Standardisation activities in the field of HMI for road vehicles
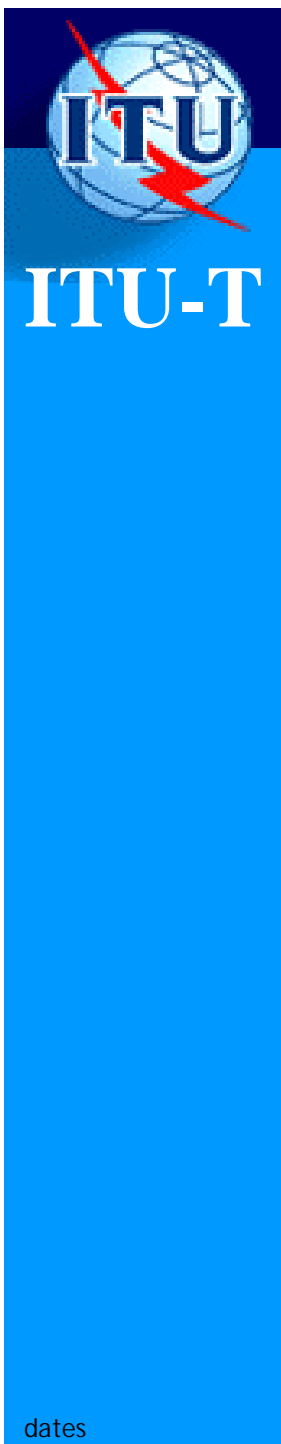
Dr. Christhard Gelau

Bundesanstalt für Straßenwesen/Federal Highway Research Institute (BASt)

Department "Automotive Engineering",

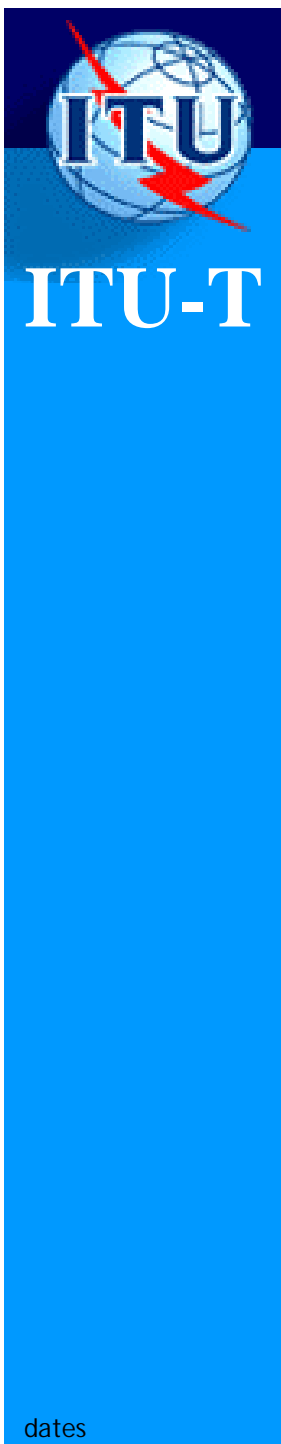Unit "Vehicle Safety Evaluation, Driver Assistance Systems"
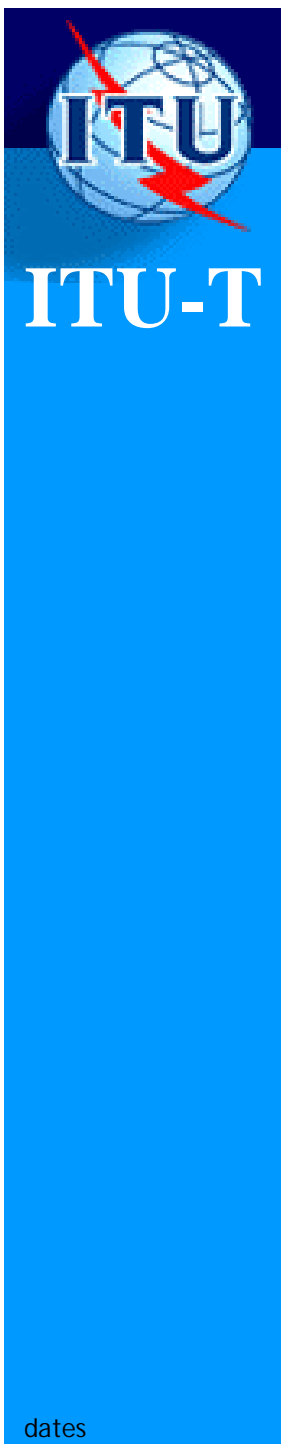
Germany

