SEMINAR OF

"INTELLIGENT TRANSPORT SYSTEMS DESIGN AND SAFETY"

9-10 May 2006

Prague, Czech Republic

Short CONTENT OF LECTURES AND CV OF SPEAKERS AND AFFILIATIONS

Joseph Krems, Chemnitz University of Technology, Germany

Measurement methods and techniques for evaluating ITS with respect to safety-relevant criteria

On-board Traffic Information and Control Systems (TICS) for drivers are becoming more and more common these days. While driving, these systems provide information about the status of the vehicle, the optimal route, traffic jams, etc. Despite the usefulness of such systems, one could be concerned about the potential distraction and the additional cognitive load these systems impose on the driver, leading to an increased risk of accidents. Thus, it becomes obvious that methods for assessing the HMI of in-vehicle information systems for safety are needed. One possibility is to investigate new systems on-board while driving in real traffic or a driving simulator. Because this approach is very demanding and expensive, looking for an easy-to-use method applicable in the very early stages of the system development would be worthwhile. Several techniques like the occlusion technique or the peripheral detection task have recently come under consideration as candidates for an assessment tool. The major aim of the talk is to give an overview over techniques available and to discuss the validity and usability of several techniques for HMI assessment of in-vehicle information systems.

Josef F. Krems is Professor of Cognitive and Applied Psychology. He got his PhD in Psychology (Psycholinguistics), worked after that on expert systems (mainly diagnosis) and got a second PhD (Habilitation) for studies on expertise. He then moved to the US for a while as a visiting assistant professor at the Department of Medical Informatics at Columbus, Ohio. Back in Germany in 1994 he went to the University of Potsdam continuing his work on cognitive psychology. In 1995 he moved to Chemnitz University of Technology where he established a new department of applied psychology. He is still there as a professor of cognitive and industrial psychology. During the last 5 years traffic psychology has become one of his major topics of research.

Chemnitz University of Technology, Germany

Chemnitz University of Technology (CUT) is one of four Universities of Saxonia, Germany. As a university of technology it offers a wide variety of courses and research programs from engineering sciences such as microtechnology, process engineering, information technology. But there are also programs from the social and behavioural sciences like psychology and sociology, reflecting the fact that interdisciplinary qualifications are becoming more and more important. The department of psychology was founded in 2000 with a specific profile focussing on human-machine interaction. The department's main research emphasis is on "behaviour in complex systems: human-machine-interaction, management of resources, conflict resolution". Human behaviour is considered as goal oriented, but limited by resources of the processing system and therefore sensitive to conflicting actions in natural and artificial environments. This area concentrates on aspects that concern the development, use and evaluation of technical support and assistance systems by individuals or organisations. Beginning with the foundation of the department traffic psychology became a major topic of research as well as of teaching in the psychology master and PhD program. As part of the department the Laboratory of Applied Cognitive Sciences (Director: Prof. Dr. J. F. Krems) focuses on: diagnostic reasoning in technical domains, design and management of information, cognitive workload and divided attention, diver distraction, skill acquisition in highly complex domains.