ICT FOR TRANSPORT

EcoGem

Cooperative Advanced Driver Assistance System for Green Cars

European Commission
Information Society and Media

EcoGem's key objective is to bring intelligence and learning functionalities to on-board systems, enabling autonomous as well as interactive learning through V2X interfacing. Based on gathered experience, EcoGem vehicles learn over time to predict (and avoid) congested or energy-inefficient routes.

At a Glance

Project acronym:
EcoGem

Project type: Specific Targeted Research Project (STREP)

Programme:
7th EU Framework Programme

Project coordinator:
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Project partners:
1. Temsa Global A.S., Turkey
2. Pininfarina S.p.A., Italy
3. PTV Planung Transport Verkehr AG, Germany
4. Fundacion Tecnalia Research and Innovation, Spain
5. Hi-Iberia Ingenieria Y Proyectos S.L., Spain
6. University of Bradford, UK
7. Motor Transport Institute, Poland
8. Institute of Communication and Computer Systems, Greece
9. Cosmote Mobile Telecommunication S.A., Greece
10. Softeco Sismat S.R.L., Italy
11. Navteq B.V., The Netherlands

Start date: 01.09.2010
End date: 28.02.2013
Total cost: 3,157,978 €
EU funding: 2,043,922 €
Project website: www.ecogem.eu

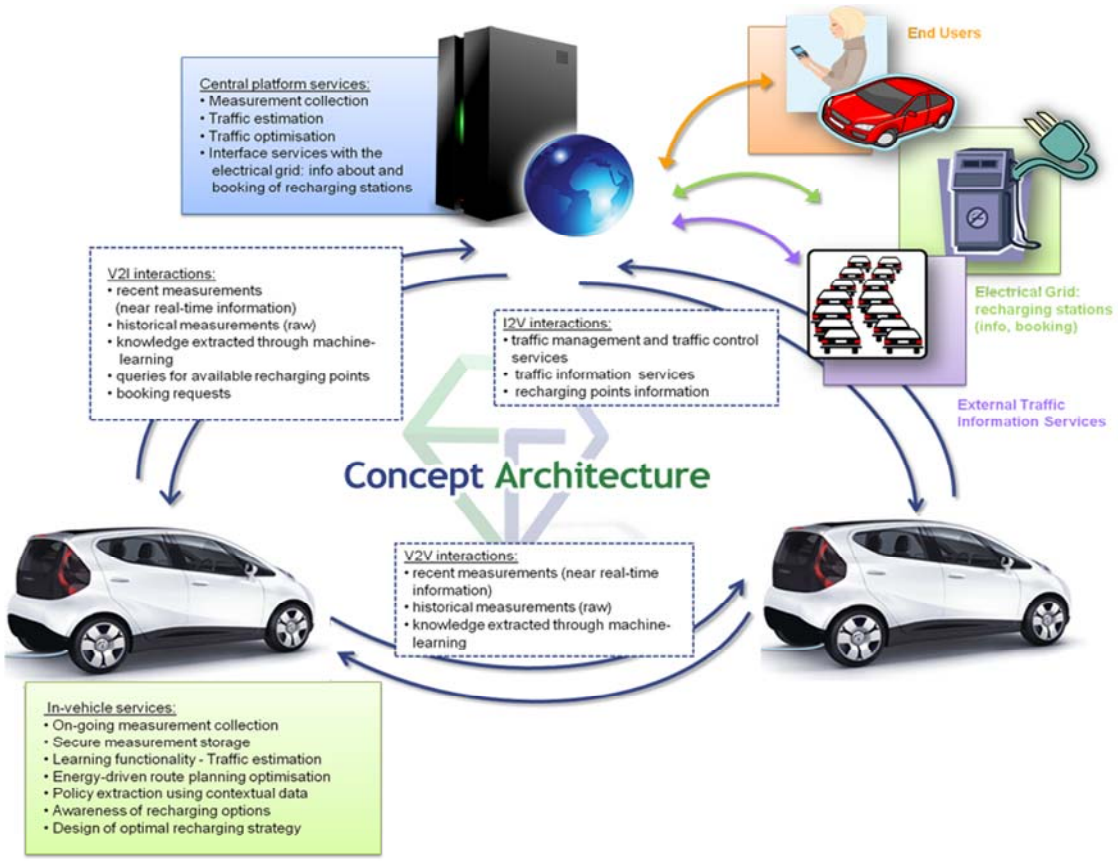
Objectives

EcoGem's aim and approach is to render the Fully Electric Vehicle (FEV):

- capable of reaching the desired destinations choosing the most energy efficient routes possible;
- making the best use of FEV context information and services - such as battery characteristics, location and availability of recharging points/stations close-by, booking of recharging slots, etc. - while on the move.

To achieve its goals, EcoGem develops and employs novel techniques:

- on-going, learning-based traffic prediction;
- optimised route planning;
- interactive and inter-operative traffic and recharging management via V2V and V2I interfaces and communication.



Description of Work

To successfully deliver the above-mentioned solutions, EcoGem implements the following work plan:

1. Development of an on-board ADAS equipped with monitoring and machine-learning functionality and targeted for route planning and recharging optimisation;
2. Development of an enhanced traffic and recharging management platform at the infrastructure side;
3. Provision of secure and open interfaces to the knowledge and information of the platform;
4. Definition and development of V2V application-level interactions and interfaces;
5. Definition and development of V2I/I2V application-level interactions and interfaces;
6. Development of mechanisms and software tools for data security, user privacy, safety and acceptability;
7. Development of a FEV-oriented traffic simulation platform suitable for EcoGem;
8. Validation through simulation trials;
9. Validation through field trials with test vehicles.

Trials & Demonstration

For the integration and testing of the proposed technologies and solutions – and to minimise time-to-market – EcoGem will perform a systematic validation of the system prototype in field trials. Firstly, simulated evaluations will be carried out using an enhanced simulation environment. Secondly, two kinds of field trials will be performed using actual test FEVs: (i) field trials in a controlled environment (test facilities in San Giorgio, Italy, provided by Pininfarina); (ii) field trials within urban regions (city trials). The latter will be performed in Bavaria, Germany, using facilities and services provided by PTV and VIB. The FEVs to be used for real-life trials will be provided by Pininfarina and Temsa.

For further information:

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EcoGem fact sheet
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