ISO/TC 22/SC 13/WG 8 "MMI":

- **Convenor:** Dr. Christian Heinrich (DaimlerChrysler)

- **Secretariat:** DIN/FAKRA (Walter Sicks)

- **Membership:** Germany, France, U.K., Italy, The Netherlands, Czech Republik, Sweden, USA, Australia, Canada, Japan
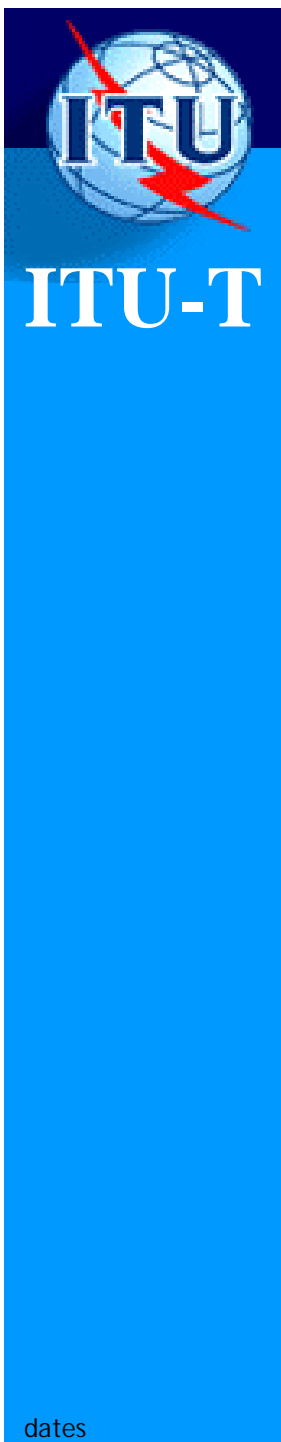
ISO/TC 22/SC 13/WG 8 "MMI":

- **Liaison:** CEN/TC 278/WG 10 (European ISO experts)
- **German ISO experts:** FAKRA/DKE-GK 717/AK 10 "MMI"
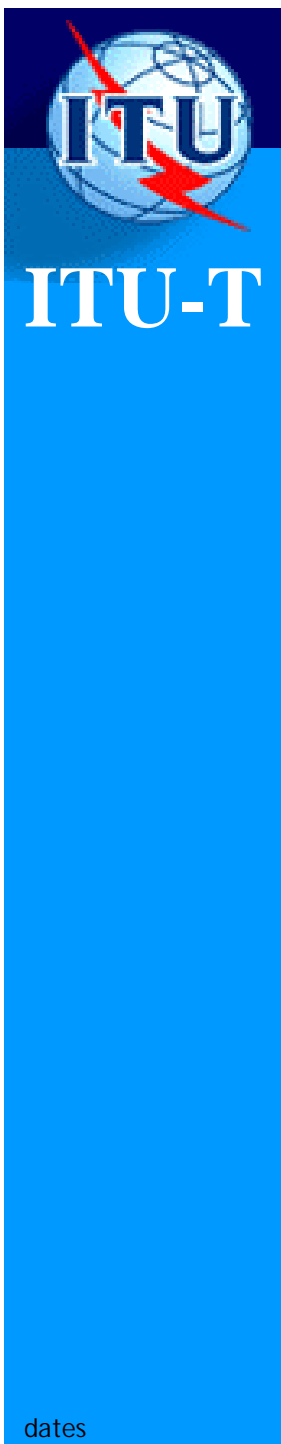- **Goal:** Efficient networking and avoidance of double work

Overview of the ISO/TC 22/SC 13/WG 8 projects:

