IEEE IES Technical Committee on Factory Automation (TCFA)

Lucia Lo Bello

Chair of TCFA

University of Catania, ITALY

Structure of TCFA 2014 - 2015

- Chair
  - Lucia Lo Bello
  - University of Catania, Italy

- Vice Chair
  - Alexander Fay
  - Helmut-Schmidt University Hamburg, Germany

- Secretary
  - Jürgen Jasperneite
  - Ostwestfalen-Lippe University of Applied Sciences, Germany

TCFA Committee Overview

- The Committee comprises Sub-Committees to comprehensively cover the field of industrial and factory automation, headed by leading authorities from academia and industry in their respective areas.

- The Committee is involved in active support of a number of flagship technical events of the IES, such as

  - Inter. Conference on Emerging Technologies and Factory Automation (ETFA), the largest IEEE conference on industrial automation;

  - Inter. Workshop on Factory Communication System (WFCS), the most important IEEE event with a focus on industrial networks;

  - Inter. Symposium on Industrial Embedded Systems (SIES).

TCFA Mission

The Technical Committee on Factory Automation (TCFA) aims to promote synergic interactions between experts from industry and academia (in order) to foster the development and adoption of scientific methods, models, and tools for the efficient design and operation of industrial and factory automation systems.

The technical scope of the TCFA encompasses a broad range of technologies relevant to industrial and factory automation systems, including communication systems, real-time and networked embedded systems, wireless sensor networks, in-vehicle systems, information and Internet technologies, automated control and signal processing, intelligent and cooperative robotics, computational intelligence and heuristics, computer vision, and human-machine interaction.

Desirable properties in the context of industrial and factory automation, such as security, fault-tolerance, dependability, and energy-awareness are also addressed.

In order to disseminate novel ideas and emerging trends, research results and practical achievements, the TCFA members regularly meet at IEEE-IES conferences. They also actively participate in the organization of technical tracks, special sessions and workshops at IEEE-IES conferences, and serve on the Editorial Board, or as Guest Editors for special sections, of the IEEE-IES journals, transactions and magazines.

TCFA Website

- The new Committee web site is

http://ies-tcfa.dieei.unict.it

- It offers information on recent and upcoming technical events and presentations, call for papers and relevant material.

Structure of TCFA 2014-2015

- Chair
  - **Lucia Lo Bello**
- Vice Chair
  - **Alexander Fay**
- Secretary
  - **Jürgen Jasperneite**
- Subcommittees and chairs
  - 1 Industrial Communication Systems (**Elisabeth Uhlemann**, J**ohan Åkerberg, Jüergen Jasperneite)**
  - 2 Real-Time Systems in Industrial & Factory Automation (**Thomas Nolte, Jian-Jia Chen**)
  - 3 Networked Embedded Systems (**Marco Di Natale,Roberto Passerone**)
  - 4 Wireless Sensor Networks and Cyber-Physical Systems in Industrial & Factory Automation (**Frank Golatowski**, **Matthias Kovatsch**)
  - 5 Internet and Information Technologies in Factory Automation (**Thilo Sauter, Michael Weyrich**)
  - 6 Industrial Automated Systems and Controls (**Carla Seatzu**)
  - 7 Security in Industrial Communication and Embedded Systems (**Adriano Valenzano**)
  - 8 Computational Intelligence and Modern Heuristics in Industrial & Factory Automation (**Riccardo Caponetto, Milos Manic**)
  - 9 In-Vehicle Embedded Systems (**Nicolas Navet**)
  - 10 Fault Tolerant and Dependable Systems (**Julian Proenza**, **Sasikumar Punnekkat**)
  - 11 Intelligent and Cooperative Robotics (**Antoni Grau-Saldes, Marina Indri**)
  - 12 Event-Based Control and Signal Processing in Factory Automation. **(Marek Miskowic)**
  - 13 Computer vision and Human-Machine Interaction in Industrial and Factory Automation **(Marco Porta)**
  - 14 Green Communication for Automation **(Stefano Vitturi)**

TC structure and composition

- In 2014
  - Fresh people (65 new members added) and new ideas: 3 new Subcommittees activated

    (12, 13 and 14), other were renamed and reshaped to better match current trends such as, CPS and Internet Technologies in factory automation
  - New SC chairs, new SC members: Involvement of people who have not been involved in the IES before.

