



Lecture Series 2024 - IEEE SMC Italy Chapter

Predicting and assistance of human decision behaviors: methods and application fields

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Abstract:

The role of the human operator in automation technology in principal and in the management of complex, highly automated transport systems especially is changing, particularly due to increasing automation. As a consequence, this leads to growing demands on the remaining humans in the control loop, who are now confronted with different requirements at practically all levels of automation. The article introduces the basic topic, suggests boundary conditions for takeover times when changing roles and proposes solutions for assisting and monitoring the human operator in various roles. All contributions are aimed at increasing the overall human machine system reliability of human-centered automation.

Bio: Dirk Söffker (Member, IEEE) received the Ph.D. (Dr.-Ing.) degree in mechanical engineering and the Habilitation degree in automatic control/safety engineering from the University of Wuppertal, Germany, in 1995 and 2001, respectively. Since 2001, he has been the Head of the Chair of Dynamics and Control, University of Duisburg-Essen, Germany. His current research interests include diagnostics and prognostics, modern methods of control theory, safe human interaction with technical systems, safety and reliability control engineering of technical systems, and cognitive technical systems.