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Energy, Technologies, Issues and Policies for Sustainable Mobility

£13M European ecoDriver project seeks to reduce fuel consumption by up to 20%

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The University of Leeds (UK) is [leading](#) a £13-million (US\$20.6-million), 4-year European project—ecoDriver—to develop innovative new technologies for both in-vehicle and remote devices, such as downloadable smartphone apps, that will help motorists to significantly reduce their fuel consumption by driving in a more energy-efficient way. The overall aim is to reduce fuel consumption by up to 20%.

Leeds researchers led by Professor Oliver Carsten from the Institute for Transport Studies will work with transport research centers across Europe, as well as several leading vehicle manufacturers, to design and test the devices, which could be on the market within 5 years. The ecoDriver project can be considered complementary to another FP7 project, [eCoMove](#), noted Professor Carsten.

While eCoMove concentrates on cooperative systems—i.e. on communications between the infrastructure and the car—ecoDriver concentrates on autonomous systems, i.e. on improving intelligence within the vehicle. There are some partners in common between the two projects.

The way we drive can make a huge difference to the amount of fuel we use and in turn how much CO₂ is released into the atmosphere. As a general rule, the most important influence on fuel consumption is the driver's use of the accelerator. However, fuel consumption is also affected by lots of other factors like how much air you have in your tires, how many passengers you're carrying, engine performance and even the weather conditions.

—Oliver Carsten

Some vehicles are already fitted with devices that give drivers feedback on their fuel efficiency. These work by using information about the engine size, gears and speed to calculate a rough estimate of consumption, often displayed as miles per gallon (MPG) or liters per 100 km. However, according to Professor Carsten, they lack the sophistication to have a real impact on driver behavior, especially in the longer term.

Real-world evaluations indicate that existing devices do not really have much of an effect on people's driving. At the most, they are probably saving around 5% and the novelty tends to wear off with drivers after a while.

With ecoDriver we are hoping to create intuitive devices that are not only more accurate, but that can respond intelligently to what kind of driver you are. So different drivers might have different kinds of feedback, but in any case we want to ensure that it is easy for drivers to understand what they need to do in order to save fuel. That way, we are more likely to gain acceptance among motorists, which is the biggest obstacle to changing driver behavior.

—Olive Carsten

The team hopes to come up with new ways of feeding back information to the driver, for example by making the accelerator pedal stiffer to encourage drivers to ease off or change to a higher gear.

The four-year project will make use of Leeds' advanced driving simulator, which will allow the researchers to test the effectiveness of their prototype devices on fuel efficiency and driver response. The best designs will then be subjected to real-world tests with a variety of drivers. At the end of the project the best designs will be incorporated into vehicles for a project showcase. The team hopes that the concepts will then be taken up by vehicle manufacturers and brought to market.

The results of the project will also be used to make predictions for policy-makers on how much energy could be saved if the technologies were used across the UK vehicle fleet.

The research is a collaboration between the University of Leeds; ERTICO - ITS Europe in Belgium; TNO and NAVTEQ in the Netherlands; VTI in Sweden; CTAG in Spain; BMW, Daimler AG and Institut für Kraftfahrzeuge (ika) of RWTH Aachen University in Germany; IFSTTAR in France; and Fiat Research Centre in Italy. It has been funded under the Information and Communication Technologies stream of the European Community's Seventh Framework Programme for research and technological development (FP7).

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