Special Session title
5th Special Session on Human Factors in Intelligent Transportation Systems (HFITS)

Special Session proposer(s)
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Abstract
The fifth edition of the "Human Factors in Intelligent Transportation Systems" (HFITS) Special Session follows up previous editions of Workshops on Human Factors in Intelligent Vehicles (HFIV) held at IEEE IV Conferences, which have been supported and promoted by the IEEE ITS Society's HFITS Technical Activities Committee (TC).

The aim of the HFITS series is to foster the discussion on issues related to the analysis and understanding of human factors in the design and evaluation of Intelligent Transportation System (ITS) technologies, in a wide spectrum of applications and in different dimensions. It is expected to build up a proper environment to disseminate knowledge related to the theories, principles, data and methods for designing transportation systems in order to (1) optimize human well-being and overall system performance, (2) motivate interactions among the technical and scientific communities, practitioners and students, and (3) facilitate the state-of-the-art concepts and advances to be further developed and enhanced.

ITS technologies have experienced a great improvement in the last couple of decades, turning vehicles into more interactive counterparts in transportation and mobility systems. However, the impact of such technologies on traffic awareness of the drivers, driver behavior towards improving driving performance and reducing road accidents, as well as driver psycho and physical exhaustion, still demands proper tools and approaches to be better investigated. Whereas the feasibility of incorporating new technology-driven functionalities to vehicles has played a central role in the automotive design, not always safety issues related to interaction with the new in-vehicle systems have been taken into consideration. Additionally, some other aspects are also important and need to be analyzed, such as the impacts of the technologies supporting specific driving functions on the primary task of driving, and the overall performance of transportation systems. Besides current industrial achievements of a number of important driving assistance systems, the perspective of autonomous driving vehicles populating urban areas pose even more challenging issues.

Keywords
- Human Factors in Intelligent Transportation Systems
- Driver Assistance Systems

Topics of interest
- Intelligent user interfaces
- Interaction with autonomous vehicles
- Human-machine interaction
- Human-in-the-loop simulation
- Cognitive aspects of driving

- Human behavior and capability, affecting system design and operation
- Modelling and simulation of driving performance
- Behavioral modelling and validation methodologies
- Tools and approaches to human factors analyses
- Ergonomics of traveler information systems
- Anthropometric layout of vehicular technical systems
- Cross-Cultural Design
- Augmented Cognition
- User Experience and Usability
- Computer Aided Ergonomics Analysis
- Effects of in-vehicle systems on driver performance
- Tools and methodologies for usability assessment
- Input/output modalities in system ergonomic design
- Leaning, Anticipation, and Adaptation balance
- Driving Education and Training Methodologies
- Driver and pedestrian behavior, affecting driving safety
- Accident or driving scenario modeling in naturalistic driving environment
- Multimodal human-vehicle interaction
- Vehicle inside and outside state monitoring
- Driver support systems in limited ability autonomous driving