG PCT-MAC project⁵. The content produced under CULTUREG project would fit well into measure FUN 8.2 needs for content. A contact with the copyright owners of that content have been made. The other initiative is the commercial development of a tourism related iPhone/iPad application aimed at those visiting Madeira⁶. The convergence of our CIVITAS-MIMOSA platform and content with other initiatives could lead to an excellent combination of good content, interesting features and commercially feasible/quality software.

It should be noted again that this service/platform will be easily transferred to other cities or other locations, namely to other CIVITAS cities or expanded to cover wider areas such as the whole islands of Madeira and Porto Santo.

We conclude that the results of the implementation of measure FUN M8.2 fulfilled its goals.

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[1] Funchal Measure 8.2 for CIVITAS-MIMOSA (Location enabled Mobile Search and Guidance), http://www.civitas.eu/measure_sheet.phtml?lan=en&id=632



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⁵ <http://www.turismocultural-macaronesia.com/Regi%C3%B5es/Madeira/Roteiros-1.aspx>

⁶ <http://www.mdxapps.com/mdxapps/>