Automotive HMI: now and in the future

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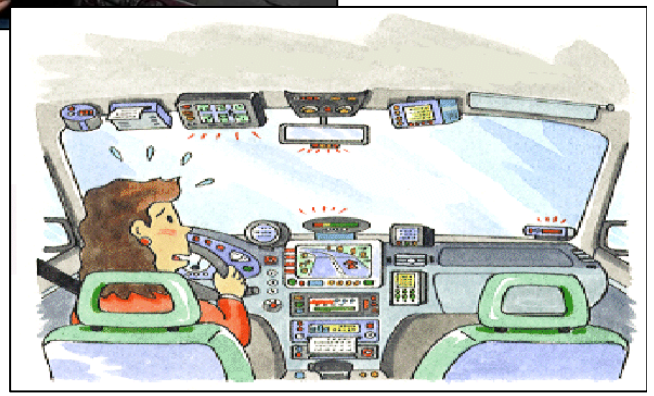
Automotive HMI: Current status and future challenges



Major achievements ten last years

- Driving task related
- From complex to simple visual representations
- From HMInterface towards HMInteraction
- Multimodal
- First forms of integrated HMI
  - use one HMI,
  - integration of functions and services,
  - manage information
- Take workload and driving environment into account
  - -> workload manager

Major problems, now and in coming ten years

- Safe use (minimal distraction, which criterion to use?)
- Adaptive HMI (workload not the same in each situation)
- Adaptable HMI (workload not the same for different drivers; drivers have their own needs and preferences)
- Driver state monitoring

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Most promising solutions

- Integrated and adaptive (and adaptable) interfaces important for safe and effcient interaction between driver and system
- Workload related
- Monitoring of road and traffic environment
- Driver state monitoring and development of normative driver model

Research needs

- Integral test and development environment, including dynamic task environment

- Naturalistic driving studies and long-term and large scale FOTs