

# Call for Papers - IFAC HMS

## Special Session on Cognitive Systems Engineering

Cognitive Systems Engineering and its main application, Ecological Interface Design, are approximately 30 years old now. Starting with an example application (DURESS) in process control, and a seminal publication in 1992, Ecological Interface Design found its way into process control first. This sparked interest in other application domains, and applications and examples of CSE/EID are found in transportation systems, large and complex organizations, and domestic applications.

A distinctive trait of the approach has been the recognition that in all human endeavors we are bound by the constraints posed upon us by our surroundings. Our design choices, economics, goals and needs and the physics of the world constrain the possible courses of action. The starting point in CSE is to determine what these constraints are. In contrast to “Cognitive Psychology” approaches, CSE starts not by looking what is inside the head (of the operator or user), but at what the head is inside of. EID continues by finding a visualization for the constraints thus discovered. The 30<sup>th</sup> anniversary of CSE is a nice occasion for looking back, and for taking a peek at the future.

The aim of this special session is to reflect the most recent advances in cognitive systems engineering, and increase the awareness of the human factors community at large on this promising approach to design human-machine systems. We welcome submissions reporting theoretical or empirical results in the field of cognitive systems engineering.

Topics of interest include, but are not limited to:

- Abstraction hierarchy
- Decision-making
- Situation Awareness
- Ecological interfaces
- Learning and adaptation
- Ecological automation design

Application domains foreseen are aerospace, medical, automotive, process industry.

For more information about the IFAC-HMS 2010 conference:

<http://www.univ-valenciennes.fr/IFACHMS2010/>

### **Organizers:**

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