- Dialogue Management
- Auditory Information Presentation
- Measurement of Driver Visual Behaviour
- Visual Information Presentation
- Suitability of TICS
- Priority of TICS
- Process requirements for driver system integration
- Warning Systems in Vehicles
- Occlusion Method
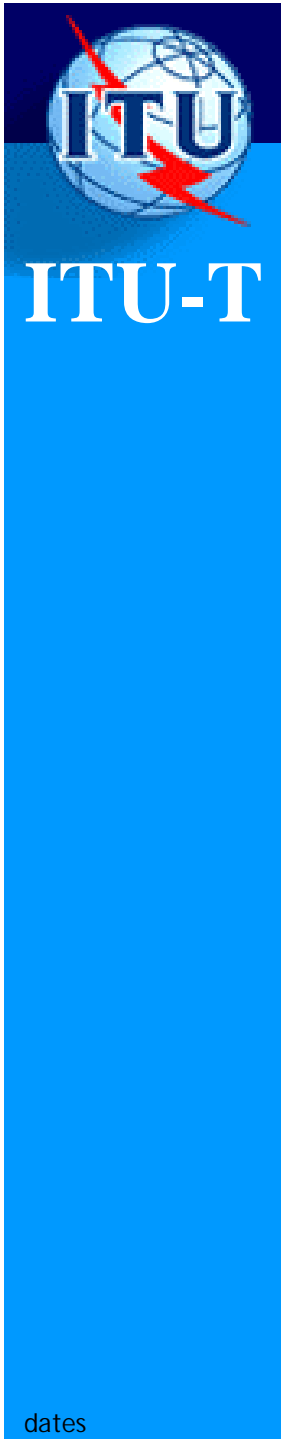- Warnings Integration
- Lane Change Test

ISO 15005: Dialogue Management Principles and Compliance Procedures

- **Status:** International Standard

- **Summary:** Requirements and recommendations on the design of human-machine dialogues like interruptability, controllability, consistency and system reaction time.
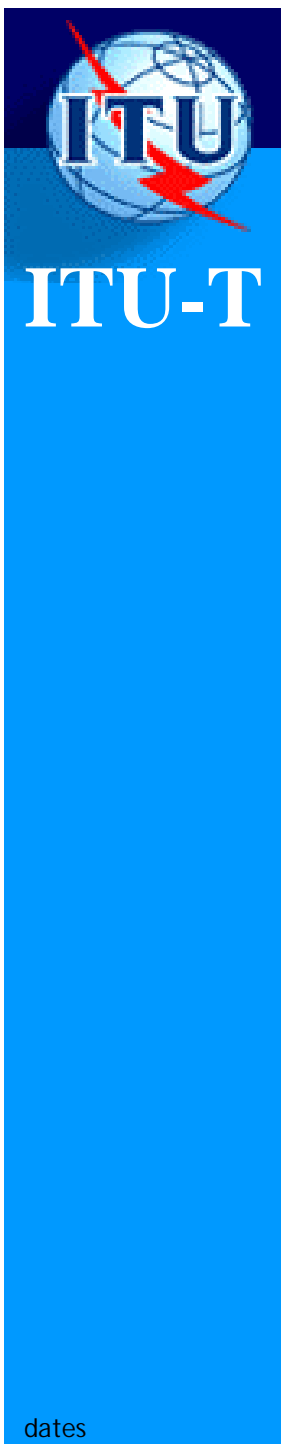
ISO 15006: Auditory Information Presentation

- **Status:** International Standard

- **Summary:** Procedure for testing the understanding of auditory signals, recommendation on prioritisation of auditory messages and requirements on multiple coding of safety-relevant information.
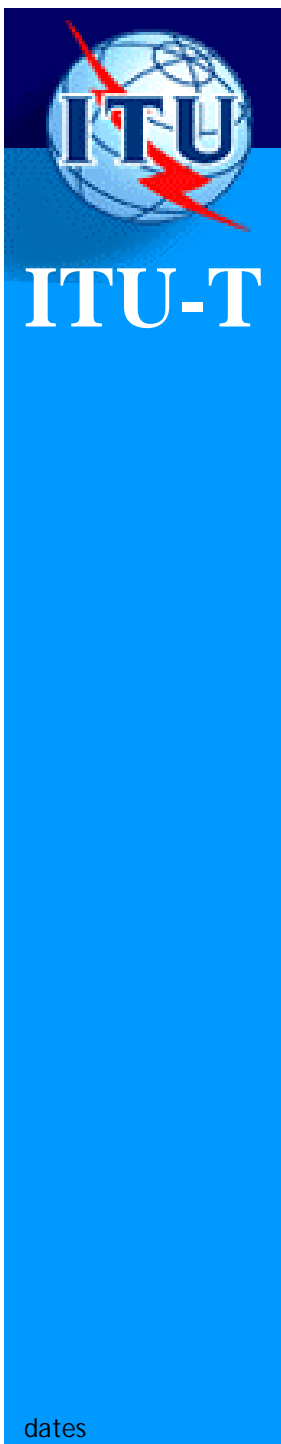
ISO/TS 15007: Measurement of Driver Visual Behaviour

