2nd Workshop on Open Resilient Human-aware Cyber-Physical Systems (WORCS-2013)

Organizers: Mohamed Kaâniche, LAAS-CNRS, Univ. Toulouse, France
            Michael Harrison, Queen Mary Univ. London, UK
            Hermann Kopetz, Technical Univ. Vienna, Austria
            Daniel Siewiorek, Carnegie Mellon Univ., USA

Monday June 24, 2013
Cyber-Physical Systems
- Tight integration of computation, communication and control into physical systems

The Future
- Smart, networked, context-aware, adaptive mission-critical CPS, with massive deployment of sensors/actuators in highly dynamic physical environments involving social interactions
Workshop Objectives

- Provide a forum at DSN to discuss:
  - Multidisciplinary approaches integrating **technological concerns** including physical system dynamics and ICT aspects, **but also social and human related aspects**
  - **Resilient Human-aware design and assessment approaches** to autonomously adapt to dynamic changes in system behavior, environment or threats
  - **Application domain specific challenges and solutions**
Workshop on Open Resilient Human-aware Cyber-Physical Systems (WORCS-2012)

Special Focus on Medical cyber-physical systems

http://conf.laas.fr/WORCS12

Monday June 25, 2012
WORCS-2013 Focus

- Automotive cyber physical systems
  - Human interactive systems, cooperative driving, security, human-in-the-loop control, etc.

[Checkoway et al., 2011]
WORC 2013 Program at a Glance: AM

08:30-10:00 — SESSION 1: Human Interactive Automated Driving Systems

– **Keynote Talk — Towards Vehicle Automation: ADAS The new Challenges**
  Serge Boverie, Continental Automotive S.A.S, Toulouse, France

– **Autonomous Emergency Braking: A System-of-System Perspective**
  Hermann Kopetz (1), Stephan Poledna (2)
  (1) Vienna U. Techonology, (2) TTTech, Vienna; Austria

10:00 - 10:30 — Break

10:30-12:00 — SESSION 2: Security

  Roy Maxion, CMU, USA

– **A Survey of Security Threats and Protection Mechanisms in Embedded Automotive Networks**
  Ivan Studnia (1), Vincent Nicomette (1), Eric Alata (1), Yves Deswarte (1), Mohamed Kaâniche (1),
  Youssef Laarouchi (2)
  (1) LAAS-CNRS & U. Toulouse; (2) Renault S.A.S; France

12:00 - 13:30 — Lunch
13:30-15:00 — SESSION 3: Smart Cooperative Driving

- On Reliability Analysis of Leader Election Protocols for Virtual Traffic Lights
  Negin Fathollahnejad (1), Emilia Villani (1), Risat Pathan (1), Raul Barbosa (3), Johan Karlsson (1)
  (1) Chalmers U. Technology, Göteborg, Sweden; (2) Instituto Tecnologico de Aeronautica ITA, Sao
  José dos Campos, Brazil; (3) U. Coimbra, Portugal

- The Karyon Project: Predictable and Safe Coordination in Cooperative Vehicular
  Systems
  Antonio Casimiro (1), Jörg Kaiser (2), Elad M. Schiller (3), Pedro Costa (4), José Parizi (5), Rolf
  Johansson (6), Renato Librino (7)
  (1) U. Lisboa, Portugal; (2) Otto-von-Guericke, Magdeburg, Germany; (3) Chalmers U. of
  Technology, Göteborg, Sweden; (4) GMVIS SKYSOFT, Portugal; (5) EMBRAER SA, Brazil; (6) SP
  Technical Research Institute of Sweden; (7) 4S SRL, Italy

- Driver Performance in the Presence of Adaptive Cruise Control Related Failures
  Josef Nilsson (1 & 2), Niklas Strand (2 & 3), Paolo Falcone (2 & 4), Jonny Vinter (1 & 2)
  (1) SP Technical Research Institute of Sweden; (2) SAFER Vehicle and Traffic Safety Center; (3) VTI
  Swedish National Road and Transport Research Institute; (4) Chalmers U. of Technology; Sweden

15:00 - 15:15 — Break

15:15-16:15 — Panel

- Human Interactive Autonomous Driving: Future Trends, Resilience Challenges and
  Research Perspectives
  Panelists:
  Serge Boverie, Continental Automotive S.A.S., Toulouse, France; Johan Karlsson, Chalmers U.
  Technology, Sweden; Hermann Kopetz, Vienna U. Technology, Austria; Jonny Vinter, SP Technical
  Research Institute of Sweden & SAFER Vehicle and Traffic Safety Center; Sweden

16:15-17:15 — Workshop Wrap-up
Serge Boverie
Continental Automotive
S.A.S, France
R&D innovation
Manager, Senior Expert

Roy Maxion
Carnegie Mellon
University, USA
Director of the CMU
Dependable Systems Lab.