

Supporting the driver in conserving energy and reducing emissions

Motivation and Objectives

ecoDriver addresses the need to consider the human element when encouraging "green" driving, since driver behaviour is a critical element in energy efficiency. The main focus of the project is on driver interaction with the vehicle and optimised feedback strategies to ensure user acceptance and compliance. The project will address technical aspects in the vehicle-environment-driver loop across a wide range of vehicles and powertrains. The target is to achieve a sustained 20% reduction in energy use.

The main innovative aspects of the project are to :

- Optimise feedback for both nomadic devices and built-in systems and compare the effectiveness of each (measured by reduced energy consumption as compared with an existing baseline system)
- Tailor feedback to driving style and traffic conditions
- Minimise any side-effects of eco-driving support in terms of drivers distraction and safety
- Use real-time fuel use calculators to ensure the most accurate feedback

Project Plan, Milestones and Deliverables

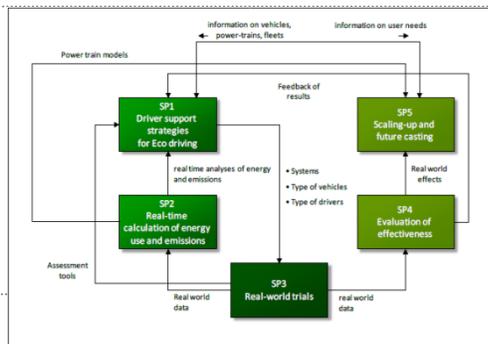
Major milestones are:

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| M14 | Delivery of HMIs |
| M22 | Integrated systems available for trials |
| M36 | Trials completed |
| M46 | Analysis of trial data and cost-benefit analysis completed |
| M46 | Final event |

SP1 will provide information to SP5 on driver styles, vehicles, fleets, information collected on the state of the art. SP5 in turn will provide information on different powertrains.

SP2 will provide the functions for assessing, in real time, energy use and emissions whilst SP4 will provide assessment tools to be used in the HMI evaluations, but also users' feedback on the developed and tested applications during the real-world trials.

SP5 will predict future impact and carry out cost-benefit analyses of various systems & scenarios; it will also identify barriers to deployment, providing policy-makers with information on incentives and regulations to promote adoption.



Technical Approach

Applications will be developed that influence driver behaviour to conserve energy and reduce emissions. These applications, both integrated and nomadic, will contain two important parts: the **Energy Threshold Interpreter** and the **Driver Feedback Interface**.

The **Energy Threshold Interpreter** determines the best energy efficiency that could be achieved at a given moment, considering both the fixed conditions that cannot be influenced (e.g. road type, traffic density, weather, the vehicle engine and the weight of the vehicle) through the **Vehicle Energy & Environment Estimator** and the semi-fixed conditions (driving styles) through the **Driving Style Estimator**. The difference between the optimal energy consumption and the real energy consumption will be fed back to the driver through the **Driver Feedback Interface**. A number of HMI concepts will be considered in order to obtain the most effective feedback in terms of energy efficiency and different drivers styles and vehicles.

Organisational Information

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| Budget | 12.7 M€ | Funding | 10.7 M€ |
| Duration | 48 months | Start | October 2011 |
| DG / Unit | CONNECT / H5 | Contract n° | |
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| Partners: | BMW F+T, TNO, VTI, CTAG, TomTom, IKA, IFSTTAR, ERTICO, CRF, DAI | | |
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