

Evaluation of an Adaptive warning system with help of a mini-FOT - A pilot study

Authors: Johan G Karlsson (Autoliv), Anna Anund (VTI), Carina Fors (VTI), David Hallvig (VTI), Benny Nilsson (Autoliv), Ola Boström (Autoliv) and Arne Nåbo (VTI).

Affiliations: Autoliv Research, 447 83 Vårgårda, Sweden, Phone: +46-322 - 62 63 00, email: johan.g.karlsson@autoliv.com

There is a hypothesis that a reduced number of warnings, as a consequence of an adaptive strategy, will increase the drivers' trust for a system. The aim with this work was to evaluate drivers' responses and experiences of an adaptive warning system by using a mini-FOT approach. Questions in focus were: Does an adaptive warning system mean that the driver more often a) experience it as relevant and b) makes a correct counteraction, compared to if it is not adaptive? In the non-adaptive mode (NAM) warnings from four systems (collision, lane departure, distraction, drowsiness) were given independently of each other, while in the adaptive mode (AM) the warnings were adapted to driver status as well as to driving situation. 10 commuters drove an equipped vehicle for one week each with non-adaptive mode (2.5 day) and adaptive mode (2.5 day) used in a balanced order. The participants were instructed to press a "relevant" or "not relevant" button, when given a warning. They were also asked to motivate their arguments for the decision by a short spoken message, which was automatically recorded. In addition they filled out questionnaires and were interviewed twice. On average the drivers received 6.1 warnings/h in the NAM and 1.9 warnings/h in the AM. Drivers reported a higher level of relevant warnings in the NAM (60%) compared to the AM (32%). The reason for this is unknown but may be due to technical problems. The voice recordings helped understanding the drivers' experiences of the warnings. In all situations in both modes the drivers' counteractions when receiving a warning were correct. Generally the drivers were positive to the concept of adaption. Most of the criticisms were related to technical problems of the stand-alone systems. The mini-FOT method worked well and may be a valuable way to evaluate systems before realization of a larger scale FOT.

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