



Special Session

Advanced Systems Engineering ASE to enhance sustainability and circularity

Session Organizers:

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Keywords: Advanced Systems Engineering, Model-Based Engineering, Advanced Systems, Advanced Engineering, Systems Engineering, Sustainability, Circularity, Product Creation

Abstract:

Ever more individualizable as well as more and more complex products and product-service-combination result in an ever-growing variety of products with the resulting complexity of products and processes. Promising approaches to cope with the resulting situation can be subsumed as Advanced Systems Engineering ASE. ASE considers three essential perspectives, Advanced Systems, Advanced Engineering, and Systems Engineering. Advanced Systems are the market solutions for the future like autonomous systems, interactive socio-technical systems, dynamically linked systems and complex product-service combinations. Advanced Engineering is enabled by the Digital Transformation in engineering like digital continuity in product creation and the product life cycle, e.g. with Digital Product Passports, Digital Twins and their exploitation in engineering, as well as AI-based assistance systems in product creation. Systems Engineering is a promising approach to handle complexity in a trans-disciplinary manner under special consideration of communication, cooperation and coordination of the variety of disciplines involved in product creation and needs to increasingly leverage new solutions of MBSE (Model based Systems Engineering).

Objective of this session is to discuss approaches and means to leverage Advanced Systems Engineering, which originally is applied to handle variety and complexity, to enhance sustainability and circularity of products and processes.

Topics may include but are not limited to:

- Advanced Systems based on the Digital Twin Green Transition

- Advanced Engineering methods and tools to advance sustainability and circularity of advanced systems and products in general
- Model-Based Systems Engineering under special consideration of sustainability and circularity
- Novel methods for engineering and Design for Circularity

Paper Submission: Draft papers reporting original work with up to 6 pages length in accordance with the IFAC format are welcome. When submitting your paper to <https://ifac.papercept.net> please use the session code for this special session.

Important Dates:

Paper submission deadline:	January 31 st , 2024
Reviewing papers:	March 15 th , 2024
Final papers submission deadline:	April 15 th , 2024
Early registration deadline:	April 30 th , 2024
Conference date:	August 28 th – 30 th , 2024

More information: www.incom2024.org