Intro
2008 Driver Metrics Workshop
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Introduction

HMI-Design and -Validation

Function, Use-cases Requirements

Installation

Information Presentation

Interaction, Logics

System behaviour

HMI Design

Compatibility to Driving Task

Usability

HMI - Evaluation

HMI-Concept

HMI Design and -Validation

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HMI - Evaluation

HMI-Concept
Statements on Evaluation Methods and Metrics
Aspects of their Usability in Development

Developers at innovative OEMs need flexibility plus feedback on their conceptual achievements.

Testing and evaluation happen continuously during the development process.

Significant difference is not in any case a relevant effect.

Set of methods and metrics should be applicable to all devices and functions independent of their degree of integration.

Therefore methods and Metrics have to be ...

  replicable, objective, valid

  easy and robust in application
  also by non Human Factors experts.
**HMI – Process applied by BMW**

**Methods for HMI Evaluation**

<table>
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<tr>
<th>Increase in Face Validity</th>
<th>Without driving-task</th>
<th>With (abstract) driving-tasks</th>
<th>Evaluation in Laboratory (PC, mock-up)</th>
<th>Evaluation in vehicle</th>
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<tr>
<td>low</td>
<td>HMI Simulation</td>
<td>Field-test</td>
<td>Objective Performance data</td>
<td>Usability, questionnaire</td>
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<td>Static Description</td>
<td>Field-test controlled env.</td>
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<td>Dynamic Driving Simul.</td>
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<td>Static Driving Simulator</td>
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<td>Lane Change Task</td>
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<td>Occlusion</td>
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<td>PDT object &amp; event detection</td>
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**Evaluation of interaction and the effect on primary driving task - Usage of various methods**