- **Status:** ISO Technical Specification

- **Summary:** Definition of the basic parameters when measuring viewing behaviour by means of video systems (e.g. glance time, dwell time etc.) and recommendations on the mounting and calibration of a video system.
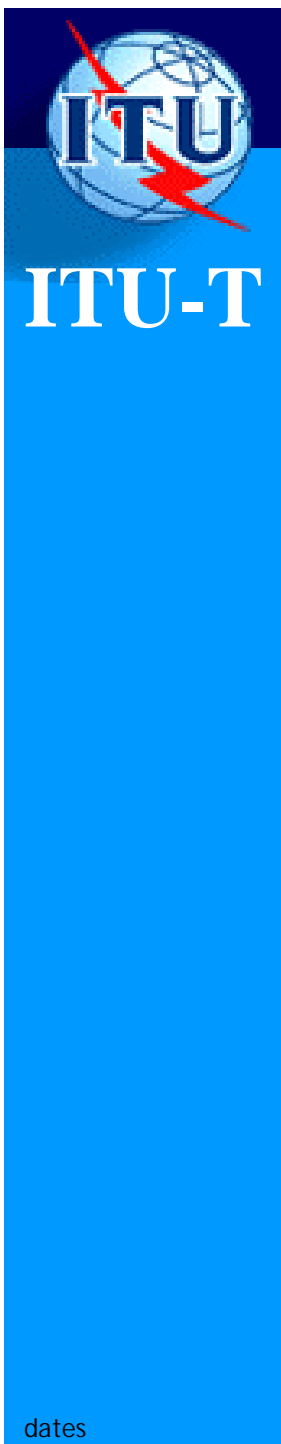
ISO 15008: Visual Information Presentation

- **Status:** International Standard

- **Summary:** Requirements on the optical features of visually presented information like contrasts at night or at daylight, combination of colours and font sizes.
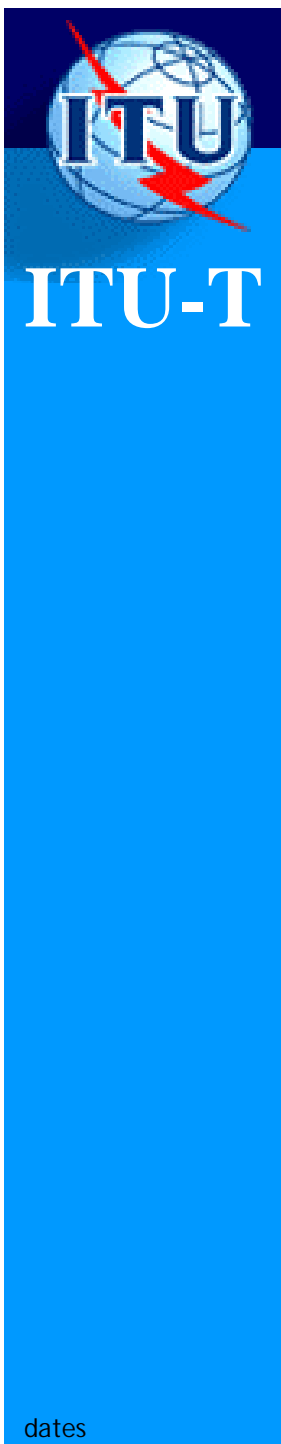
dates

ISO/TS 16951:Procedure for Determining the Priority of On-Board-Messages Presented to the Driver

- **Status:** ISO Technical Specification

- **Summary:** Description of <u>two methods</u> (index method, matrix method) on how to decide about the priority of incoming messages by means of expert judgements.

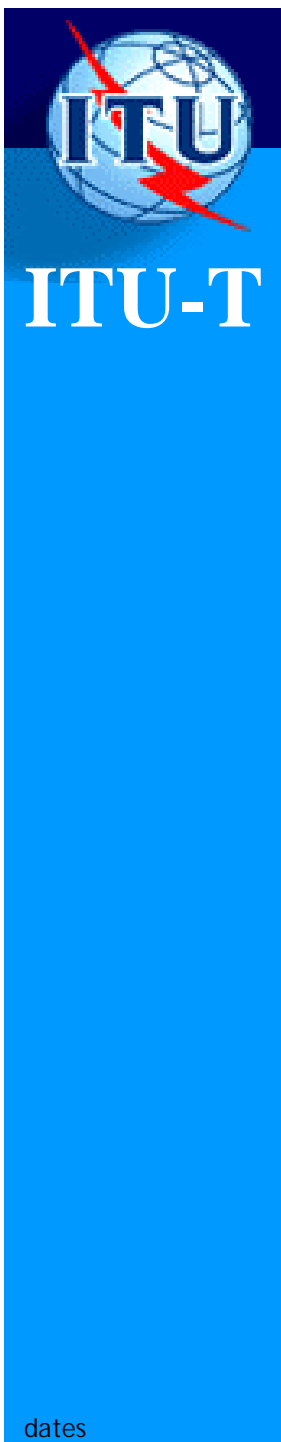# Process requirements for driver system integration

- **Status:** not accepted

- **Summary:** Process standard which specified qualification and responsibilities of the design team and the management, audits, usability test, quality management etc. comparable to ISO 9000.

