Special Session Call for Papers for STE 2027

February 24 - 26, 2027, The Sukosol Hotel Bangkok, Thailand

"Competences and Skills for the Industry 4.0 to Industry 5.0 Transition: Modelling, Assessing and Developing the Requirements and Attitudes of Industrial Engineers of the Future (KSA-I5.0)"

as part of the

International Conference on Smart Technologies & Education (STE 2027)

Background and Overview

Cyber-physical systems, the Industrial Internet of Things, artificial intelligence and advanced automation (among others) have redefined what industry expects from industrial engineers: graduates must combine engineering fundamentals with digital proficiency and strong cognitive and interpersonal competencies. Industry 5.0, with its human-centric, sustainable and resilient pillars, raises the bar further. Yet curricula evolve more slowly than industrial needs, the terms "skill", "competence" and "competency" are used inconsistently, and existing competency frameworks remain fragmented. Before learning paths can be designed, the target competencies must first be clearly defined, structured and made measurable.

This Special Session addresses competences as an engineering problem: how to identify, model, assess and develop the knowledge, skills and attitudes required by the transition from Industry 4.0 to Industry 5.0. It welcomes systematic reviews and empirical studies that build competence models (e.g., based on the Knowledge–Skills–Attitudes model and Bloom's taxonomy), align them with European references such as ESCO, DigComp and GreenComp, analyse gaps between curricula and industrial requirements, and translate competence models into learning outcomes, assessment criteria and scenario-based learning paths. Contributions validating such approaches in learning factories, laboratories and industrial settings are particularly encouraged.

Furthermore, this Special Session is also part of the ADDIE5.0 Erasmus+ project. For more information, please visit the project website: https://www.addie-project.eu/

Topics

Authors are invited to submit complete papers for the KSA-I5.0 Special Session (no abstracts needed). The topics cover all aspects of intelligent systems, including but not limited to the following:

- Competence requirements of industrial engineers and technical staff in Industry 4.0 and Industry 5.0
- Competence models and frameworks: Knowledge–Skills–Attitudes (KSA), Bloom's taxonomy and related approaches
- Alignment of competence models with European references (ESCO, DigComp, GreenComp, EntreComp)
- Systematic literature reviews and empirical studies on Industry 4.0/5.0 skills and competences
- Technical, digital and data competences paired with attitudes (e.g., critical use of AI, awareness of digital risks)
- Human-centric, sustainability and resilience competences for Industry 5.0
- Curricular gap analysis between engineering programmes and industrial needs
- From competence models to learning outcomes, assessment criteria and scenario-based learning paths
- Learning factories and laboratory environments for developing and validating competences
- Upskilling and reskilling of engineers and the manufacturing workforce, including SMEs
- Other topics related to skills and competences for the Industry 4.0 to 5.0 transition

Special Session Chairs

- Matteo De Marchi, Industrial Engineering and Automation, Smart Mini Factory Laboratory, Free University of Bozen-Bolzano, Italy, matteo.demarchi@unibz.it

Committee Members

- Prof. Erwin Rauch, Free University of Bozen-Bolzano (UNIBZ), Italy
- Prof. Dr. Alexander Alexander Janz and Sebastian Kriebel, Duale Hochschule Baden-Württemberg (DHBW), Mosbach, Germany
- Prof. Dr. Ing. Sven Sedenstricker, Duale Hochschule Baden-Württemberg (DHBW), Stuttgart, Germany
- Prof. Anita Onay and Anika Mari Claassen, Management Center Innsbruck (MCI), Austria
- Prof. Rosa Maria Rio Belver, The Department of Business Organisation at the University of the Basque Country (UPV), Spain
- Katerina Michale, Kainotomia, Greece

Special Sessions General Information

Special Sessions, held in parallel with the general conference, are an integral part of the conference. They provide researchers in focused areas the opportunity to meet and present their work and offer a forum for interaction among the broader community of technology-enhanced learning, and online engineering world-wide. Special sessions papers are required to meet the same standards as papers in the general conference and are published in the same conference proceedings.

Special Session papers must be submitted to STE submission server (ConfTool® Submission Server) to the respective Special Session track. Special Session papers will be reviewed by at least two members of the Special Session's Program Committee, and acceptance decisions will be made by the conference program Co-Chairs and Special Sessions Chair.

Important Deadlines

13 Nov 2026	Submission of complete Special Session papers
23 Nov 2026	Notification of acceptance
21 Dec 2026	Camera-ready due & Author registration deadline
24 Feb 2027	STE 2027 opening

Review/Proceedings

All submissions will undergo a double-blind review process. All accepted and presented papers will be published as STE 2027 Proceedings in Springer's Lecture Notes in Networks and Systems. The books of these series are submitted to ISI Proceedings, EI-Compendex, DBLP, SCOPUS, Google Scholar and Springerlink. Selected award-winning papers will be recommended for publication in international journals.

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