



INTERNATIONAL FEDERATION  
OF AUTOMATIC CONTROL



# Introduction to IFAC

**International Federation of Automatic Control**

**June 30, 2023**

## IFAC

- Founded in Paris in 1957.
- IFAC Members: ~50 National Member Organizations (NMOs)

### AMERICAS

Brazil  
Canada  
Chile  
Cuba  
Mexico  
Peru  
USA

### ASIA and OCEANIA

Australia  
Azerbaijan  
China  
India  
Israel  
Japan  
Korea, Rep. of  
Malaysia  
Pakistan  
Singapore

### EUROPE and AFRICA

Austria  
Belgium  
Bulgaria  
Croatia  
Czech Rep.  
Denmark  
Estonia  
Finland  
France  
Germany  
Hungary  
Italy  
Ireland  
Kosovo  
Macedonia, Rep. of N.  
Netherlands  
Norway  
Poland  
Portugal  
Romania

Russia  
Slovakia  
Slovenia  
South Africa  
Spain  
Sweden  
Switzerland  
Tunisia  
Turkey  
Ukraine  
United Kingdom

- In each country or region, a scientific society is a member.

Brazil: SBA, Mexico: AMCA, USA: AACC (IEEE, ASME, AIChE, ...), ...

Australia: Engineers Australia, China: CAA, Japan: SCJ, Korea: ICROS, ...

France: SAGIP, Germany: VDI/VGE, South Africa: SACAC, UK: UKACC, ...

- **Vision**

...for IFAC to be the worldwide federation for promoting automatic control for the benefit of humankind.

- **Mission**

...to promote the science and technology of automatic control through technical meetings, publications and other means consistent with the goals and values of IFAC.