Report of the 2014 activities- 1st quarter

- **TCFA (IES) organization during 2014**
  - Organization of WFCS 2014, SIES 2014 and ETFA 2014
  - Track chairs in INDIN 2014, ETFA 2014
  - Involvement in ISIE 2014, IECON 2014
  - Reviewers for the IEEE and IES conferences (INDIN, HSI, IECON, WFCS,SIES, ETFA)
  - Associate Editors and Reviewers for the IEEE IES Transactions on Industrial Electronics , IEEE IES Transactions on Industrial Informatics , the Industrial Electronics Magazine
  - Guest Editors of Special Sections in the IEEE Transactions on Industrial Informatics on "Emerging Technologies and Factory Automation" and Distributed Data Processing in Industrial Applications".
- TCFA organization during 2014
  - Workshops (SOCNE 2014, COMPENG 2014, EBS 2014, VtRES 2014, M2H)@ETFA 2014
  - Special sessions (e.g., at ETFA 2014)
  - Bookchapters with CRC/Taylor and Francis

Activities Planned for 2015

- **TCFA (IES) during 2015**
  - Organization of WFCS 2015, SIES 2015 and ETFA 2015
  - Track chairs in ETFA 2015
  - Technical Involvement in ISIE 2015, IECON 2015, INDIN 2015, IECON 2015, HSI 2015
    - Lucia Lo Bello: Track Chair in ISIE 2015, IECON 2015
    - Lucia Lo Bello, Elisabeth Uhlemann, Johan :Åkerberg: Special Session on Communication in Automation @ INDIN 2015 (approved, online)
    - Other SS proposals are in progress for various conferences
  - Paper submissions to the Factory Automation track at all those conferences
  - Reviewers for the IEEE and IES conferences
  - Associate Editors and Reviewers for the IEEE IES Transactions on Industrial Electronics , IEEE IES Transactions on Industrial Informatics, the Industrial Electronics Magazine
  - Special sections in the IEEE Transactions on Industrial Informatics:
    - Stefano Vitturi et al.: TII Special Section on Communication in Automation with WFCS 2015
    - A few TII Special Session proposals (in progress)
  - Workshop organizations planned for 2015
  - Workshops (SOCNE 2015, RTT2015…)@ETFA 2015
- First TCFA meeting: held at ETFA 2014 in Barcelona on Sept. 18.

2015 Activities reported so far

- **TCFA (IES) during 2015**
  - Organization of WFCS 2015, SIES 2015 and ETFA 2015
  - Track chairs in ETFA 2015
  - Technical Involvement in ISIE 2015, IECON 2015, INDIN 2015, HSI 2015
    - Lucia Lo Bello: Track Chair in ISIE 2015, IECON 2015
    - Lucia Lo Bello, Elisabeth Uhlemann, Johan Åkerberg: Special Session on Communication in Automation @ INDIN 2015
    - Marco Porta et al.: Special Session on "Human Sensing for Industrial Applications" @INDIN'15
    - Carla Seatzu: IEEE Conf. on Automation Science and Engineering 2015
    - Adriano Valenzano: RTSI 2015
  - Paper submissions to the Factory Automation track at all those conferences
  - Reviewers for the IEEE and IES conferences
  - Associate Editors and Reviewers for the IEEE IES Transactions on Industrial Electronics , IEEE IES Transactions on Industrial Informatics, the Industrial Electronics Magazine
  - Special sections in the IEEE Transactions on Industrial Informatics:
    - Stefano Vitturi et al.: TII Special Section on Communication in Automation with WFCS 2015
    - Carla Seatzu, Alexander Fay ,Marek Miskowick: TII SS on Emerging Technologies in Factory Automation (to appear).
    - A few TII Special Session proposals (in progress)
  - Workshops
    - RTT2015 @ETFA 2015   Antoni Grau, Marina Indri
    - SOCNE 2015@ETFA 2015: Frank Golatowski, Lucia Lo Bello
- ….

Activities Planned for 2016

- **TCFA (IES) during 2016**
  - Organization of WFCS 2016, ETFA 2016…
  - Track chairs in ETFA 2016
  - Technical Involvement in IECON 2016, INDIN 2016
    - Other SS proposals are in progress for various conferences
  - Paper submissions to the Factory Automation track at all those conferences
  - Reviewers for the IEEE and IES conferences
  - Associate Editors, Guest Editors and Reviewers for the IEEE IES Transactions on Industrial Electronics , IEEE IES Transactions on Industrial Informatics, the Industrial Electronics Magazine
  - Thilo Sauter Editor-in-Chief of the Industrial Electronics Magazine
  - Special sections in the IEEE Transactions on Industrial Informatics:
    - TII Special Section on Communication in Automation with WFCS 2015 (in progress): Thilo Sauter, Julian Proenza, Stefano Vitturi, Paulo Pedreiras.
    - TII Special Section on **New perspectives on Wireless Communications in automation: From industrial monitoring and control to cyber-physical systems -** Lucia Lo Bello, Elisabeth Uhlemann, Johan Åkerberg:, Mikael Gidlund.
    - A few TII Special Session proposals (for WFCS 2016 , in progress)
  - Workshop organizations planned for 2016: TBD
- Next meeting: TBD