A system design for teleoperated road vehicles

Abstract:
The possibility to provision road vehicles unmanned and on demand will have an important influence on the development of new mobility concepts. We therefore present the teleoperated driving of road vehicles. This paper outlines the basic concepts, including a static multi-camera design, an operator interface with a sensor fusion based display, and a cellular network based video transmission and communication architecture. We also show how we manage to fulfill the system’s technical requirements with our hard- and software design and point out the occurring problems due to communication limitations and lack of situation awareness. Finally, we propose solutions to guarantee driving safety.