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UR:BAN research initiative: Urban traffic of the future will feature intelligent vehicles

- **New driver assistance systems for greater safety, efficiency and convenience**
- **Closing event on urban mobility in Düsseldorf**

Wolfsburg/Düsseldorf, 7 October 2015 – Today, in Düsseldorf, the UR:BAN research initiative (Urban Space: user-friendly assistance systems and network management) is presenting the results of its four years of work. Together with 30 partners, Volkswagen Group Research is making presentations on its intelligent and cooperative driver assistance systems for the transportation of tomorrow. In the future, they will offer drivers safer, stress-free and quick trips in the complex urban transportation environment. The two-day event will give the around 300 visitors an opportunity to learn about and experience the latest technologies and systems in direct interaction with experts.

Since January 2012, UR:BAN has been working on innovative assistance systems for complex traffic situations in urban traffic, which are increasingly characterised by dynamism, a wide variety of traffic participants and vehicles. Volkswagen Group Research participated in all three UR:BAN project pillars: Cognitive Assistance, Human Factors in Traffic and Networked Traffic System.

In the **Cognitive Assistance** subject area, Volkswagen Group Research developed innovative assistance systems that assist the driver in urban traffic, inform the driver in a timely way, recommend suitable manoeuvres and even intervene in an emergency. These systems operate in an effective and situation-specific way to offer safe longitudinal and transverse guidance that assists the driver in driving in urban traffic that in an anticipatory, safe and relaxed manner.

For instance, the “Lane changing assistant” assists with active interventions in longitudinal and transverse guidance when switching driving lanes in dense traffic on urban approach roads and arterial roads. During a manoeuvre, the system observes surrounding vehicles with its 360° monitoring system and helps the driver to select an open space in the destination lane and approach it by activating indicators and making steering movements.

The “Bottleneck assistant”, on the other hand, helps drivers when there are obstacles that are partially or completely blocking the driving lane – such as parked vehicles – leaving just a very narrow gap for passage. An advanced development of the Lane Assist system – which has already been implemented in production cars – uses a 3D sensor system to detect obstacles adjacent to and within the car's own driving lane. The system checks whether a

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safe path exists, and it assists by active steering intervention when driving past the obstacle while maintaining a safe distance.

The “recommended speed based on the surroundings” function assists the driver in choosing a driving speed that is appropriate for a given situation. The active accelerator pedal gives the driver direct tactile feedback on whether the driver should accelerate or brake, e.g. when approaching a traffic light. The “Emergency braking assistant” reduces or even avoids imminent collisions in the urban environment by situation-specific braking and steering interventions.

Along with relieving the driver's work and enhancing convenience, the driver assistance functions also make a contribution toward improving traffic safety. The potential for avoiding and reducing accidents is being assessed by the Accident Research department of Group Research.

In the second pillar of the **Human Factors in Traffic** project, Volkswagen Group Research is working on a new type of human-machine interface. This is an intelligent communications channel that will take information, filter and prioritise it and present it to the driver as needed. It thereby contributes significantly toward achieving an anticipatory style of driving, it can make hazardous situations safer and it promotes low-emissions driving.

In the **Networked Traffic System** subproject, Volkswagen Group Research is developing the “Intersection pilot” with the goal of improving traffic efficiency in the vicinity of intersections based on Car-to-X communication. This assistance function informs the driver locally about traffic nodes located ahead. It supports the driver with optimal driving manoeuvres and simultaneously enables improved traffic light switching by routing vehicle information.

The “Merge and start assistant” uses information from the intelligent traffic infrastructure. For one, it adjusts the vehicle's speed immediately before entering an intersection to enable driving through on a green traffic light phase without having to stop. For another, it ensures that traffic starts up again quickly when the traffic light switches to green. This enables better utilisation of the short green phase in the interest of all traffic participants.

The “Emergency vehicle assistant” informs all traffic participants directly of approaching emergency vehicles. It optimises traffic light switching and ensures more rapid passage of the emergency vehicle that is safer for all vehicles.

About the UR:BAN project

Urban space: user-friendly assistance systems and network management

31 partners from the automotive and supplier industries, electronics and software companies, research institutes and cities, have joined together in the consortium project UR:BAN. In joint research work, they are developing new driver assistance and traffic management systems for city driving with a completion date of early 2016. The total budget for the research consortium is 80 million euros. Around 50 per cent of this amount is contributed by the

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German Federal Ministry for Economy and Energy in the framework of the 3rd traffic research programme of the German federal government.

Participants include: Adam Opel AG, AUDI AG, BMW AG, BMW Forschung und Technik GmbH, Robert Bosch GmbH, German Federal Institute for Road Transportation, Continental Automotive GmbH, Continental Safety Engineering International GmbH, Continental Teves AG & Co. oHG, Daimler AG, German Aerospace Centre e.V., Fraunhofer Institute for Labour Economy and Organisation (IAO), GEVAS Software GmbH, Heusch/Boesefeldt GmbH, University of Applied Sciences Technology and Business of the State of Saarland, ifak Magdeburg e.V., MAN Truck & Bus AG, PTV Group, Institute of Automotive Engineering at the RWTH University in Aachen, state capital Düsseldorf, city of Kassel, Tech. University of Braunschweig, Tech. University of Chemnitz, Tech. University of Munich, TomTom Development Germany GmbH, TRANSVER GmbH, University of the German Army in Munich, universities at Duisburg-Essen, Kassel and Würzburg and Volkswagen AG. Numerous additional university and research institutes as well as small and mid-size companies are also participating in the projects as subcontractors.

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