

International Federation of Automatic Control (IFAC)

Annual report 2022

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1) Premise

IFAC is an association of States founded in 1956. Each State is represented by a National member Organization (NMO) like CNR for Italy (since the start). There are currently 49 Countries represented: 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, Republic of Nord Macedonia, Malaysia, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Portugal, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Tunisia, Turkey, Ukraine, United Kingdom, USA.

The activities of IFAC mainly consist in the organization of scientific events (around 40 each year) and publication in various subfields of systems and control. The scientific areas are divided in 9 Coordinating Committees (CC), each subdivided in Technical Committees (TC). The most important event is the world Congress, scheduled every three years, the next ones will be held in Yokohama (Japan) in 2023 and Busan (South Korea) in 2026). In 2022 the location of the 2029 Congress will be decided. There are also Symposia, Conferences and Workshops. The scientific activities have a broad action range, witnessed by the presence of 8 IFAC publications (Pub. Elsevier), namely *Engineering Applications of Artificial Intelligence*, *Annual Reviews in Control*, *Automatica*, *Control Engineering Practice*, *Mechatronics*, *Nonlinear Analysis: Hybrid System*, *Process Control*, *Systems and Control*.

The IFAC president is Hajime Asama, in charge till the next Congress, scheduled in Yokohama, **Japan in 2023**. Further information can be found at: <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", by Sergio Bittanti, https://bittanti.faculty.polimi.it/docs/IFAC_Italy.pdf.

The NMO Italian representative participates in the General Assembly (GA), that is the most important parliamentary body in IFAC. It dictates the rule of representation, the entrance of new member Countries, in accordance with the articles of the IFAC Constitution (<https://www.ifac-control.org/structure/IFAC%20Constitution-and-By-Laws.pdf>), 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 of Italian members.

2) Year 2022

In 2022, the Italian NMO representatives are Patrizio Colaneri (Chair, Politecnico di Milano & IEIIT-CNR) and Fabrizio Dabbene (Vice chair, IEIIT-CNR).

2.1) IFAC International Events in Italy in 2022

IFAC Workshop on Control of Complex Systems - 1st COSY™ 2022
24, 25 November 2022, Bologna, ITALY. Elena Zattoni, Univ. Bologna, (NOC chair),
G. Pepe, Un. L'Aquila, (NOC Vice chair), D. Mascolo, Big Data Innovation & Research Excellence
(vice NOC chair for industry).

IFAC Workshop on
Control Methods for Water Resource Systems - 2nd CMWRS 2022™
Milan, ITALY, Andrea Castelletti
Co-Chair & Academic Editor
Politecnico di Milano (IT)

2.2) IFAC international events in Italy accepted for 2023

No sponsored event in 2023 (Congress year). Co-sponsored events:

INSTICC (IFAC) Conference on Informatics in Control, Automation and Robotics - 20th ICINCO 2023
Rome, ITALY

International Workshop on (co-sponsored by IFAC) Enterprise Integration, Interoperability and Networking - 17th EI2N 2023
Rome, ITALY

In 2024:
IFAC Workshop on Advanced Maintenance Engineering, Services and Technology - 6th AMEST 2024™
Cagliari, ITALY

2.4) Presidency IFACa

Italy participated in 2022 at the bid for the IFAC World Congress in 2029 in Rome and the IFAC presidency in the triennium 2026-2029. 7 Countries presented the application and Italy was one of the finalists. The Congress was won by the Netherlands, but **Italy won the IFAC presidency in the triennium 2026-2029, in the person of Prof.ssa Maria Prandini (Politecnico di Milano).**

2.5) Sidra

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 2021 the annual SIDRA meeting was run virtually, cause of the persistence of pandemic.

3) Italians in IFAC

The Italian participation in IFAC has been always very important. The main positions held in 2021 are here indicated in alphabetical order:

Alessandro Astolfi – Università Tor Vergata, Roma
Vice chair technical Board

Sergio Bittanti – Politecnico di Milano
IFAC advisor

Daria Bottini – Università di Padova.
Vice Chair for Education, TC 5.2 Manufacturing modelling for management and control.

Claudia Califano – Università di Roma 1
Vice-chair TC 2.3 Nonlinear Control System

Marco Campi – Università di Brescia
Vice-chair TC 1.1 Modelling, Identification and signal processing

Claudio Carnevale – Università di Brescia
Vice-Chair for projects: TC 8.3 Modelling and Control of Environmental Systems

Alessandro Chiuso- Università di Padova.
Chair, TC 1.1 Modelling, Identification and Signal processing.

Patrizio Colaneri - Politecnico di Milano and CNR-IEIIT.
Italian NMO chair

Fabrizio Dabbene - CNR-IEIIT .
Vice chair Italian NMO representative

Maria Domenica Di Benedetto – Università di L'Aquila
Member Award Committee Nathaniel B. Nichols Medal

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.