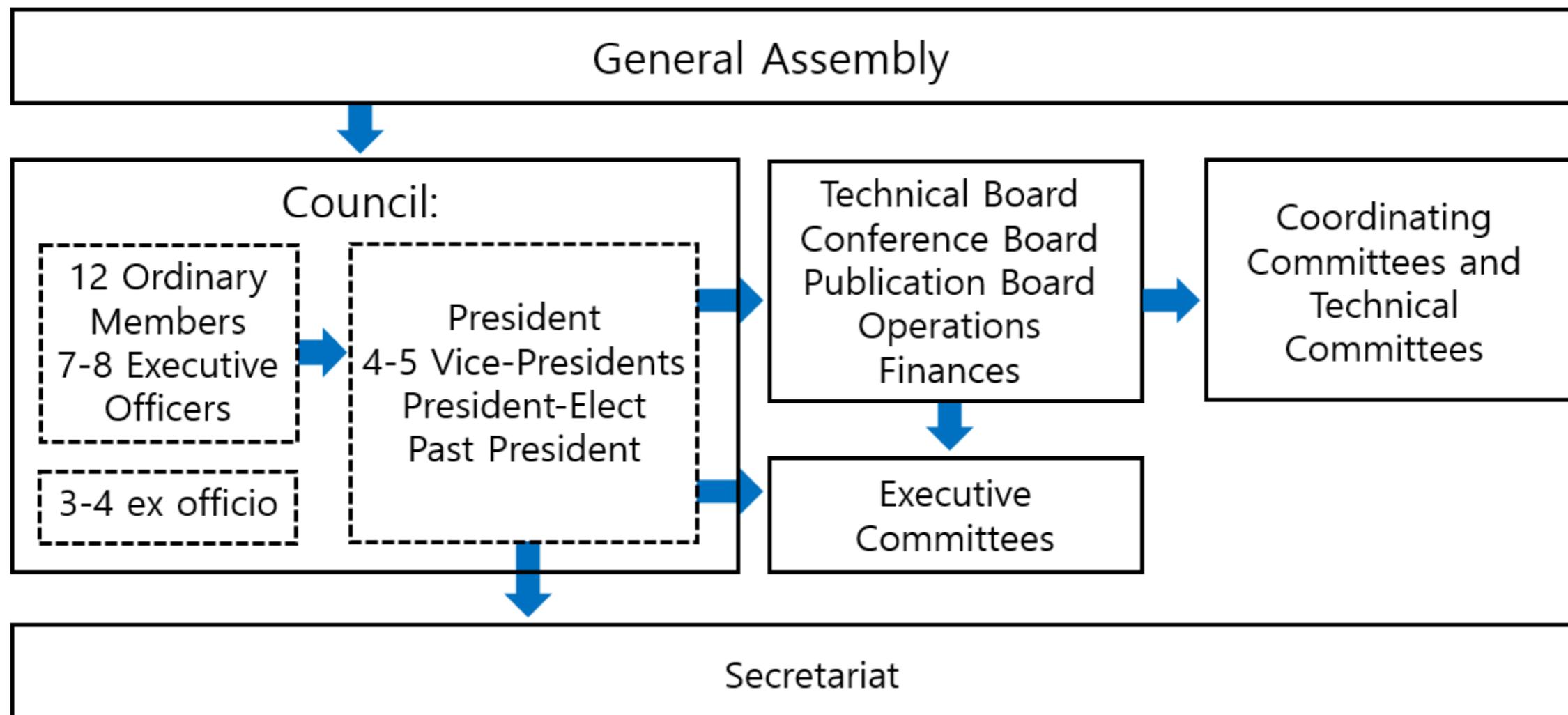
- **Values**

- Honesty and Integrity
- Excellence and Relevance
- Sustainability
- Diversity and Inclusivity

- **IFAC Code of Conduct**

## IFAC's Structure

- General Assembly: supreme body comprised of NMOs
- Council: manages Technical Board, Conference Board, Publications Board, and Executive Committees
- All terms of office are for three years.



## Meetings

- General Assembly meets every three years at the IFAC World Congress.
- Council meets yearly at the IFAC World Congress and IFAC sponsored (or co-sponsored) conference.
- Executive Officers meet in several times per year.
- Technical Board, Conference Board, Publications Board meet at least once a year.
- Executive Committees and Technical Committees should meet at least once a year.
- All IFAC service is done on a voluntary basis.

**39 Technical Committees (TCs) are organized in 9 Coordinating Committees (CCs):** ~4000 volunteers serve on these committees, 9 CC Chairs are TB members, 9 CC Co-Chairs are CB Members

## THEORY

1. Systems and Signals
  - 1.1. Modelling, Identification and Signal Processing
  - 1.2. Adaptive and Learning Systems
  - 1.3. Discrete Event and Hybrid Systems
  - 1.4. Stochastic Systems
  - 1.5. Networked Systems
2. Design Methods
  - 2.1. Control Design
  - 2.2. Linear Control Systems
  - 2.3. Non-Linear Control Systems
  - 2.4. Optimal Control
  - 2.5. Robust Control
  - 2.6. Distributed Parameter Systems

## TECHNOLOGY

3. Computers, Cognition and Communications
  - 3.1. Computers for Control
  - 3.2. Computational Intelligence in Control
  - 3.3. Telematics: Control via Communication Networks
4. Mechatronics, Robotics and Components
  - 4.2. Mechatronic Systems
  - 4.3. Robotics
  - 4.5. Human Machine Systems

## APPLICATIONS

### 5. Cyber-Physical Manufacturing Enterprises

- 5.1. Manufacturing Plant Control
- 5.2. Management and Control in Manufacturing and Logistics
- 5.3. Integration and Interoperability of Enterprise Systems (I2ES)
- 5.4. Large Scale Complex Systems

### 6. Power and Process Systems

- 6.1. Chemical Process Control
- 6.2. Mining, Mineral & Metal Processing
- 6.3. Power and Energy Systems
- 6.4. Safeprocess

### 7. Transportation and Vehicle Systems

- 7.1. Automotive Control
- 7.2. Marine Systems
- 7.3. Aerospace
- 7.4. Transportation Systems
- 7.5. Intelligent Autonomous Vehicles

### 8. Bio & Ecological Systems

- 8.1. Control in Agriculture
- 8.2. Biological and Medical Systems
- 8.3. Modelling & Control of Environmental Systems
- 8.4. Biosystems and Bioprocesses

### 9. Social Systems

- 9.1. Economic & Business Systems
- 9.2. Systems and Control for Societal Impact
- 9.3. Control for Smart Cities
- 9.4. Control Education
- 9.5. Technology, Culture and International Stability

**Industry Committee is in TB** (the chair is an *ex officio* Council Member)

**IFAC sponsors ~70 & co-sponsors ~30 conferences every 3 years.**

TB approves conferences.

CB oversees conference quality control and finances.

