

Joint Doctoral Program in Telecommunications

Mobile Computing

Project proposal – Place-aware Campus life browsing

Project Description

In this Project we aim at exploring the concept of location based information retrieval. The objectives are to design and implement a platform that allows people to publish, access or annotate place-based content (text, audio and pictures), for motivating sharing of experiences and knowledge between users, and create traces of user's presence in the University Campus. For example, users could publish, access or annotate information about events occurring in the Campus hall or specific events rooms, pictures about places for future remembering, special experiences in some building such as the library, the best directions for different places from the Campus entrance, and much more.

The main challenges to explore are:

- Which are the alternatives to associate physical spaces with content?
- Which are the alternatives to associate users location to the physical spaces?
- Which are the appropriate models for publishing, access or annotate information? How to manage different content topics in the same place?

Project task 1 – Geo-referenced content model

Start: 02/04/2009

Finish: 08/05/2009

Objective: Specification and design of a geo-referenced content model

Description: This phase is closely related to the application logic. Therefore, it must start by a description and specification of the final user application, followed by the identification of the required content sources. The students should then study several mechanisms geo-referencing the content sources taking into account the usage of the application on Campus physical places.

Sources to consider:

User generated contents (pictures, files, text notes, etc.): this is the main source.

Geo-referenced contents from the Internet (blogs, photo services, messaging servers).

Milestone M1 – Geo-referenced content model specification (1st proposal): 20/04/2009

Type: report

This deliverable is a short report describing the Geo-reference content model.

Project task 2 – User location model

Start: 20/04/2009

Finish: 05/06/2009

Objective: Select a mechanism to associate user position with physical places and geo-referenced content

Description: During this phase students should study several mechanisms to associate user positions to physical spaces. Those can be based on wireless networks positioning, such as WI-FI or Bluetooth, but other solutions can be considered, such as the use of other sensors embedded in the environment. They should evaluate their feasibility within the University Campus and select those most appropriate for the project goals. Mainly, the choice should also take into account the geo-referenced content model requirements (phase 1).

M2 – Available mechanisms survey and mechanism selection: 15/05/2009

Type: report

M3 – Location model deployment: 05/06/2009

Type: application: it includes the deployment of client and server software models that implement user location model.

Project task 3 – Information access, publishing and annotation models

Objective: Design and develop the navigation model.

Start: 20/04/2009

Finish: 12/06/2009

Description: In this phase students should design and develop an information navigation model that should account for the situated characteristic of the information and for the overlapping of different content topics for the same place.

M4 – Navigation model: 05/06/2009

Type: report

Project phase 4 – Application/Platform development and deployment

Objective: Application/Platform deployment

Start: 20/04/2009

Finish: 29/06/2009

Description: In this phase the several components should be integrated and deployed in the Campus for a real world experimentation of the developed concepts. The deployment should be followed by a period of use by real users and analyses of real world deployment constraints. Students can consider monitoring of the system and analysis of the collected data (logs, observations, comments, etc.)

Milestone M5: Application deliverable and deployment report: 29/06/2009

Type: application and report