



Ausgewählte Charts  
zum Usability-Stammtisch 03/2008

## **HMI in the Automobile**

4 March 2008

## Driving tasks with interfaces:

Primary driving tasks      accelerating, breaking, steering, gear change

Secondary driving tasks      indicating, lights, wiping, etc.

Information      traffic

Communication      telephone

Entertainment      radio, music media

Driving Assistance      navigation, distancing, lane changing and keeping

## Usability test set-up

### Pre-questionnaire

- prior experience
- daily use
- needs and motifs
- expectations
  
- affinity and attitude to technology

### Usability Test

- first impression
- mental model
- use cases with UsePrisma®
- detailed evaluation
  
- questions of specific interest

### Final questionnaire

- lasting impression
- pro and contra
- general acceptance
- conjoint/ pricing/ preferences
- benchmark and comparison
- optimization



Individual modules can be chosen depending on questions posed.

## UsePrisma®

- Evaluation of intuitive control for entire system, individual functions down to individual command and control steps.
- Generation of quantitative and qualitative usability data by classification of command and control actions with subsequent statistical analysis.
- Evaluation of performance in use cases
- Identification of inconsistencies in menu- or command and control logic
- Deviation of user's mental models to control logic
- Indices on intuitive command and control
- Learning effects and curves



Measurement of performance in usability test, quantification of subjective impression and evaluation.

