

## **Newsletter of the IFAC Technical Committee on Human-Machine-Systems**

**Issue 2015\_2, September 2015 (Newsletter of IFAC TC 4.5 available on: <http://tc.ifac-control.org/4/5/newsletter>)**

This second 2015 newsletter contains:

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*(To publish your TC4.5 related information to the next newsletter, send your proposal by email to Frédéric Vanderhaegen: [frederic.vanderhaegen@univ-valenciennes.fr](mailto:frederic.vanderhaegen@univ-valenciennes.fr))*

### **1. Message from T. Sheridan about Raja Parasuraman**

“Raja Parasuraman, University Professor in Psychology, Director of the Human Factors and Applied Cognition Program, and Director of the Center of Excellence in Neuroergonomics, Technology and Cognition, at George Mason University in Fairfax, Virginia, died unexpectedly on March 22, 2015. He was 64 years old. He leaves a wife, two daughters and three grandchildren.

He received his BS with honors in electrical engineering from Imperial College, London, and his PhD from Aston University, Birmingham, both in the UK. For many years he was at Catholic University before moving to George Mason.

Raja was internationally recognized as a giant in the fields of human factors and cognitive science. He was a serious scholar, a much-lauded teacher and mentor of graduate students, and a prolific author. His research spanned many aspects of human behavior in relation to technology, including human-automation interaction, attention, vigilance, trust, and team behavior in networks, to name only some of the areas he is best known for. He was an equally competent researcher in widely diverse areas, such as the effect of neurotransmitter genes on cognition, impacts of automation, or fuzzy signal detection theory. His publications surely number well over 200, too numerous to detail here.

Dr. Parasuraman’s pioneering work led the emergence of Neuroergonomics as a new scientific field. He defined the field as the study of the human brain in relation to performance at work in everyday settings: human performance is correlated with neurophysiological measures such as EEG and brain imaging of various types.

At the same time, he made many experimental contributions in applied fields such as air traffic control and automobile driving, especially as related to visual and cognitive attention.

Raja served as chair of the National Research Council's Board on Human Systems Integration, and on several editorial boards. He was a fellow of Human Factors and Ergonomics Society, the International Ergonomics Association, and the American Psychological Association. He received additional honors from several of these.

Raja inspired great affection from his colleagues as well as his students for his scholarly, gentlemanly manner. He was a pleasure to work with. I think he and I coauthored five or six publications, mostly in the human-automation interaction area. We will all miss him."

Tom Sheridan, Massachusetts Institute of Technology, USA

## **2. Message from P. Millot about the 2<sup>nd</sup> International summer school on "Risk Management: a human centered design approach"**

"This second international summer school, entitled Risk management - a human-centered design approach, was held in Valenciennes, France, July 6-9, 2015. It was organized by G. Boy (FIT, NASA, PUF), C. Magniez (Railenium), P. Millot (LAMIH-PUF), M.-P. Pacaux-Lemoine (LAMIH-ARCIR SUCRÉ), P. Polet (LAMIH) and F. Vanderhaegen (LAMIH, GDR I HAMASYTI, IFAC HMS).

The summer school focused on the Human issues of Risk Management and combined results from three projects:

- 3 years of common research of the French-American joint lab between LAMIH/UVHC & HCDi/FIT.
- 1 year research of the ARCIR SUCRÉ regional project on Human-robots cooperation in hostile situation.
- 1 year of the International Research Network HAMASYTI (HumAn MACHine SYstems in Transportation and Industry – GDR I HAMASYTI).

This Summer School was a good opportunity for about 40 participants (Master and PhD students, post docs, researchers and engineers from industry) for learning and brainstorming with international experts on basic research and applications in the very complex domain of risk management. A particular attention was given to Human Centered approaches. An important part was dedicated to Transports such as trains, aircraft flying, air traffic control, cars, and to crisis management by organizations such as hospitals, civil security or firemen.

21 hours of lectures were planned and given by distinguished lecturers:

- Guy A. Boy (HCDi/FIT, NASA KSC, USA): Risk, possibility, necessity, abduction and action principle
- Patrick Millot (LAMIH/UVHC, F): Collective Situation Awareness, an attempt for Risk management
- Lucas Stéphane (HCDi/FIT, USA): 3D Reality Computing and Information Architecture for Improved Risk Awareness in Space, Transportation and Energy
- Frédéric Vanderhaegen (LAMIH/UVHC, F, GDR I HAMASYTI): Human-centered automation of autonomy applied to system resilience

- Oliver Carsten (Univ Leeds, GB): Safe-driving and eco-driving, equivalent or not? How to address safety concerns in designing a green driving support system ?
- Marie-Pierre Pacaux-Lemoine (LAMIH/UVHC, F, ARCIR SUCRÉ) : Individual and collective adaptation to situation emergency and complexity: a Human-Machine Cooperation approach
- Lahcen El Hiki (Univ Mons, B): Safety and risk management in hospitals: toward an integrative approach
- Makoto Itoh (Univ Tsukuba, J): Toward a resilient railways with safety management system
- Frank Flemich (Univ Aachen, D): Risk management and automation: Human machine cooperation in cars and aircraft
- Pedro Ferreira (Univ Lisbon, P): Resilience in supply chain management
- Xianyi Zeng, Ludovic Koehl & Guillaume Tartare (ENSAIT, Roubaix, F, ARCIR-SUCRÉ) : Development of an Intelligent Clothing system for Risk Management - applications to fire fighting
- Etienne Cousein (Valenciennes' General Hospital, F): Understanding and managing the risks associated to medication management in healthcare organizations
- Denis Huneau (Ministry of Ecology, F): How much safety prevents innovation in the railway industry?
- Christian Maquaire (IRT Railenium, Valenciennes, F) : Pragmatic lessons from a risk management experience in industry
- Céline Muehlethaler (Zurich University of Applied Sciences, CH): Pilot Situation Awareness Training using Eye Tracking
- Walter Schön (UTC, F): Safety and security of modern railway systems
- Armand Toubol (SNCF, F): Safety: automated protection or personal involvement? A glance from a personal experience

For more details, see on: <http://www.univ-valenciennes.fr/risk-management-2015>.