- IFAC World Congresses: every 3 years, attended by 3000~4000
- IFAC Conferences:
  - Symposia (Masterplan Events): every 3 years
  - Conferences: 1 or 2 times in 3 years
  - Workshops: 1 or 2 times in 3 years
- IFAC Co-sponsored Events:
  - American Control Conference (ACC),
  - European Control Conference (ECC),
  - Asian Control Conference (AsCC),
  - Control Conference Africa (CCA), and others
- IFACx labeled conferences:



## IFAC Newsletter

- Six times per year
- Free to all IFAC Affiliates



# NEWSLETTER

E-MAIL: [NEWSLETTER@IFAC-CONTROL.ORG](mailto:NEWSLETTER@IFAC-CONTROL.ORG) | PHONE +43 2236 71447

[www.ifac-control.org](http://www.ifac-control.org)

### IFAC Major Awards & Medals 2020-2023 Announced!

The IFAC Council voted on the 2020-2023 IFAC Major Awards and Medals at their meeting in London, UK in July 2022. Awardees will receive their awards in conjunction with the IFAC World Congress 2023 in Yokohama, JP.

Information about past winners, descriptions of each award/medal, as well as the composition of each selection committee and the Major Award Selection Committee can be found at:

<https://www.ifac-control.org/awards/major-awards>

The IFAC Awards Committee Chair for 2020-2023 is Janan Zaytoon (FR).

#### Nichols Medal

Mrdjan Jankovic (US): *For innovative fundamental contributions to the control of automotive systems.*

#### Quazza Medal

A. Stephen Morse (US): *For fundamental contributions to geometric control theory, adaptive and logic-based switching control, and distributed sensing and control.*

#### Thoma Medal

Na (Lina) Li (US): *For fundamental contributions*

### IFAC Foundation Kwon Award: Call for Nominations

#### IFAC Foundation Kwon Award

Recognizing contributions to advances in sustainable development

The Foundation solicits nominations for papers published in IFAC journals in the broad area of sustainable development.

One of the aims of the IFAC Foundation is to promote the awareness and dissemination of the social relevance of automatic control. The IFAC Foundation recognizes at each IFAC World Congress the contributions of individuals or a group of individuals who through their work have shown how automatic control science and technology can contribute to significant advances in the broad area of "sustainable development".

This includes work on the topics of renewable and clean energy, management of energy, water and resources in general, control in agriculture, pollution control, climate control or similar.

All papers published in any of the IFAC Journals during the triennium of 2020-2022 are eligible for nomination. The IFAC Foundation Kwon Award is made in honour of Professor Wook Hyun Kwon whose initial donation fostered the creation of the IFAC Foundation.

The award winner(s) will receive a certificate and cash prize of 2000 euro (total) at the time of the

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October 2022

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#### The IFAC Journals

##### Automatica

[www.journals.elsevier.com/automatica](http://www.journals.elsevier.com/automatica)

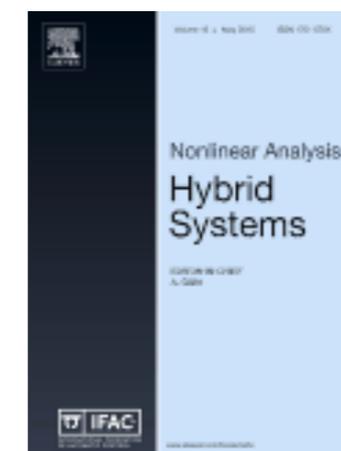
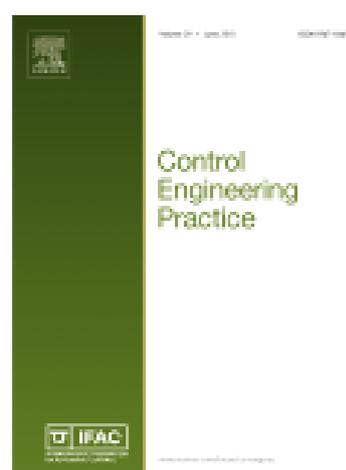
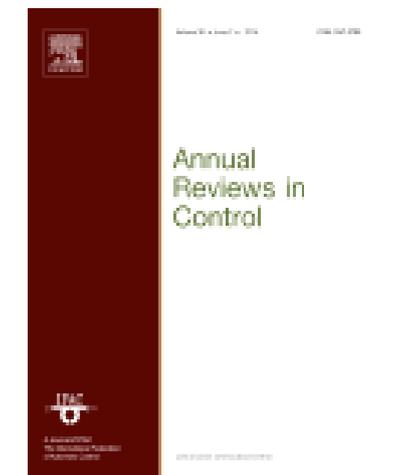
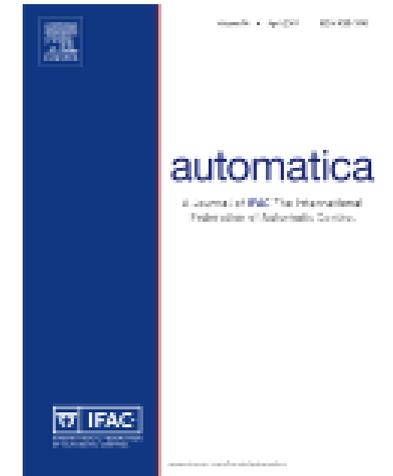
**Control Engineering Practice**  
[www.journals.elsevier.com/control-engineering-practice](http://www.journals.elsevier.com/control-engineering-practice)

