

Message from the DIAS 2015 Workshop Chairs

Welcome to the 2015 The 2015 First International Workshop on Distributed Intelligent Automation Systems (DIAS), which held in conjunction with the 13th IEEE International Symposium on Parallel and Distributed Processing with Applications (IEEE ISPA-15) during August 20-22, 2015.

Increasing complexity of industrial automation systems imply the wider application of distributed computing architectures. This brings new challenges, related to the lack of proper design patterns, middleware, software tools, verification techniques, etc.

This DIAS workshop aims at presenting new emerging results related to various aspects of distributed automation systems design. The target audience are researchers from the automation, embedded systems, communication, software engineering and cyber-physical systems.

All submissions of DIAS 2015 were reviewed by at least two or three committee members or external reviewers. We congratulate the authors of accepted papers and we regret that some of high quality submissions could not be included in the proceedings for publication. In the latter case we sure that the authors have received very valuable feedback.

DIAS 2015 was a team effort. We would like to thank the program committee and external reviewers who worked extremely hard to get things done on time.

We hope that in the years to come, DIAS will become a platform for dialogue and interaction on new concepts and applications in this field.

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Program Chairs of DIAS 2015

DIAS 2015 Organizing and Program Committees

Program Chairs

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Partha Roop, The University of Auckland, New Zealand

Hans-Michael Hanisch, Martin Luther University, Germany

Victor Dubinin, Penza State University, Russia

The 2015 First International Workshop on Distributed Intelligent Automation Systems (DIAS)

Program

Session I: Models and Applications for Industrial Cyber-physical systems

DIAS15-1

Session Chairs: Per Lindgren, Valeriy Vyatkin, Luleå University of Technology, Sweden

- ID:1 *Cyber-physical Design of Data Centers Cooling Systems Automation*, Arash Mousavi et al.
Luleå University of Technology
- ID:2 *Fuzzy Logic Based Prosumer Agent in a Modular Smart Grid Prosumer Architecture*, Chen-Wei Yang et al., Luleå University of Technology, Sweden
- ID:6 *An OPC UA based Architecture for Testing Tracking Simulation Methods*, Gerardo Santillán Martínez et al., Aalto University, Finland
- ID:11, *“Synthesis of safety controllers for distributed automation systems on the basis of reverse safe net condition/event systems”*, Victor Dubinin, Penza State University, Russia

Session II: Distributed design architectures

DIAS15-2

*Session Chairs: Valeriy Vyatkin, Luleå University of Technology, Sweden,
Anatoly Shalyto, ITMO University, Russia*

- ID:13, *“A Formal Perspective on IEC 61499 Execution Control Chart Semantics”*, Per Lindgren et al., Luleå Tekniska Universitet, Sweden
- ID:9, *“Formal Modeling of Testing Software for Cyber-Physical Automation Systems”*, Igor Buzhinsky et al., ITMO University, Russia

- ID:15, *Inferring Automata Logic From Manual Control Scenarios: Implementation in Function Blocks*, Daniil Chivilikhin et al., ITMO University, Russia
- ID:3 *Formal Verification of IEC 61499 Function Blocks with Abstract State Machines and SMV – Modelling*, Sandeep Patil et al., Luleå Tekniska Universitet, Sweden

Session III: Platforms and Design Methods for Industrial Cyber-physical systems

DIAS15-3

Session Chairs: Anatoly Shalyto, Daniil Chivilikhin, ITMO University, Russia

Invited talk not published in proceedings: *IoT Platform for Distributed Intelligence on Constrained Devices*, Pavel Petrosenko, Sun Microsystems

ID:8 *Model-driven runtime embedded monitoring for industrial controllers*, Sergey Bikovsky and Pavel Kustarev, ITMO University, Russia

ID:4 *Adaptation of Material Flows in Mechanical Transportation Systems based on Observation Experience*, Sergey Belayakov et al., Southern Federal University, Russia