

Dr. Steven Shladover, seminar 2012-02-21



Progress Toward Automated Driving

Abstract

The concept of automated driving is not new, even though it is still regarded as futuristic. Historical examples going back to 1939 are shown to indicate how long the idea has been considered. The distinction between "automated" and "autonomous" is explained in order to clarify the operational concepts of driving automation, and the advantages of cooperative over autonomous automation are shown. The distinctions between partial and full automation and between operations in dedicated lanes and in mixed traffic are also explained, in the context of practical considerations of human factors and technical feasibility. Progress is shown on some of the important steps that have already been taken toward automated driving in PATH's experiments on cooperative adaptive cruise control, automated precision docking of transit buses and automated platooning of heavy trucks. The most important remaining technical and institutional challenges are then identified.

About:

Dr. Steven Shladover is the Program Manager, Mobility at the California PATH Program of the Institute of Transportation Studies of the University of California at Berkeley. He joined the PATH Program in 1989, after eleven years at Systems Control, Inc. and Systems Control Technology, Inc., where he led the company's efforts in transportation systems engineering and computer-aided control engineering software products. Dr. Shladover received all of his degrees in mechanical engineering, with a specialization in dynamic systems and control, from M.I.T., where he began conducting research on vehicle automation in 1973. He has been active in ASME (former Chairman of the Dynamic Systems and Control Division), SAE (ITS Division) and the Transportation Research Board (Chairman of the Committee on Intelligent Transportation Systems from 2004-2010, and member of the Committee on Vehicle-Highway Automation from its founding until 2010), and was the chairman of the Advanced Vehicle Control and Safety Systems Committee of the Intelligent Transportation Society of America from its founding in 1991 until 1997. Dr. Shladover leads the U.S. delegation to ISO/TC204/WG14, which is developing international standards for "vehicle-roadway warning and control systems".