

International Federation of Automatic Control (IFAC)

Activities' Report - Year 2018

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1) Premise

IFAC is an organization of Nations founded in 1956. Each nation is represented by a "National member Organization" (NMO). CNR is the Italian NMO for IFAC. There are currently 50 nations participating to IFAC: Argentina, Australia, Austria, Azerbaijan, Belgium, Brazil, Bulgaria, Canada, Chile, China, Croatia, Cuba, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, India, Ireland, Israel, Italy, Japan, Republic of Korea, Republic of Kosovo, Lithuania, Malaysia, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Tunisia, Turkey, Ukraine, United Kingdom, Usa.

IFAC activities are mainly focused on the organization of scientific events (about 40 per year) and publications (7 journals) in a variety of diverse control disciplines. The scientific areas are articulated in 9 Coordinating Committee (CC), each of them includes a few Technical Committees (TC). The flagship event is the triennial world congress (Milan 2011, Cape Town 2014, Toulouse 2017, Berlin 2000,), but IFAC also sponsors Symposia, Conferences and Workshops. The scientific range of research activities is witnessed by the 8 IFAC journals (Publisher Elsevier): Engineering Applications of Artificial Intelligence, Annual Reviews in Control, Automatica, Control Engineering Practice, , Mechatronics, Nonlinear Analysis: Hybrid System, Process Control, Systems and Control.

Additional information are in the IFAC web site: <http://www.ifac-control.org/>. See also "The IFAC Story", e-book edited by Steve Khane and "Italy in IFAC, from dawn to our days", edition by Sergio Bittanti.

The CNR Italian representative participates to the works of the General Assembly (GA), the most important parliamentary body of IFAC. The GA dictates the rules for the participation of nations, discusses the entrance of new members, according to the articles of the IFAC constitution, listen and reports the works of the Executive Board and Technical Board.

The CNR Italian representative checks and sign the proposals of IFAC events in Italy, organized by Italian IFAC members working in scientific centers (mainly universities). He guarantees the feasibility and quality of the proposed scientific event.

The CNR Italian representative proposes to the chairs of the various technical committees the inclusions in the TC lists of Italian members.

2)Year 2018

In 2018, the Italian delegates were Patrizio Colaneri (Politecnico di Milano & IEIT-CNR) and Fabrizio Dabbene (IEIT-CNR).

2.1) New countries entering the IFAC family

There were two ballots for countries memberships. They were both approved after a discussion among the delegates of the countries and the IFAC officials. The two new countries entered IFAC in 2018 are: Pakistan, Azerbaijan.

2.2) IFAC international events in Italy in 2018

Four IFAC events were carried out in Italy, having Italian researchers as NOC chairs. They are:

- “15° IFAC Symposium on Control in Transportation Systems (CTS), Savona. NOC Chair Simona Sacone, University of Genova.
- “IFAC Workshop on Integrated Assessment Modelling for Environmental Systems - 1st IAMES 2018, Brescia”. NOC Chair, Marialuisa Volta, University of Brescia.
- 14th Workshop on Discrete Event Systems, WOSSES 2018, Sorrento”, TC on Discrete Event and Hybrid Systems. NOC Chair, Francesco Basile, University of Salerno.
- “IFAC/IEEE Symposium on Information Control Problems in Manufacturing, INCOM 2018, Bergamo”. NOC Chairs, Sergio Cavalieri, University of Bergamo – Marco Macchi, Politecnico di Milano

2.3) Other events

a) SIDRA annual meeting.

The members of the Italian control community gather every year for the SIDRA (Società Italiana dei Ricercatori di Automatica) workshop and the assembly, where the IFAC activities are also reviewed. In 2018 the annual SIDRA meeting was held in Florence in September.

b) Colloquia Roberto Tempo in Automatica.

Launched by the Systems Modeling and Control (SMC) group of IEIT CNR, Organizers: Sergio Bittanti, Patrizio Colaneri, Fabrizio Dabbene (Chair of the SMC group).

The colloquia are dedicated to the memory of Roberto Tempo, former delegate of the Italian NMO, prematurely passed away in 2017. The colloquia are general seminars held by renowned scientists. They range over all aspects of systems and control, and on interdisciplinary subjects where control plays a fundamental role. They aim to contribute at the cultural atmosphere of our Institute, so offering young people the opportunity to be exposed to the teaching of internationally known scholars working in different research areas. The inaugural colloquium was held on June 8 2018 by Prof. B. Ross Barmish.

2.4) Italian people in IFAC

The Italian participation in IFAC has been always very important. The main positions held in 2018/2019 are here indicated:

