

Sub-project 1

Behavioural Effects and Driver-Vehicle-Environment Modelling

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Sub-project 1: Behavioural Effects and Driver-Vehicle-Environment Modelling



TOWARDS FUTURE AUTOMOTIVE HMI

AIDE final workshop and exhibition April 15-16, 2008, Gothenburg

SP1's main objectives:

- To create a model for Driver, Vehicle and Environment (DVE) aimed at predicting Drivers' behaviour according to different driver, vehicle and environment conditions
- To experimentally study short term and long term behavioral effects when using ADAS and IVIS, to include them in the design process of the system and its interface
- To implement and validate a computerized numerical simulation of the DVE (SSDrive)

Key activities:

- Empirical studies on behavioral effects of ADAS/IVIS (learning, behavioral adaptation etc.)
- Modeling and simulation of the DVE system



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Who worked on these ideas: SP1 partners

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CERTH-HIT



PSA PEUGEOT CITROËN



ITS



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How we worked: SP1 Work Packages



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WP1.1

DVE
Model



Modelling Algorithms :

- Task Analysis;
- Independent Variables
- Parameters
- Error Generation

WP1.2

Field Experiments on
Behavioural Adaptation



Effects of adaptation :

- Short vs. Long term;
- Parameters affected by adaptation
- Specific affects of ADAS and IVIS

WP1.3

DVE
Simulation



Simulation characteristics :

- Software Language;
- DVE implementation (Agents, BB, etc.)
- Special correlations (Control Theory, Fuzzy, Neural networks, etc.)

Overall- DVE – Predicting
Model/Simulation



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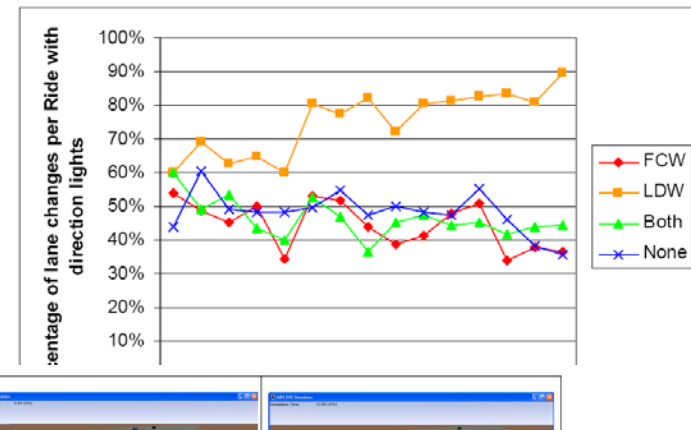
SP1 Parallel Session structure



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1. Behavioural effects of Driver Assistance Systems
2. Driver - Vehicle Environment Modelling and Simulation



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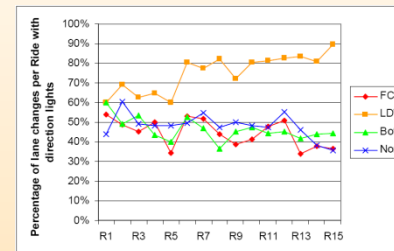
Behavioural effects of Driver assistance Systems



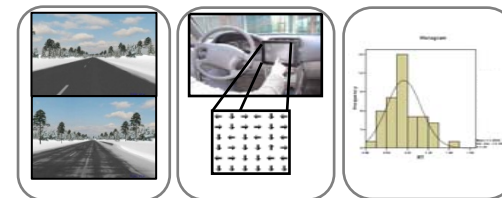
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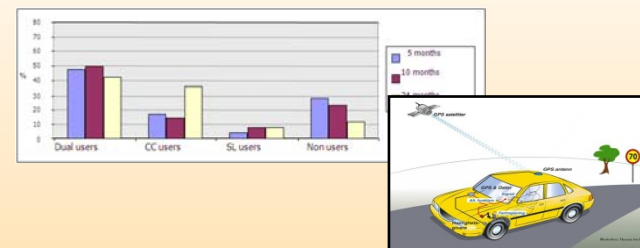
- Introduction on objectives and overview of experiments (Farida Saad, INRETS)



- Short Term results (Magnus Hjälmdahl, VTI)



- Long Term results (Frank Lay, University of Leeds)



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Behavioural effects of Driver assistance Systems

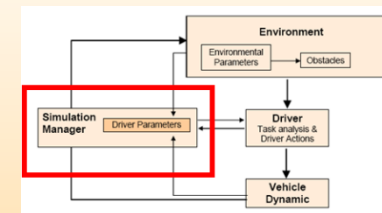


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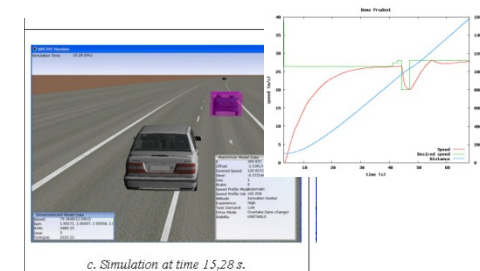
- **Driver- Vehicle Environment model**

(Oliver Carsteen, University of Leeds)



- **Driver - Vehicle Environment simulation**

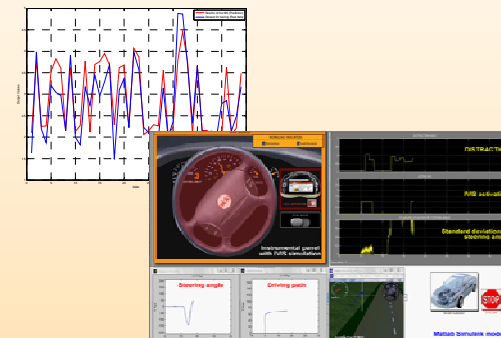
(Mauro Marchitto, KITE Solutions)



- **Tuning and validation of Driver model**

(Fabio Tango, Centro Ricerche FIAT; Luca

Minin, University of Modena and Reggio



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