**Engineering Applications of Artificial Intelligence**  
[www.journals.elsevier.com/engineering-applications-of-artificial-intelligence](http://www.journals.elsevier.com/engineering-applications-of-artificial-intelligence)

**Journal of Process Control**  
[www.journals.elsevier.com/journal-of-process-control](http://www.journals.elsevier.com/journal-of-process-control)

## IFAC Journals (2022 IF)

- Annual Reviews in Control (9.4)
- Automatica (6.4)
- Control Engineering Practice (4.9)
- Eng. App. of Artificial Intelligence (8.0)
- IFAC Journal of Systems and Control (1.9)
- Journal of Process Control (4.2)
- Mechatronics: with subtitle robotics (3.3)
- Nonlinear Analysis: Hybrid Systems (4.2)



## IFAC-PapersOnLine (IFAC-POL)

- All IFAC conference papers are published in POL.
- Diamond open access:
  - No cost for readers, authors, or their institutions.
  - Authors retain the copyright.
  - Exclusive publication & distribution license to IFAC.
- IFAC pays the publisher, and there is no cost to conference organizers.



## IFAC Fellows

## IFAC Major Awards

Giorgio Quazza Medal  
Nathaniel B. Nichols Medal  
Manfred Thoma Medal  
Industrial Achievement Award  
High Impact Paper Awards

## IFAC Textbook Award

Harold Chestnut Control Engineering  
Textbook Prize

## IFAC Journal Awards

Automatica Paper Prize  
Control Engineering Practice Paper Prize  
Journal of Process Control Paper Prize  
Engineering Applications of  
Artificial Intelligence Paper Prize  
Mechatronics Journal Paper Prize

Nonlinear Analysis: Hybrid Systems Paper Prize  
Annual Reviews in Control Paper Prize  
IFAC Systems and Control

## IFAC Congress Prizes

IFAC Applications Paper Prize (APP)  
IFAC Young Author Award (YAA)  
IFAC Congress Interactive Paper Prize (IPP)

## IFAC Outstanding Service Award

## IFAC Distinguished Lecturer

## IFAC TC Awards

## IFAC Foundation Awards

Kwon Award  
D & I Award

## Executive Committees

Awards Committee (who is in the loop? Report to President)

Membership Committee (Past President)

Activity Funds Committee since 2023 (VP Technical Board)

