INVITED SESSION PROPOSAL ON:

Human factors in industrial and logistic system design

Organized by:
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Despite the opportunities the automatization of industrial and logistic systems offers, many companies still rely on human work and manual materials handling 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. In order 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 economical aspects in designing industrial systems. There seems to be a large gap in the literature concerning the integration of human factors into decision support models for industrial and logistic systems as well as regarding the analysis of the impact of system design parameters on the operators. 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 capture 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
- Error-free systems
- Reduction of injury risks in manual operations
- Demographic change in industrial systems

Best Regards,
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