

## International Federation of Automatic Control (IFAC)

### Annual report 2020

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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, SouthAfrica, 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 (8 journals) 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 (Milano 2011, Cape Town 2014, Toulouse 2017, Berlin 2020, Yokohama 2023). 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*.

#### **Due to the pandemic, the Berlin World Congress was run virtually.**

The new 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.

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, 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 2020**

In 2020, the Italian NMO representatives were Patrizio Colaneri (Chair, Politecnico di Milano & IEIIT-CNR) and Fabrizio Dabbene (Vice chair, IEIIT-CNR).

### **Eventi internazionali IFAC in Italia nel 2020**

**During the World Congress year, no IFAC events can be run. However, events of other organizations in cooperation with IFAC are possible.**

#### **2.1) Congress**

The Berlin Congress was held virtually. Many sessions and panels were dedicated to the study of epidemiologic models to combat the pandemic. The participation in these sessions and in general to all scientific sessions, technical and executive meetings was intense. The General Assembly was fully participated and ran smoothly. It was decided that the Country fee is reduced by 50% during the pandemic. A few amendments (discussed during the year) of the Constitution were approved by the GA, mainly concerning the composition of the Technical and Executive activities and the duties of the IFAC Officers.

#### **2.2) Main events in cooperation with IFAC**

ACC (in cooperation AACC) Denver  
ECC (in cooperation EUCA) Saint Petersburg

#### **2.4) Other events in 2020**

##### **a) Incontro SIDRA.**

The members of the Italian control community gather every year for the SIDRA (Societa Italiana dei Ricercatori di Automatica) workshop and the assembly, where the IFAC activities are also reviewed. In 2020 the annual SIDRA meeting was scheduled in Cagliari, but was run virtually, cause of the pandemic.

##### **b) Colloquia Roberto Tempo in Automatica.**

Launched by the Systems Modeling and Control (SMC) gro up of IEIIT CNR, Organizers: Sergio Bittanti, Patrizio Colaneri, Fabrizio Dabbene (Chair of the SMC group). The colloquia are dedicat ed to the memor y 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. Prof. A. Isidori (2017), Prof. R. Barmish (2018), Prof. Francesco Bullo (2019).

- c) IEEE-CSS Workshop on Modeling and Prediction of Covid-19: 24 aprile 2020 – from 9.30 to 17.20 ONLINE. Organizzatore Fabrizio Dabbene (CNR). In the spirit of the Chapter activities, the workshop was held in English, free of charge and open to everybody. The whole event was streamed live on the official IEEE-CSS Italy Youtube Channel and through the ZOOM platform. The success of the event, surely due to the interest of the topic, its easy accessibility, and of course the fact that most of us was locked home with few distractions, went beyond expectations. The workshop had an average of 400 viewers connected to the Youtube channel, with more than 3,000 total visualizations.

### **2.3) IFAC events in Italy approved in 2020 by the Italian NMO:**

IFAC Symposium on [Advanced Control of Chemical Processes - 11th ADCHEM 2021™](#), Venice, ITALY  
Gabriele Pannocchia, University of Pisa (NOC Chair), Fabrizio Bezzo, University of Padova, (NOC Co-Chair).

IFAC Symposium on [System Identification: learning models for decision and control - 19th SYSID 2021™](#)  
Padova, ITALY, Alessandro Chiuso, University of Padova, NOC Chair.

IFAC Workshop on [Linear Parameter Varying Systems - 4th LPVS 2021™](#), Milan, ITALY,  
Simone Formentin, Politecnico di Milano (NOC Chair), Marco Lovera, Politecnico di Milano (NOC Co-Chair)

IFAC Workshop on [Aerospace Control Education 2021™](#), Milano, ITALY  
Marco Lovera, Politecnico di Milano (NOC Chair), Paolo Castaldi, Università di Bologna (NOC Co-Chair)

IFAC Conference on [Analysis and Control of Chaotic Systems - 6th CHAOS 2021™](#), Catania, ITALY  
Arturo Boscarino, University of Catania (NOC Chair), Maide Bucolo, University of Catania (NOC Co-chair).

### **3) Italians in IFAC**

The Italian participation in IFAC has been always very important. The main positions held in 2020 are here indicated in alphabetical order:

David Angeli – Università di Firenze.  
Vice Chair for publications, TC 2.1 Control Design.

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

Franco Blanchini – Università di Udine  
High impact paper committee

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

Alessandro Chiuso- Università di Padova.

Chair, TC 1.1 Modelling, Identification and Signal processing.

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

Francesco Cuzzola - Danieli SpA  
Vice- Chair TC 6.2 Mining, Mineral and Metal Processing.

Fabrizio Dabbene - CNR-IEIIT.  
Alternate Italian NMO representative, Vice Chair for Publications TC 2.5 Robust Control.

Maria Domenica Di Benedetto  
Award Committe

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.

Sergio Galeani  
Chair TC21

Roberto Galeazzi  
Chair TC72

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

Luigi Glielmo – Università del Sannio  
Member Technical Committee

Alberto Isidori - Università di Roma La Sapienza.  
IFAC Foundation, IFAC Advisor, Member of the selection committee for the "Quazza Medal".

Marco Macchi - Politecnico di Milano.  
Vice Chair for Publications, TC 5.1 Manufacturing Plant Control.

Lorenzo Marconi University of Bologna  
Publication Board

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

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.

Diego Pareschi - ABB.  
Member of "Policy Committee" .

Maria Prandini – Politecnico di Milano  
Vice Chair IFAC, Chair conference board, distinguished lecturee c ommittee, diversity and inclusion committee

Thomas Parisini - Università di Trieste.  
Chair TC 6.4 Fault Detection, Area Editor IFAC Journal AUTOMATICA.

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 Syst ems.

Maria Elena Valcher - Università di Padova.  
Member of the Technical Board.

Antonio Visioli Chair TC94

#### **4) Italians awarded with IFAC prizes**

##### **a. Fellows IFAC**

Alessandro Astolfi, Sergio Bittanti, Marco Campi, Patrizio Colaneri, Maria Domenica Di Benedetto, Alessandro Giua, Guido Guardabassi, Alberto Isidori, Edoardo Mosca, Thomas Parisini, Bruno Siciliano, Roberto Tempo (\*), Giorgio Picci, 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: F. Blanchini, 2017

##### **d. Journal prizes**

Automatica paper prize: 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.

IFAC Journal Mechatronics Giovanni Cherubini, Berlin, 2020.

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. In particular, one of the 8 IFAC journals is directed by an Italian researcher. 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 generally revised. IFAC activities in IFAC are in good shape, both from the qualitative and quantitative viewpoint.

Firma

Milano, 5th May 2021

