



Invited Session:

Service-Oriented Cross-layer infrastructure for distributed smart embedded devices

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The special session is to report methodologies, technologies and tools for the modelling, design, implementation and operation of networked hardware/software systems embedded in smart physical objects. The smart embedded system is to be applied in perception and control systems in intelligent environments, in which enhanced system intelligence is achieved by cooperation of smart embedded devices pursuing common goals. These devices with embedded intelligence and sensing/actuating capabilities are expected to be heterogeneous yet they need to interact seamlessly and intensively over a network (wired/wireless).

For seamless interaction a middleware technologies is needed which can be based on the Service-Oriented Architecture approach, which is generic to any networking technology or transmission medium, and which provide open interfaces that enable interoperability at the semantic level to any 3rd party. This increased granularity of intelligence distributed among loosely coupled intelligent physical objects facilitates the adaptability and reconfigurability of the system, allowing it to meet business demands not foreseen at the time of design. Focus from a functional view will be in managing the vastly increased number of intelligent devices and the associated complexity.

The variety of relevant approaches and systems leads to embedded networks based on SOA architecture has to face major challenges. Therefore the special session should focus on the following topics:

- Design of service oriented loosely coupled embedded networked systems
- Embedded device and mechatronic component architecture for SOA based systems
- Performance of network systems based on SOA architecture
- Wired and wireless communication of networked devices using the web service approach
- Vertical integration of SOA based networked automation systems up to MES and ERP level
- Integration of legacy automation system in SOA architecture

Submission

Submitted papers (6 pages in IFAC double column format) will be reviewed by at least two referees, see submission site <http://ifac.papercept.net/> Both academic and industrial oriented communications will be considered. All papers accepted for presentation will appear in the Preprints and will be distributed to the participants. Papers duly presented at the Symposium will be archived in the form of Proceedings published at IFAC-PapersOnline.net by Elsevier. Further submission instructions are available on the IFAC website www.ifac-control.org. Several international journals are associated with the symposium for publication of special issues.

Important dates:

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| November 15, 2008: deadline for paper submission |
| January 6, 2009: notification of acceptance/reject |
| March 15, 2009: deadline for final paper. |