BMW GROUP
Corporate Communications

Press information
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Safe and efficient driving in tomorrow's cities.

In the UR:BAN research initiative, specialists from the BMW Group are developing driver assistance and traffic management systems for the urban driving environment.

Munich. The trend towards urbanisation shows no signs of slowing. Today, more and more people lead urban-centred lives. As well as generating more traffic, this trend also poses a significantly increased risk of congestion and accidents. To ensure continued unrestricted freedom of personal mobility in the future, traffic and transport systems must find a way to cope with these strains, so that every road user is able to make their journey as safely, efficiently and comfortably as possible.

A total of 30 partners, comprising automotive manufacturers and suppliers, electronics, communication technology and software companies, universities, research institutes and cities, have joined forces in the UR:BAN project (the German acronym stands for "Urban space: user-oriented assistance systems and network management"), a research initiative aimed at developing new driver assistance and traffic management systems for the cities of tomorrow. The focus is on the human element and the different roles of human beings in the traffic scene – as drivers, pedestrians, cyclists, or indeed as traffic planners.

"UR:BAN will not only make a significant contribution to increased urban road safety. Through the deployment of an intelligent infrastructure and its integration with intelligent vehicles, it will also optimise traffic efficiency," says Susanne Breitenberger, UR:BAN Project Manager at BMW AG.

The UR:BAN partners' total budget over the four-year lifetime of the project will be 80 million euros. Some 50 percent of this funding will be provided by the German Ministry of Economics and Technology within the framework of the German government's 3rd transport research programme.

Three projects – one goal.

UR:BAN comprises three projects: "Cognitive Assistance", "Networked Traffic System" and "The Human Element in Traffic". The BMW Group will be making important contributions to all three of these projects.

Safety on the road with "Cognitive Assistance".

Driver assistance systems introduced in recent years are designed to promote safer driving, particularly on motorways and main roads. In the city, however, drivers face a different set of challenges. For example, they have to be able to respond o more vulnerable road users such as cyclists and pedestrians in a wide range of driving situations and often at very close quarters.

"With the help of high-resolution sensor systems capable of scanning large areas of the driving environment, our aim is to make drivers aware of hazards in good time and to help them respond safely with the goal of reducing the number and

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severity of accidents in urban driving situations," says Dr Peter Zahn, UR:BAN Project Manager at BMW Forschung und Technik GmbH.

Methods which are already being used successfully in motorway environments to assess the driving situation, identify hazards and support proper braking and steering responses must be extended and refined in order to meet the requirements of city driving.

In the Cognitive Assistance sub-project "Protection of Vulnerable Road Users", BMW Forschung und Technik GmbH is developing an assistance system to protect pedestrians. This assesses the likelihood of a collision between a pedestrian and a vehicle on the basis of the current situation and the behaviour of the pedestrian. A vehicle-pedestrian accident can then be prevented by braking and/or steering.

Detection and interpretation of the driving environment in particular is a function which makes very high demands in terms of precision and reliability. In the Cognitive Assistance sub-project "Sensing and Modelling of the Vehicle Environment", the BMW Forschung und Technik GmbH is developing high-performance algorithms for environment detection, data fusion and situation assessment.

"Networked Traffic System" for energy-efficient and stress-free driving.
This project is focused on optimising traffic efficiency in urban environments. The aim is to reduce emissions, with a particular consideration of powertrain concepts of the future (electric and hybrid drive systems).

"Applications for intelligent management of traffic, taking into account both the traffic situation and the potential for improving environmental performance, will work hand in hand with intelligent driver assistance systems to optimise driving efficiency and energy consumption," says Susanne Breitenberger, UR:BAN Project Manager BMW AG.

In the Networked Traffic System sub-project "Smart Road", BMW AG and other project partners are developing a green wave/traffic light approach assistance system. This uses advance information about traffic light phasing and the local traffic situation at intersections to ensure energy and emission-efficient driving on traffic light-controlled urban roads.

Anticipatory, stress-free driving: "The Human Element in Traffic".
To help ensure that vehicles of the future can serve as an "active helper" in hazardous situations, technical solutions must be combined with appropriate interaction concepts to achieve an optimal synthesis between safety, efficiency and comfort.

In the Human Element in Traffic sub-project "Controllability", BMW AG and BMW Forschung und Technik GmbH are developing methods for assessing these aspects in collaboration with university partners and research institutes.

The aim is to ensure not only that drivers are able to enjoy the benefits of fast-responding technical systems, designed to provide effective assistance in avoiding accidents, but that the vehicle equipped with such technologies also remains controllable for the driver at all times. In the sub-project "Behaviour Prediction/Intention Detection", meanwhile, BMW Forschung und Technik GmbH and partners in the field of research and industry are developing methods of identifying the intentions of the driver of a given subject vehicle, and other drivers, at the earliest possible stage, so that these can be taken into account in the subject vehicle's responses.

The BMW Group

With its three brands – BMW, MINI, Husqvarna Motorcycles and Rolls-Royce – the BMW Group is one of the world's most successful premium manufacturers of cars and motorcycles. It operates internationally with 25 production and assembly plants in 14 countries and a global sales network with representation in more than 140 countries.

During the financial year 2011, the BMW Group sold approximately 1.67 million cars and more than 113,000 motorcycles worldwide. The profit before tax for 2011 was € 7.38 billion on revenues amounting to € 68.82 billion. At 31 December 2011, the BMW Group had a workforce of approximately 100,000 employees.

Long-term thinking and responsible action have long been the foundation of the BMW Group's success. Striving for ecological and social sustainability along the entire value-added chain, taking full responsibility for our products and giving an unequivocal commitment to preserving resources are prime objectives firmly embedded in our corporate strategies. For these reasons, the BMW Group has been sector leader in the Dow Jones Sustainability Indices for the last seven years.

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