The 22nd World Congress of the International Federation of Automatic Control in Yokohama, JAPAN, 9 July – 14 July 2023. https://www.ifac2023.org

Invited Track: Industry 5.0 - Human-centered production and logistics systems of the future

Organized by IFAC TC 5.2 working group 7: 'Human factors and ergonomics in industrial and logistic system design and management':

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Despite the opportunities that the automation of industrial and logistic systems offer, many companies still rely on human work in many areas. Most decision support 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 leads to unrealistic planning outcomes or work schedules that under-perform, or that may even be harmful to workers. To guarantee a high level of productivity and efficiency and to make sure that decision support models reflect reality as much as possible, it is necessary to consider human factors (synonymous here with ergonomics) in designing industrial and logistic systems that are reliable, efficient, and safe workplaces. 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 is still a large gap in the literature concerning the development of decision support models for industrial and logistic systems that take account of the interactions between the human worker and the design of the logistics system. The technical system can, unlike the worker, be comprehensively influenced by the system designer.

Generally, human factors (perceptual, cognitive, physical and psychosocial aspects in the workplace) determine the performance of industrial and logistics systems to a large extent if human operators are employed. This aspect becomes more challenging in light of an ageing workforce, which will likely put human factors-related issues in logistics – such as the risk of making errors at work or of developing musculoskeletal disorders – on top of the agendas in many companies. In addition, the consequences of using Industry 4.0 technologies that assist operators in their manual work, such as augmented reality, adaptable workstations or cobots, are not yet fully understood in light of human performance, errors, work motivation, and technology acceptance. Research in this area is, however, an inevitable and important step towards the vision of **Industry 5.0** with its emphasis of **human-centered** work, environmental sustainability, and system resilience.

This open invited track aims at investigating the development of innovative approaches for the integration of human factors in system design to create highly reliable and humanly sustainable production and logistics systems of the future.

Topics may include, but are not limited to:

- Human-centricity in Industry 5.0 and Resilient Operator 5.0
- Opportunities to utilize human factors in Industry 4.0 for human-centered production and logistics systems
- Human factors in Logistics 4.0
- Technology adoption, reliability and maintainability
- Behavioral issues and the interactions of humans and new technologies in production and logistics
- The impact, chances and challenges of using technical assistance systems (wearables, AR, exoskeletons etc.) in manual industrial work
- Physical, cognitive and psychosocial human factors in operations and logistics management
- Learning and forgetting in industrial systems
- The impact of system design on human errors
- Reduction of injury risks in manual operations
- The impact of demographic changes/ an ageing workforce on industrial system performance and safety

INVITATION CODE 84ju9:

Draft papers reporting original research (limited to 6 pages in IFAC format) are welcome. There is the possibility to submit discussion papers (limited to 4 pages), which are published in the preprints only.

When you submit your paper to the IFAC system, you will be required the **invitation code 84ju9** in order to associate your paper to the invited track: **https://ifac.papercept.net**

IMPORTANT DATES:

Draft papers submission deadline:	**31.10.2022**
Discussion papers deadline:	**30.11.2023**
Notification of acceptance:	**21.02.2023**
Final papers submission deadline:	**31.03.2023**
Early registration deadline:	**tba**

Accepted papers will be published open access in Elsevier's IFAC-PapersOnLine. Post-conference special issues for extended versions of accepted papers are planned in IFAC and other high-ranked journals.