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Human Error, Safety and Systems Development

7th IFIP WG 13.5 Working Conference, HESSD 2009
Brussels, Belgium, September 23-25, 2009
Revised Selected Papers

Springer

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Foreword

HESSD 2009 was the 7th IFIP WG 13.5 Working Conference in the series on Human Error, Safety and Systems Development which looks at integration of usability, human factors and human–computer interaction within system development. This edition was jointly organized with the 8th TAMODIA event on Tasks, Models and Diagrams for User Interface Development. There is an obvious synergy between the two previously separated events, as a rigorous, engineering approach to user interface development can help in the prevention of human error and the maintenance of safety in critical interactive systems.

Following the tradition of HESSD events, the papers in these proceedings address the problem of developing systems that support human interaction with complex, safety-critical applications. The last 30 years have seen a significant reduction in the accident rates across many different industries. Given these achievements, why do we need further research in this area? Recent accidents in a range of industries have increased concern over the design, management and control of safety-critical systems. Therefore, any system that involves human lives in its functioning is subject to safety-critical aspects. Contributions such as the one by Holloway and Johnson (2004) report that over 80% of accidents in aeronautics are attributed to human error.

Much recent attention has focused upon the role of human error both in the development and in the operation of complex processes. Since its inception, the IFIP 13.5 Working Group in Human Error, Safety, and System Development has organized a regular workshop that is aimed at providing a forum for practitioners and researchers to discuss leading-edge techniques that can be used to mitigate the impact of human error on safety-critical systems. The intention is to focus the workshop upon techniques that can be easily integrated into existing system engineering practices. With this in mind, we hope to address a number of different themes: techniques for incident and accident analysis; empirical studies of operator behavior in safety-critical systems; observational studies of safety-critical systems; risk assessment techniques for interactive systems; safety-related interface design, development and testing. The WG also encourages papers that cross these boundaries and come from many diverse sectors or domains of human activity.

These include but are not limited to aviation, maritime and the other transportation industries, the healthcare industries, process and power generation, and military application.

This book contains eight revised papers selected from the papers presented during the Working Conference that was held in Brussels, Belgium, September 23–25, 2009. The papers presented there resulted from a peer-review process and each paper received at least four reviews from the Program Committee members.

The keynote speaker, Dr. Andreas Lüdtke, Head of the Human-Centred Design Group at OFFIS Institute for Information Technology, R&D Division Transportation, presented an invited paper entitled: "New Requirements for Modelling how Humans Succeed and Fail in Complex Traffic Scenarios."

We gratefully acknowledge the support of the FP7 HUMAN project that supported the organization of this workshop (http://www.human.aero).

November 2009

Philippe Palanque
Jean Vanderdonckt

Holloway and Johnson (2004) Distribution of Causes in Selected US Aviation Accident Reports Between 1996 and 2003, 22nd International Systems Safety Conference, International Systems Safety Society, Unionville, VA, USA, 2004.

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