Sergio Galeani – Università Roma Tor Vergata
Chair TC 2.1 Control Design

Alessandro Giua - Università di Cagliari.
Editor in Chief IFAC journal "Nonlinear Analysis - Hybrid Systems", Member of the Publication Board.

Matteo Giuliani – Politecnico di Milano

Vice-Chair for social media TC 8.3 Modelling and Control of Environmental Systems

Luigi Glielmo – Università del Sannio
Member Conference board

Samuele Grillo – Politecnico di Milano
Vice-chair TC 6.3 Power and Energy Systems

Giorgio Guariso – Politecnico di Milano Sapienza.
Deputy chair TC. 8.3

Alberto Isidori - Università di Roma La Sapienza.
IFAC Advisor, Member award: Annual Reviews in Control Paper Prize

Marco Macchi - Politecnico di Milano.
Chair TC 5.1 Manufacturing Plant Control.

Lorenzo Marconi- Università di Bologna
Vice Chair TC 2.3 Nonlinear Control Systems, Member of the Publication Board.

Emanuele Menegatti - Università di Padova.
Vice Chair for Education, TC 4.3, Robotics.

Laura Menini - Università di Roma Tor Vergata.
Chair CC 2 Design Methods.

Gabriele Pannocchia - Università di Pisa
Vice Chair for Education, TC 2.4 Optimal Control, Senior Editor Journal of Process Control.

Maria Prandini – Politecnico di Milano
Vice president of IFAC, Chair conference board, distinguished lecturer program committee,
diversity and inclusion committee.

Thomas Parisini - Università di Trieste.
Area Editor IFAC Journal AUTOMATICA.

Corrado Possieri – CNR
Vice Chair Social media TC 2.1 Control Design

Michela Robba – Università di Genova
Vice-Chair for publications TC 8.3 Modelling and Control of Environmental Systems

Luca Schenato - Università di Padova.
Vice Chair for Education, 1.5 Networked Systems.

Carla Seatzu - Università di Cagliari.
Chair TC 1.3 Discrete-Event and Hybrid Systems.

Gian Antonio Susto – Università di Padova

TC 3.3. Vice-Chair for Industry Liaison

Maria Elena Valcher - Università di Padova.
Member TC awards, Technical board

Antonio Visioli – Università di Brescia
Chair TC9.4 Control Education

Maria Luisa Volta – Università di Brescia
Chair TC 8.3 Environmental Systems

Luca Zaccarian – Università di Trento
Nonlinear Analysis: Hybrid System Paper Prize

4) Italians awarded with IFAC prizes

a. Fellows IFAC

Alessandro Astolfi, Sergio Bittanti, Marco Campi, Patrizio Colaneri, Maria Domenica Di Benedetto, Antonella Ferrara, Alessandro Giua, Guido Guardabassi, Alberto Isidori, Edoardo Mosca, Thomas Parisini, Bruno Siciliano, Roberto Tempo, Giorgio Picci, Maria Elena Valcher, Antonio Vicino.

(*) Roberto Tempo, direttore di ricerca IEIIT-CNR and Italian delegate of CNR in IFAC, passed away prematurely in 2017.

b. IFAC "outstanding service award"

G. Guardabassi, S. Bittanti, A. Isidori, M. Campi, A. Astolfi, P. Colaneri, A. Giua

c. Major Awards

Quazza Medal: Alberto Isidori, 1996

High Impact paper award: Alberto Bemporad and Manfred Morari, 2014

High Impact paper award: F. Blanchini, 2017

d. Journal prizes

Automatica paper prize: A. Isidori 1993, R. Tempo 1993, Franco Bianchini, 2002; C. Bonivento, A. Isidori, L. Marconi, A. Paoli, 2005; G. Pillonetto, 2017.

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

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

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

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

Annual Reviews in Control Paper Prize, A. Postkurnikov, R. Tempo, Berlin 2020.

e. Congress prizes

Young author prize: Luca Deori, 2017.

Application paper prize: A. Ballucchi, L. Benvenuti, A. Sangiovanni-Vincentelli, G. Serra, C.Lemma, 2005.

Interactive Paper prize: M. Corno, P. Spagnol, S. Savaresi , 2014

5) Final Remarks

The Italian community in Systems and Control is highly active in the organization and participation of IFAC scientific events, in the review process of such events, in the presence in Technical Committees and various editorial rosters of IFAC journals. Every year the Italian researchers in Automatica gather for the National congress SIDRA (Società Italiana dei Ricercatori di Automatica) and the associated assembly, where IFAC activities are reported. IFAC in Italy is in good shape, both from the qualitative and quantitative viewpoint.

Firma

Milano, 22nd April 2022