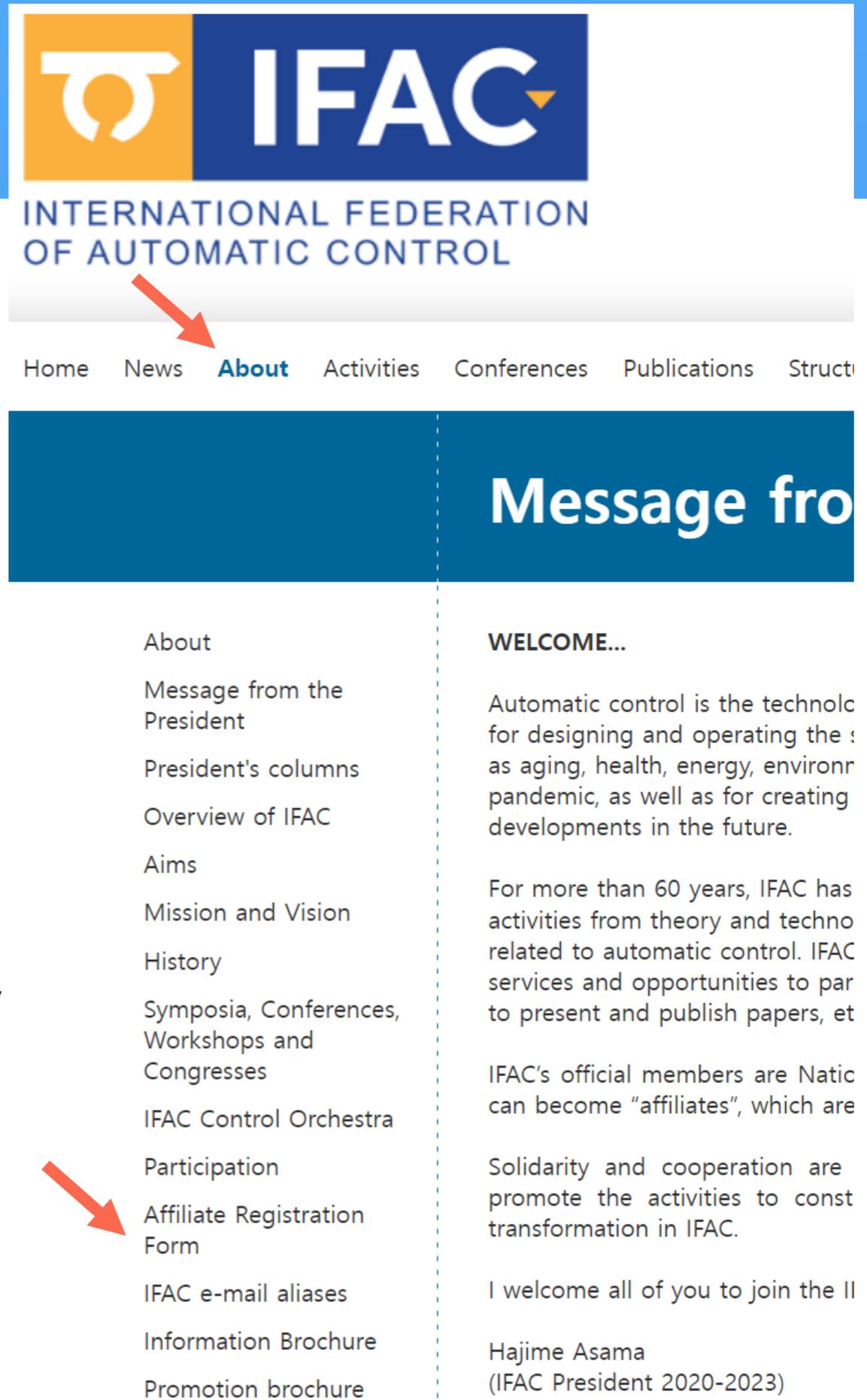
Lecturer Program Committee since 2023 (VP Conferences)

Diversity and Inclusion Committee since 2023, ex officio Council Member (VP Publications)

Education Activities Committee since 2026, ex officio Council Member, new (President Elect)

## What is IFAC all about?

- ~50 National Members
- ~100 technical conferences every 3 years
- ~4,000 volunteers
- Governance: Constitution and By-Laws
- IFAC Code of Conduct
- History: a 308-page e-book  
<https://www.ifac-control.org/about/the-ifac-story>
- Individuals can join as “IFAC Affiliates”:  
free subscription to newsletters and  
conference announcements



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## Message fro

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IFAC Control Orchestra

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IFAC e-mail aliases

Information Brochure

Promotion brochure

**WELCOME...**

Automatic control is the technolo for designing and operating the s as aging, health, energy, environr pandemic, as well as for creating developments in the future.

For more than 60 years, IFAC has activities from theory and techno related to automatic control. IFAC services and opportunities to par to present and publish papers, et

IFAC's official members are Natic can become "affiliates", which are

Solidarity and cooperation are promote the activities to const transformation in IFAC.

I welcome all of you to join the II

Hajime Asama  
(IFAC President 2020-2023)

- 1st Congress, 1960: Moscow (SU)
- 2nd Congress, 1963: Basel (CH)
- 3rd Congress, 1966: London (UK)
- 4th Congress, 1969: Warsaw (PL)
- 5th Congress, 1972: Paris (FR)
- 6th Congress, 1975: Boston/Cambridge (US)
- 7th Congress, 1978: Helsinki (FI)
- 8th Congress, 1981: Kyoto (JP)
- 9th Congress, 1984: Budapest (HU)
- 10th Congress, 1987: Munich (DE)
- 11th Congress, 1990: Tallinn (SU)
- 12th Congress, 1993: Sydney (AU)
- 13th Congress, 1996: San Francisco (US)
- 14th Congress, 1999: Beijing (CN)
- 15th Congress, 2002: Barcelona (ES)
- 16th Congress, 2005: Prague (CZ)
- 17th Congress, 2008: Seoul (KR)
- 18th Congress, 2011: Milan (IT)
- 19th Congress, 2014: Cape Town (ZA)
- 20th Congress, 2017: Toulouse (FR)
- 21st Congress, 2020: Berlin (DE)
- 22nd Congress, 2023: Yokohama (JP)
- 23rd Congress, 2026: Busan (KR)
- 24th ICongress, 2029: Amsterdam (NL)

**Thank you!**