### system-based Intuition Index



#### Comparison

- of control steps, use cases
- of systems, functions
- with benchmark

### person-based Intuition Index

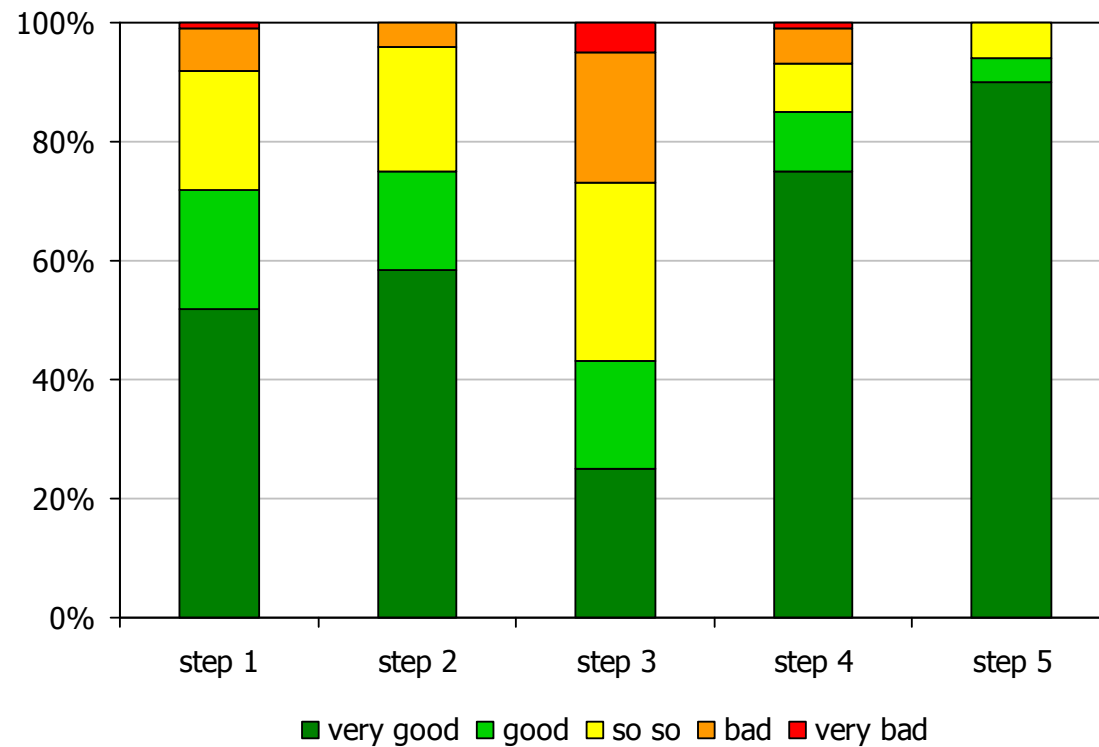


#### Comparison

- personal characteristics
- person-based measurements
- subjective evaluations

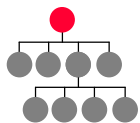
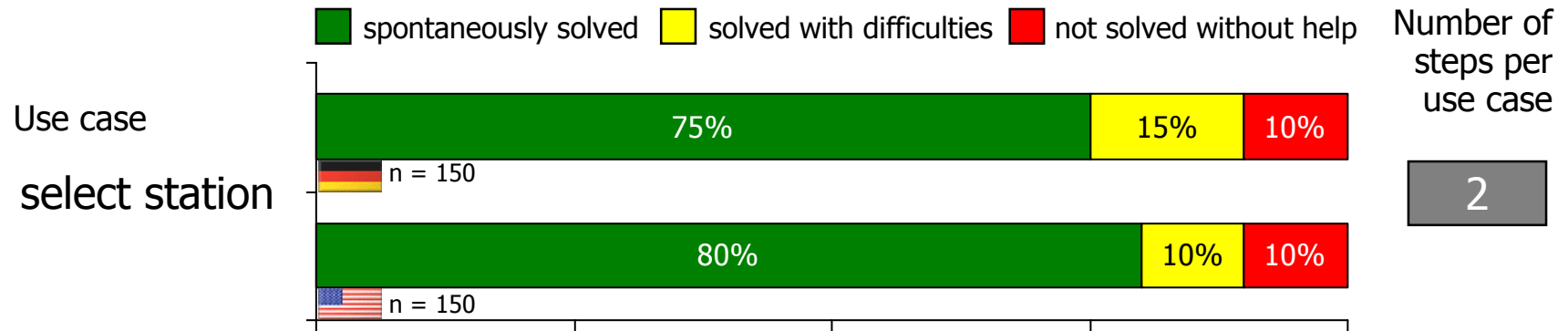
system-based Intuition Index, distribution of control categories

5-step use case, command and control per step



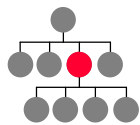
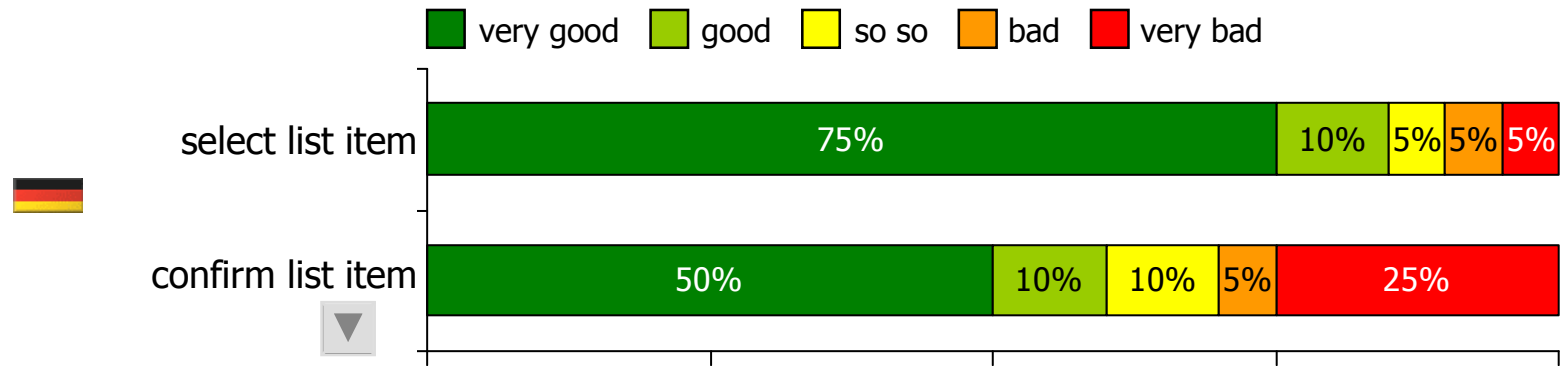
system-based Intuition Index, use case solution performance

