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The 20th World Congress of the International Federation of Automatic Control, 9-14 July 2017



INVITED SESSION ON:

Human factors and ergonomics in industrial and logistic system design and management

Organized by:

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Despite the opportunities the automatization of industrial and logistic systems offers, many companies still rely on human work in many areas. Most planning models that have been proposed in the past to support managerial decision making in industrial and logistic systems have neglected the specific characteristics of human workers, which often led to unrealistic planning outcomes or work schedules that may even be harmful to workers employed in the system. To guarantee a high level of productivity and efficiency and to make sure that decision support models reflect reality as good as possible, it is necessary to consider human factors in addition to economic aspects in designing industrial and logistic systems. Even though recent research has started to integrate human factors issues into decision support models – for example by modelling learning effects or human energy expenditure –, there still seems to be a large gap in the literature concerning the development of decision support models for industrial and logistic systems that take account of the interaction between the human worker and the work environment. The latter can, to a large extent, be influenced by the system designer.

Generally, human factors (perceptual, mental, physical and psychosocial aspects) determine the performance of industrial and logistic systems to a large extent if human operators are employed. This aspect becomes more challenging in light of demographic changes, which will likely put human factor-related issues in logistics – such as the risk of developing musculoskeletal disorders in labor-intensive work environments, for example – on top of the agendas in many companies. In addition, the consequences of using innovative technical solutions to support industrial and logistics processes, such as augmented reality or motion capturing, is not yet fully understood in light of human performance and errors.

This session aims at investigating the development of innovative approaches for the integration of human factors in industrial and logistic system design.

The main topics should concern analytical models, quantitative approaches and simulation studies, but also qualitative approaches that give insights into behavioral issues and the interactions of humans and new technologies in industrial and logistic systems. Topics may include, but are not limited to:

- Ergonomics in operations and logistics management
- Learning and forgetting aspects in industrial systems
- The impact of system design on human errors
- Error-free systems
- Reduction of injury risks in manual operations
- The impact of demographic changes on industrial systems

INVITATION CODE: v3xvd.

Standard papers (6 pages), Survey papers (6 pages) and Extended abstracts (2-4 pages) are welcome.

When you submit your paper to the IFAC system, you will be required this ID number in order to associate your paper to the invited session:

<https://ifac.papercept.net/conferences/scripts/start.pl>

Please send also a copy of the paper to the invited session organizers.

IMPORTANT DATES:

Draft papers submission deadline: **November 8 31, 2016**

Full papers submission deadline: **March 31, 2017**

Best Regards,

Fabio Sgarbossa, Daria Battini, Christoph Glock, Eric Grosse, Patrick Neumann



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