

## **Connected Cars Create Smart Spaces** **Wolfgang Wahlster, DFKI**

Intelligent Car2X technologies create smart spaces inside connected cars and their environment. Future cars serve as mobile sensors, mobile internet nodes and mobile compute servers. We present a new generation of car assistants that provide a broad range of situation-aware services from local danger warnings, intelligent intersection and traffic light management to persuasive eco-driving coaching. Three types of situational context are being modeled in our systems: The communication situation (i.e. the multimodal dialog context of the communication with passengers in the car, other drivers, and people outside the car), the driving situation (e.g. high-speed driving, relaxed driving, stopping, parking), and the road with its traffic signs and ambient displays. We will show how a digital black box of the car provides a detailed diary of the car that provides long-term context information. The smart key of our test car can store the shopping list of the driver and can be used for NFC payment in the supermarket. The in-car sensors detect missing shopping items and plan the route accordingly. The car monitors temperature and the air-conditioning when frozen products are being carried. We will illustrate our approach with various video clips from two instrumented BMW and Daimler test vehicles. Finally, we will discuss some future work based on always-on and all-electric cars that provide an emotional experience and social network behavior.

**Professor Wolfgang Wahlster** is the Director and CEO of the German Research Center for Artificial Intelligence (DFKI) and a Professor of Computer Science. DFKI is the world's largest contract research center with more than 800 scientists, working for its industrial shareholders including BMW, Daimler, Deutsche Telekom, John Deere, Intel, SAP, EADS and DHL. More than 60 hightech spin-off companies have been founded by DFKI. Professor has published more than 180 technical papers and 9 books on mobile and multimodal user interfaces, instrumented environments, the semantic web, the internet of things and the internet of services. He is an AAAI Fellow (since 1993), an ECCAI Fellow (since 1999), and a GI Fellow (since 2004). In 2001, the President of Germany presented the German Future Prize to Professor Wahlster for his work on language technology and intelligent user interfaces, the highest scientific award in Germany. He was the first German computer scientist elected Foreign Member of the Royal Swedish Academy of Sciences, Stockholm 2003. In 2004, he was elected Full Member of the German National Academy of Sciences Leopoldina, that was founded in 1652. In 2006, he has been awarded the Federal Cross of Merit, First Class of Germany. He has also been appointed member of the Research Union "Business - Science" as chief advisor for ICT research of the German government and served as a partner for innovation of Chancellor Dr. Merkel. Since 2009 he is a member of the Executive Steering Board of the EIT ICT Labs of the European Institute of Innovation and Technology. In addition, Dr. Wahlster serves on the Executive Board of the International Computer Science Institute at UC Berkeley. He is in the editor of Springer's LNAI series and on the editorial board of various top international journals like CACM.