- *David Angeli – Università di Firenze.*
Vice Chair for publications, TC 2.1 Control Design.
- *Alessandro Astolfi – Università Roma Tor Vergata.*
Chair CC2 Design Method.
- *Daria Battini - Università di Padova.*
Vice Chair for Education, TC 5.2 Manufacturing modelling for management and control.
- *Sergio Bittanti – Politecnico di Milano and CNR-IEIT.*
IFAC Vice President, chair of the Executive Board, currently IFAC Advisor.
- *Paolo Bolzern – Politecnico di Milano.*
E-media Editor of IFAC YouTube channel, member of IFAC "Publication committee".
- *Marco Campi – Università di Brescia.*
Chair TC 1.1 Modelling, Identification and Signal processing.
- *Alessandro Chiuso – Università di Padova.*
Chair TC 1.1 Modelling, Identification and Signal processing.
- *Patrizio Colaneri – Politecnico di Milano and CNR-IEIT.*
Italian NMO representative, Member of the Technical Board (Publication Committee), Permanent Executive Board guest (TB liaison), Senior Editor IFAC Journal "Nonlinear Analysis: Hybrid Systems".
- *Francesco Cuzzola – Danieli SpA*
Vice- Chair TC 6.2 Mining, Mineral and Metal Processing.
- *Fabrizio Dabbene – CNR-IEIT.*
Alternate Italian NMO representative.
- *Mariagrazia Dotoli – Università di Bari.*
Vice Chair for Social Media, TC 1.3 Discrete-Event and Hybrid Systems.
- *Cesare Fantuzzi – Università di Modena e Reggio Emilia.*
Vice-Chair TC. 3.1 Computers for Control.
- *Simone Formentin – Politecnico di Milano.*
Social Media representative TC 2.5 Robust Control.
- *Alessandro Giua - Università di Cagliari.*
Editor in Chief IFAC journal "Nonlinear Analysis – Hybrid Systems", Member of the Publication Committee.
- *Alberto Isidori – Università di Roma La Sapienza.*
Chair of IFAC Foundation, IFAC Advisor, Chair of the "High Impact Paper Award Committee".
- *Lorenzo Marconi- Università di Bologna*
Chair TC 2.3 Nonlinear Control Systems, Member of the Publication Committee.

- *Marco Macchi - Politecnico di Milano.*
Vice Chair for Publications, TC 5.1 Manufacturing Plant Control.
- *Emanuele Menegatti - Università di Padova.*
Vice Chair for Education, TC 4.3, Robotics.
- *Laura Menini – Università di Roma Tor Vergata.*
Chair TC 2.1 Control Design.
- *Gabriele Pannocchia - Università di Pisa*
Vice Chair for Education, TC 2.4 Optimal Control, Senior Editor Journal of Process Control.
- *Diego Pareschi – ABB.*
Member of “Policy Committee”.
- *Thomas Parisini – Università di Trieste.*
Chair TC 6.4 Fault Detection, Area Editor IFAC Journal AUTOMATICA.
- *Maria Prandini – Politecnico di Milano.*
Member of the policy committee.
- *Luca Schenato - Università di Padova.*
Vice Chair for Education, TC 1.5 Networked Systems.
- *Carla Seatzu - Università di Cagliari.*
Vice Chair for Publications, TC 1.3 Discrete-Event and Hybrid Systems.
- *Maria Elena Valcher – University of Padova.*
Member of the Technical Board.
- *Antonio Visioli – Università di Brescia.*
Vice Chair TC 9.4 Education.

2.4) 2019 IFAC events in Italy approved in 2018 by the Italian NMO:

15th European Workshop on Advanced Control and Diagnosis ACD 2019, Bologna. NOC Chair Elena Zattoni.

European Control Conference (Technical Sponsorship by IFAC), Napoli. General Chair Franco Garofalo, University of Naples.

3) Lifetime Italian IFAC award recipients

3.1) IFAC Fellows

Alessandro Astolfi, Sergio Bittanti, Patrizio Colaneri, Guido Guardabassi, Alberto Isidori, Edoardo Mosca, Thomas Parisini, Bruno Siciliano, Roberto Tempo (*), Giorgio Picci, Antonio Vicino.

(*) Roberto Tempo, director of research of IEIIT-CNR and past Italian NMO coordinator, passed away prematurely in 2017.

3.2) Italian IFAC outstanding service award recipients

G. Guardabassi, S. Bittanti, A. Isidori, P. Colaneri, A. Giua

3.3) Major Awards

2.7.1) Quazza Medal: Alberto Isidori, 1996

2.7.2) High Impact paper award: F. Blanchini, 2017

3.4) Journal prizes

3.4.1) Automatica paper prize: Franco Blanchini, 2002; C. Bonivento, A. Isidori, L. Marconi, A. Paoli, 2005; G. Pillonetto, 2017.

3.4.2) Control Engineering Practice Paper Prize: M.Corno, S. Savaresi, M. Tanelli, A. Fabbri, 2011.

3.4.3) Journal of Process Control Paper Prize: G. Pin, V. Francesconi, F. Cuzzola, T. Parisini, 2014

3.4.4) Journal of Engineering Applications of Artificial Intelligence Paper Prize: M. Barletta, A. Gisario, S. Guarino, 2008.

3.4.5) Nonlinear Analysis: Hybrid Systems Paper Prize: F. Blanchini, D. Casagrande, G. Giordano, U. Viaro, 2017.

3.5) Congress prizes

3.5.1) Young Author Prize

Luca Deori, 2017.

3.5.2) Application paper prize

A. Ballucchi, L. Benvenuti, A. Sangiovanni-Vincentelli, G. Serra, C. Lemma, 2005.

3.5.3) Interactive Paper prize

M. Corno, P. Spagnol, S. Savaresi, 2014

4) Final

The impact on the national scientific community is highly remarkable. The Italian control community is very active in the participation to events sponsored by IFAC, in the organization of such events, in the editorial board of the IFAC journals, in the revision process of the papers presented in IFAC events, in the rosters of technical committees and editorial boards of IFAC journals.

IFAC activities in IFAC are in good shape, both from the qualitative and quantitative viewpoints.

Signature

Patrizio Colaneri

Milano, May 15, 2019

A handwritten signature in black ink, appearing to read 'Patrizio', followed by a small horizontal flourish.