A book will be edited soon integrating the content of these lectures. The participants received the proceedings of the 1<sup>st</sup> international summer school entitled Risk management in life-critical systems, organized at Valenciennes in 2013, and edited by P. Millot at ISTE-Wiley, London. See on: <http://www.iste.co.uk>.”

Patrick Millot, University of Valenciennes, France

### **3. Message from J. Zaytoon about the Annual IFAC French NMO award**

“IFAC French NMO 2016 Award

Starting from 2005, the IFAC French NMO has established an annual Award to recognize and promote outstanding individual contributions to IFAC activities.

The 2016 IFAC French NMO Award is attributed to Frédéric Vanderhaegen for outstanding services as Chair of the IFAC Technical Committee on Human Machine Systems.”

Janan Zaytoon, President of IFAC

#### **4. Call for papers and sessions for the 13<sup>th</sup> IFAC/IFIP/IFORS/IEA symposium on Design, Analysis, and Evaluation of Human-Machine Systems, Kyoto, 2016**

The 13<sup>th</sup> IFAC/IFIP/IFORS/IEA Symposium on Analysis, Design, and Evaluation of Human-Machine Systems will be held at Kyoto, Japan, August 30 – September 2, 2016.

It is organized by Kyoto University. For more details, please contact the IFAC HMS2016 secretary by email ([sec-ifachms2016@me.kyoto-u.ac.jp](mailto:sec-ifachms2016@me.kyoto-u.ac.jp)).

The International Program Committee invites you to submit proposals and join us in this prestigious international event for scholars and experts. Contributions of IFAC members and of colleagues from other communities (e.g., IFIP, IFORS or IEA) are welcome and please send this invitation to your colleagues. The symposium will be a high success such as the previous versions in Europe, America, or Asia since 1982 (Las Vegas, USA, 2013; Valenciennes, France, 2010; Seoul, Korea, 2007, Atlanta, USA, 2004; Kassel, Germany, 2001; Kyoto, Japan, 1998; Boston, USA, 1995; The Hague, Netherlands, 1992; Xi'an, China, 1989; Oulu, Finland, 1988; Varese, Italy, 1985; Baden-Baden, Germany, 1982).

The objective of this symposium is to exchange ideas and further understanding in the areas of Human-Machine Systems, Human-Computer Interaction, Intelligent and Autonomous Systems, Cognitive System Modeling, Human-Centered Design, and Decision Support Systems. The symposium will especially highlight the paradigm shifts in research and practice due to the recent advances of communication and information technologies.

Please, note the important planned dates on your agenda:

- Paper and session submission deadline: November 21, 2015
- Thematic topic session deadline: December 21, 2015
- Notification of acceptance: February 28, 2016
- Full paper submission deadline: April 25, 2016
- Early registration deadline: June 30, 2016

Information about this symposium will be available soon on <http://www.syn.me.kyoto-u.ac.jp/IFACHMS2016/>

This event will also be the opportunity to determine the location of our next symposia and to propose a new candidate for chairing our TC. A proposal for our symposium of 2019 was done by Institute of Computer Science of Tallinn University of Technology, Estonia. Other proposals are required for 2022 and 2025. A TC chair can have maximum two mandates and Frédéric Vanderhaegen did them. Please send to Frédéric Vanderhaegen your proposals for the next symposia organization and for potential future candidates to chair our TC.

#### **5. Events related to human-machine systems**

- Berlin Human-Machine System Workshop, Berlin, Germany, October 7-9, 2015:  
[http://www.ipa.tu-berlin.de/bwmms/11\\_berliner\\_werkstatt\\_mms/parameter/en/](http://www.ipa.tu-berlin.de/bwmms/11_berliner_werkstatt_mms/parameter/en/)

- IEEE International Conference on Systems, Man, and Cybernetics, Hong-Kong, October 9-12, 2015: <http://www.smc2015.org/>
- 2015 IEEE Conference on Evolving and Adaptive Intelligent Systems, Douai, France, December 1-3, 2015: <http://conference.mines-douai.fr/eais2015/>
- 8th IFAC Symposium Advances in Automotive Control, AAC 2016, Kolmården Wildlife Resort (Vildmarkshotellet), Sweden, June 19-23, 2016: <http://aac2016.isy.liu.se/>
- Conference on uncertainty modeling in knowledge engineering and decision making, Roubaix, France, August 24-26, 2016: <http://flins2016.ensait.fr/>
- **13th IFAC/IFIP/IFORS/IEA symposium on Design, Analysis, and Evaluation of Human-Machine Systems, Kyoto, August 30-September 2, 2016: <http://www.syn.me.kyoto-u.ac.jp/IFACHMS2016/>**