ISO/TR 16352: Warning systems in vehicles

- **Status:** Technical Report

- **Summary:** Literature Review funded by the German delegation

Warnings Integration

- **Status:** Preliminary Work Item (PWI)

- **Summary:** Project promoted and co-chaired by the Japanese and U.S. delegation which aims at the definition and design of warning types.
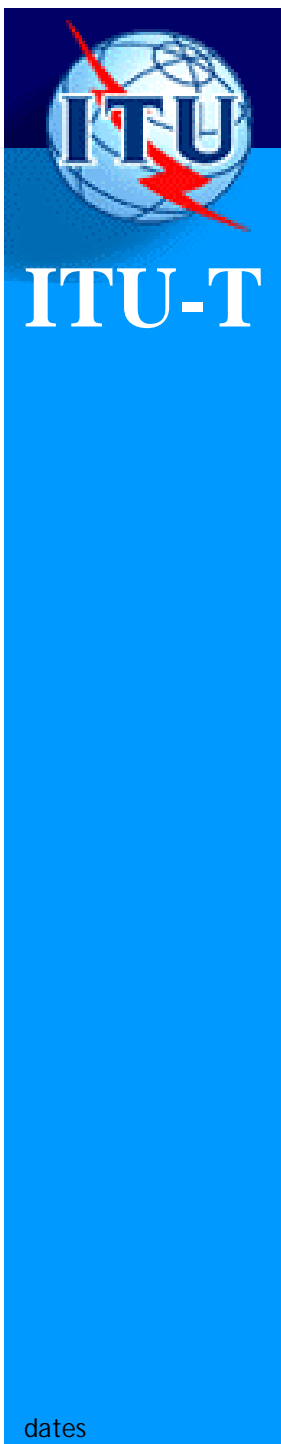
ISO 16673: Occlusion Method

- **Status:** Committee Draft (CD)

- **Summary:** Description of the <u>Occlusion Method</u> as a tool to assess the MMI of TICS under the aspect of interruptability.

- **Occlusion Method:** Systematic control of the time interval during which an object can be viewed while performing a certain task on it.
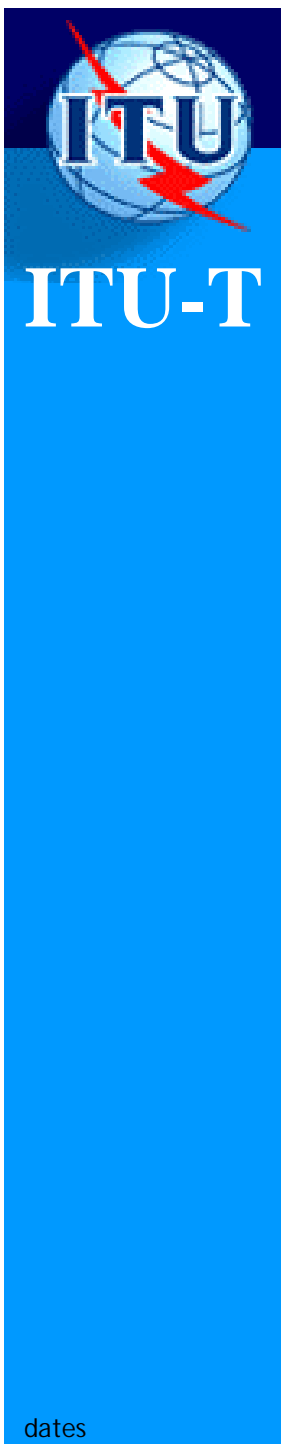
Lane Change Test

- **Status:** Preliminary Work Item (PWI)

- **Summary:** Description of a simple simulator task as a method to assess the level of distraction caused by an in-vehicle task.

Summary and conclusions

- Progress has been made in the field of standardisation of HMI

- Dynamic process paced by technological developments

- Relevant input for regulatory world-wide regulatory activities (EC eSafety initiative, JAMA, AAM)

Thank you for your attention!