Welcome to the 3rd PEACOX Newsletter

The aim of this newsletter is to inform scientists, developers, experts and interested audience that work in the field of personal transportation and the wider public about achievements and results reached within the EU-funded PEACOX project.

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PEACOX Presence at the ITS World Congress in Vienna – „Smarter on the Way“

The ITS World Congress took place from 22nd to 26th of October 2012 in Vienna and focused on the benefits of information transport solutions for several modes of transportation by connecting customers and encouraging sustainability. More than 8.000 international experts visited the ITS World Congress with its impressing exhibitions and a wide range of presentations, demonstrations, workshops and sessions and made it a great success.

PEACOX was presented at the Congress in numerous ways. Klaus Heimbuchner (project partner ITS Vienna Region) included PEACOX in his presentations within the framework of Special Interest Session SIS64 "Users of ITS" and at the ITS Austria presentation stage on Friday, 26th October. Also project partner Fluidtime presented some PEACOX innovations at his exhibition booth and within several workshop presentations.

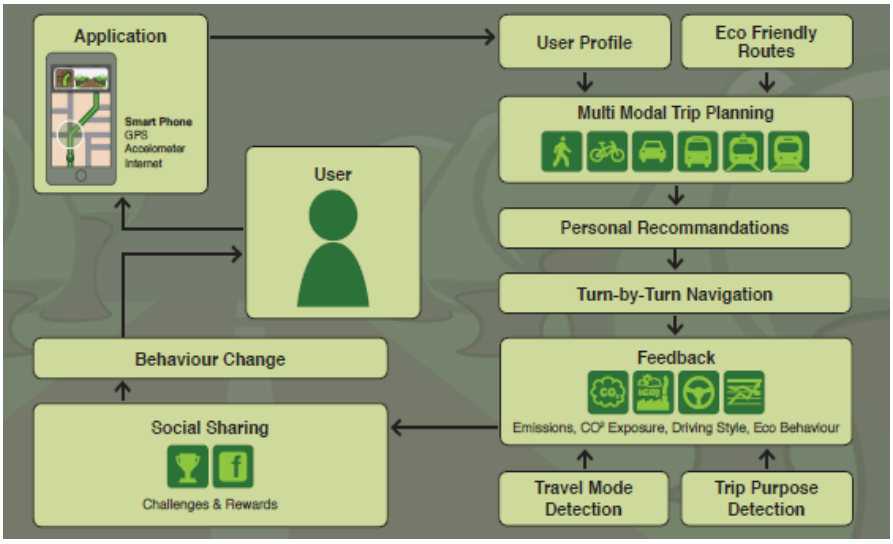
Project staff spoke about experiences at the congress: “Stakeholders were especially interested in the aspects of the personalized journey planning application. The persuasive strategies were also of great interest, because they can lead to more sustainable travel behaviour.” The congress was a perfect platform and communication hub for the PEACOX team to present concepts, innovations and technical solutions. The picture gives you an insight into the congress, which was very well attended. The PEACOX folder was deposited at the exhibition booth of ITS Vienna Region and communicated and distributed by the stand personally.

PEACOX Project Workshop with Related Projects - "User- and Eco-friendly Travelling Solutions"

In the context of PEACOX a workshop with related projects was organised and took place on Wednesday, the 24th October 2012, also during the ITS World Congress in Vienna. The workshop was planned, organised and led by CURE.

The aim of the workshop was to share experience, to discuss and work together on common topics, such as usability of traffic information systems, future challenges and directions in ICT-based navigation and transport systems, requirements and environmentally awareness in travel contexts, possibilities for reducing environmental impact of personal transportation, platform architectures. Nine participants from the following projects took place at the workshop: PEACOX, ECOMPASS, REDUCTION, CARBOTRAF, ICT-EMISSIONS, SUNSET. Each project was presented and subsequently discussed. Furthermore, a common book publication will be initiated by CURE. Work on it will start in the coming weeks.

The PEACOX components were presented and discussed at the workshop as follows:



1st PEACOX Advisory Board meeting

The 1st Advisory Board Meeting took place in Vienna on Tuesday, the 25th of October 2012 (also during ITS World Congress). The aim was to get different perspectives and viewpoints from international experts working on related topics. The meeting led to fruitful discussion, evaluation, advice and exchange of views with five participating experts (engineers, social scientists, managers and transport planners) from different fields and countries. Consistently positive feedback was received for the previous work within the project. Furthermore PEACOX can benefit from experience, advice and input from the experts for the further work.

Study: A critical review of Eco-Driving and $C0_2$ Emissions modelling to facilitate Eco-Routing

Within the project PEACOX a review on eco-driving and $C0_2$ emission models was carried out by project partner Trinity College Dublin.

The main goals of eco-driving are environmental protection, air pollution remediation and road safety improvements. Transport emissions comprise 26 % of the overall CO_2 emissions in EU. This is a

cause for concern due to the high traffic demand growth rate. Eco-driving means that through the use of several methods (e. g. addition of advanced vehicle technology, eco-routing, choice of transport mode) less emission should be caused. The goal of modelling of eco-driving trips is to provide carbon footprint information to road users. Eco-driving can significantly affect the amount of energy and emissions from a single vehicle and can reduce emissions by up to 10 % through driving more moderately, using on-board fuel monitors and avoiding rapid acceleration and excessive braking. A number of different studies claim benefits of eco-driving. Eco-driving can cause unusual driving behaviour and may cause negative environmental impacts (with higher total emission). Eco-driving could result in an increase in traffic congestion time and as a result in increasing CO_2 emissions.

Eco-routing has received little attention in research so far. The choice of route, using a fuel consumption and use of emission models, can result in energy savings of up to 23 % if motorists choose lower emissions routes. Static emissions modelling for eco-driving are widely available but have limitations in terms of predicting the trip-by-trip emissions precisely. None of them take real traffic information into account. They are based on given routes, average vehicle trajectory data and average emission rates. To get real-time or predictive emission information specific devices are necessary (e. g. navigation tools). A system for assisting eco-driving behaviour should include both real time and prediction applications for emissions. Modal modelling for real time emissions consider second-by-second vehicle trajectories (speed and acceleration from GPS). It will also consider congestion and high emission from aggressive driving. An algorithm may be developed using neural networks for internal combustion engines. To train the neural network portable emissions monitoring system data, speed and accelerations data and switch in the neural network can be used. Emissions can be predicted for different routes and an optimal route can be selected based on the associated emissions. Emissions can also be considered as a cost component of route choice.

As a result of the review eco-driving often is promoted worldwide without any rigorous level of assessment about suitability of methods and their possible impact at the total network level. Alam & McNabola (2012) came to the conclusion that eco-routing has much potential. There should be two parts considered: prediction and real time estimation.

Ref.: Alam, S. & McNabola, A. (2012): A Critical Review of Eco-Driving and CO_2 Emissions Modelling to Facilitate Eco-Routing, Trinity College, Dublin 2012.

Contact to PEACOX project

For more information about the PEACOX project take a look at the project website at http://www.project-peacox.eu or contact the project administrator.

Mr. Johann Schrammel
CURE - Center for Usability Research & Engineering
E-mail: Schrammel@cure.at

The PEACOX team wishes you a merry Christmas and happy new year!