

Developing a virtual driving environment to test dose related effects of alcohol and drugs on simulated driving performance

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Abstract

Drug use and especially multiple drug use and drug-alcohol combinations among drivers is an important risk factor for traffic accidents. The incidence of drivers who drive under the influence of psychoactive drugs in actual traffic is considerable (5-17%). Since drug- and medicine use is proportionally increasing over the years, special efforts have to be directed towards gaining better knowledge of the various aspects of this problem before developing appropriate solutions. The objective of the EU-project DRUID (Driving under the Influence of Drugs, Alcohol and Medicines) is to give scientific support to the EU transport policy (White Paper, 2001) by establishing guidelines and measures to combat impaired driving. In the framework of DRUID, a series of experiments will be carried out in driving simulators and on the road studies, to assess the effects of alcohol and drugs on driving performance. In order to standardize the experiments across laboratories a standard virtual world, including relevant scenarios for testing effects of alcohol and drugs has been developed.

Introduction

Traffic safety is compromised whenever people participate in traffic under the influence of psychoactive substances, i.e. alcohol and prescription- and non-prescription drugs (Movig et al., 2004, Ramaekers, 1998). According to Christophersen and Morland (1997) the incidence of drivers who drive under the influence of psychoactive drugs in actual traffic is considerable (5-17%). Since drug- and medicine use is proportionally increasing over the years, special efforts have to be directed towards gaining better knowledge of the various aspects of this problem before developing appropriate solutions.

The objective of the EU-project DRUID is to give scientific support to the EU transport policy, which states that by the year 2010 the number of traffic accidents should be reduced to half (White Paper, 2001). DRUID aims to do so by establishing guidelines and developing measures to combat impaired driving under influence. In the framework of DRUID, a series of experiments will be carried out in driving