Project Periodic Report 3 - Publishable Summary

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Publishable summary

PEACOX - Persuasive advisor for CO2-reducing cross modal trip planning - is an international collaboration between nine organizations from six different countries aiming to provide travellers with personalised multi-modal navigation tools that allow, help and persuade them to travel and drive in a more ecological way. The project is supported by the EU under Framework Programme 7. The PEACOX consortium unites expertise from navigation systems, transportation sciences, environmental modelling, artificial intelligence, persuasive technology, human-computer interaction, social science and software development. These expertise cover all areas needed for addressing the PEACOX objectives successfully.

In our highly globalised world work and leisure life are often geographically widely distributed. Increasing mobility and traffic result in a strong environmental impact, particularly in urban areas. Personal transportation is one of the greatest contributors of CO_2 emissions. More people are becoming increasingly concerned with rising fuel costs and pollutant emissions. Strategies are urgently needed to promote environmentally friendly transport behaviour, and means to help people reducing their ecological impact are required. To convince users in making more sustainable travel choices PEACOX will enrich existing navigation approaches and systems with innovative approaches and features.
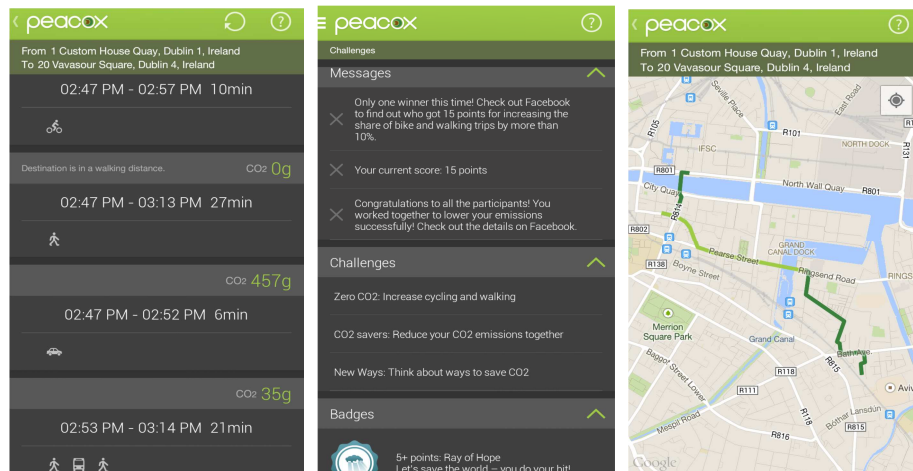
The overall goals of PEACOX can be summarized as follows:

- Research possibilities for influencing travel and driving behaviour of users with the use of targeted persuasive strategies, providing situated and personalized feedback and use of advanced travel information systems.

- The implementation of an integrated prototype system and infrastructure bringing developed approaches to the real world.

To reach these goals PEACOX developed a mobile smartphone application that enables the users to easily plan and organize their trips (e. g. by foot, bike, public transport, motorcycle, and car). To convince and stimulate the users in behaving more environmentally friendly within their travelling activities PEACOX enriches trip planning and information systems with innovative approaches and features, such as personalised travel recommendations,

automated trip purpose identification, individual emission modelling as well as exposure modelling, eco-friendly driving models, and persuasive presentation approaches.

To meet the users' needs PEACOX offers a mobile smart phone application for eco-friendly route planning and navigation, eco-friendly travel suggestions with comfort, CO2 feedback for selected routes and transportation modalities, detection of individual travel patterns, personalised and green travel suggestions, real time GPS and traffic information service.

Figure 1 shows a graphical presentation of the collaboration of the projects' activities, the WP-components and their interdependencies.

Figure 1: Work package components and their interdependencies

The main objectives of the third and final project period (October 2013 to March 2015) were to implement the second iteration of the functioning prototype that integrates the learnings from the first trial, and to evaluate the developed concepts, algorithms and prototypes in extensive field trials in Vienna and Dublin.

Based on the results of the first field trials in the last period the project partners worked jointly on designing and improving the user interface for the projects second prototype (see screenshot below).

Figure 2: User interface screenshots of the second prototype

In parallel the technical architecture and infrastructure was modified in order to address issues identified during the first field trials and to optimally integrating the single components of the different partners and developed in different work packages, especially WP3 and WP4. Additionally connections to required third-party services have been added (especially traffic information from Google-Maps for Dublin, and Telematix routing).

Based on this infrastructure and the code from the first trial a fully functional prototype using the Android operating system was implemented and has been thoroughly tested, both with regard to functionality as well as usability and acceptance.

A major focus of the third project period was the organization and conduction of the second field trials, in which the integrated prototype was evaluated by users in real life conditions over the period of two months in Vienna and Dublin. The results of this trial were analysed and provide valuable input for future work on trip planner applications.

Besides the main development work the project consortium continued to disseminate the project results by participating in events and publishing results in scientific journals, conferences and workshops. For more information about project status and next steps visit the project's website at www.project-PEACOX.eu. You can also contact the project coordinator:

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