Results on use case level: use case solution performance



system-based Intuition Index, difficulties on step level

Results on step level: distribution of command and control categories




system-based Intuition Index, error analysis on step level


Results on step level: error analysis

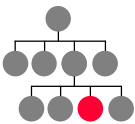
**0,50** intuition index of step




 confirm FM station by pressing controller

**Error:**

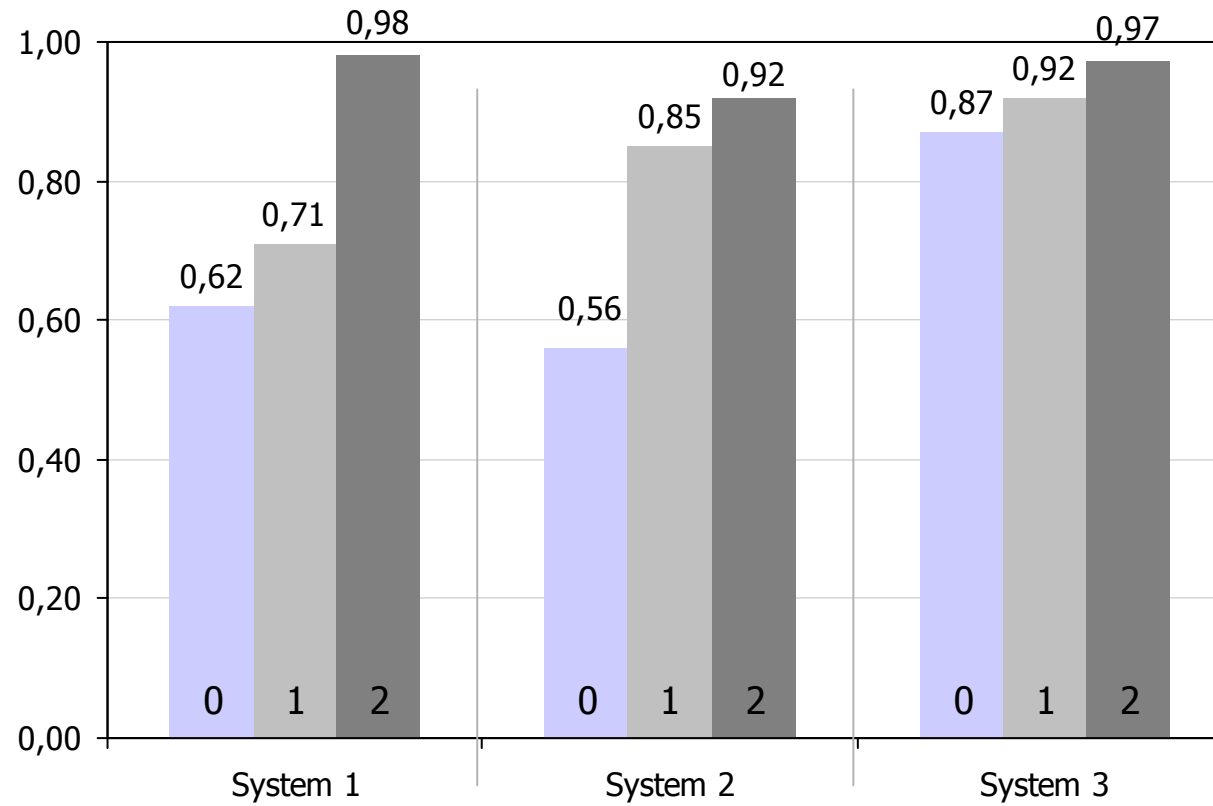
-  25% error by tilting controller right → change to option menu
- 20% error by turning controller → change FM station
- 15% error by pushing OPT-button → change to option menu
- 10% error by pushing BACK-button → go one step back



