21st International Workshop on Dependable Smart Embedded Cyber-Physical Systems and Systems-of-Systems (DECSoS)

Co-located with SAFECOMP 2026, Sept. 22, 2026, UPM, Valencia, Spain

This workshop at SAFECOMP follows already its own tradition since 2006. In the past, it focussed on the conventional type of "embedded systems", covering all dependability properties. To emphasize more the relationship to physics, mechatronics and the interaction with a somehow unpredictable environment, the terminology changed to "cyber-physical systems". A new focus is on trustworthiness of smart systems composed from cognitive CPS integrated into IoT infrastructure and on autonomy, challenging system dependability assurance. A key issue is "Digitalization", particularly performing extensive V&V on "Digital Twins" to achieve confidence in these systems and taking into account new paradigms of software- and systems engineering, for instance questions of functional safety in systems including AI based elements or human-machine teaming and co-evolution. A key issue is the holistic view on complex, safety related systems and the integration of various competing aspects.

The impact on society is considerable - thus dependability (safety, reliability, availability, security, maintainability, etc.) evaluated in a holistic manner becomes an important issue, including resilience, sustainability and ethical aligned design. Cognitive and autonomous systems, CPSs and IoT are targeted research areas in Horizon Europe and public-private partnerships such as the Chips-JU.

Sessions are planned on:

- Dependable and resilient embedded systems, systems of cyber-physical systems,
- Highly automated (autonomous) Systems and Robotics,
- AI and autonomy: Functional safety, cybersecurity and human-machine teaming
- Medical devices and Health care safety, security and conformity assessment
- Smart Anything Everywhere, IoT Internet of Things
- Digitalization of our world progressing towards Society 5.0 (Industry 5.0, Farming 5.0, Smart mobility, Digital Cities, Smart Health, …), particularly under consideration of environmental, sovereignty, sustainability, human aspects and ethical aligned design.

particularly addressing thematic topics such as

- Safety and security co-engineering for trustworthiness, managing complexity
- Validation and Verification, multi-concern and modular assurance,
- Domain-specific critical applications (industrial, medical devices and other demonstrators),
- Standardization (interoperability, trustworthiness), certification and ethical concerns.

covering aspects from concepts to deployment and maintenance. This is a workshop which is aiming at reports on on-going "work in progress", hopefully leading to fruitful discussions and experience exchange, allowing also unusual subtopics.

Reports on European or national research projects (as part of the required dissemination) as well as industrial experience reports from work in progress are most welcome.

All papers will be reviewed by at least three reviewers. Workshop proceedings will be provided as complementary book to the SAFECOMP Proceedings in **Springer LNCS**. **Papers (6 - 12 pages)** will be reviewed by at least three reviewers. Please keep your paper format according to SPRINGER LNCS style guidelines (http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0) (use Microsoft Word if possible).

Submission will be via EasyChair: https://easychair.org/conferences/?conf=decsos2026

Deadlines:

- **Full paper submission:** 4 May 2026 **EXTENDED: 11 May 2026**
- **Notification of acceptance:** 18 May 2026 **EXTENDED: 25 May 2026**
- **Camera-ready submission:** 08 June 2026
- **Workshop:** 22 September 2026

The International Programme Committee is composed of selected EWICS and ERCIM members, led by the workshop organizers.

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