 The simple controller press was in this context not obvious. Support graphically that FM-station has to be confirmed by pushing the controller.

system-based Intuition Index, learning curves

Intuition Index for two repetitions



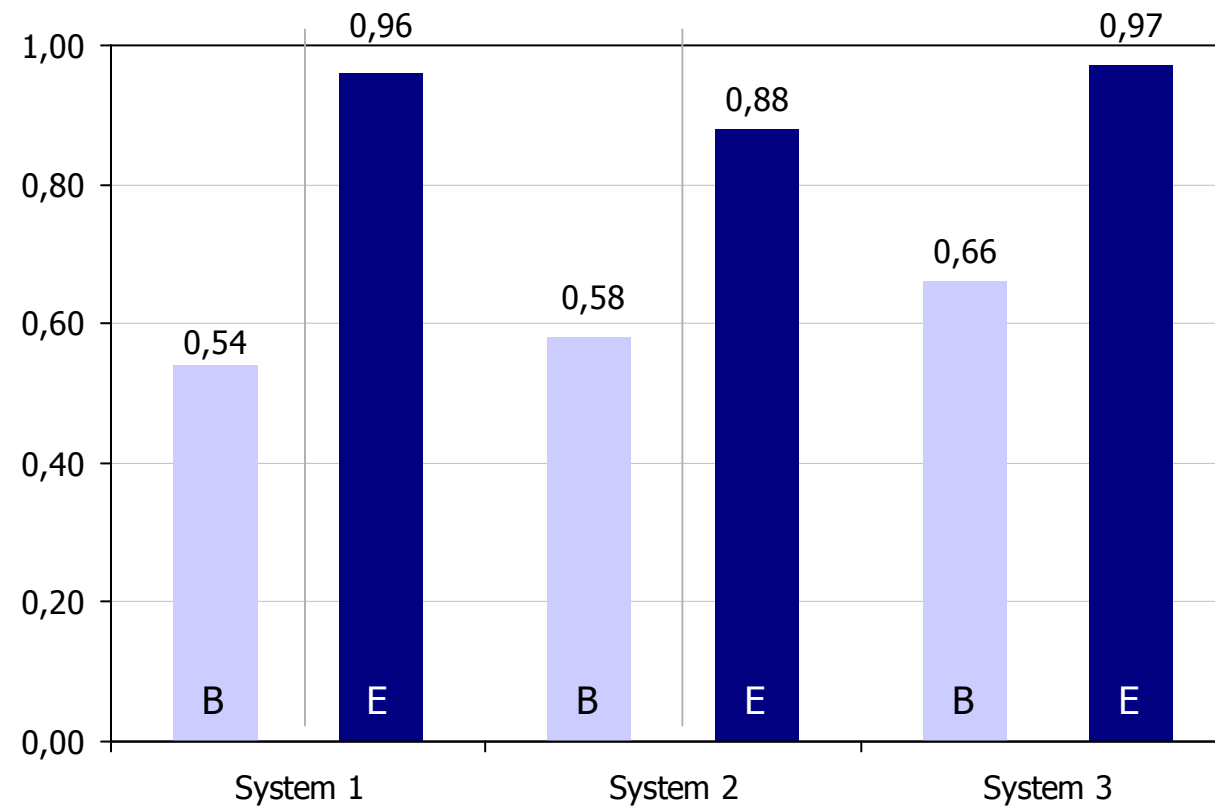
person-based Intuition Index and age of respondents

Intuition Index as a function of respondents' age



## person-based Intuition Index of different target groups

## Intuition Index for beginners and experts



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