



4th IFAC Conference

on Embedded Systems, Computational Intelligence and Telematics in Control
Valenciennes, France, 5-7 July 2021



INTERNATIONAL FEDERATION
OF AUTOMATIC CONTROL

□

Welcome to the 2021 annual meeting of the TC 3.2. « Computational Intelligence in Control »

July 6, 2021

13:15 – 14:00 (CET)

Quick presentation of IFAC: an international scientific organization...



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

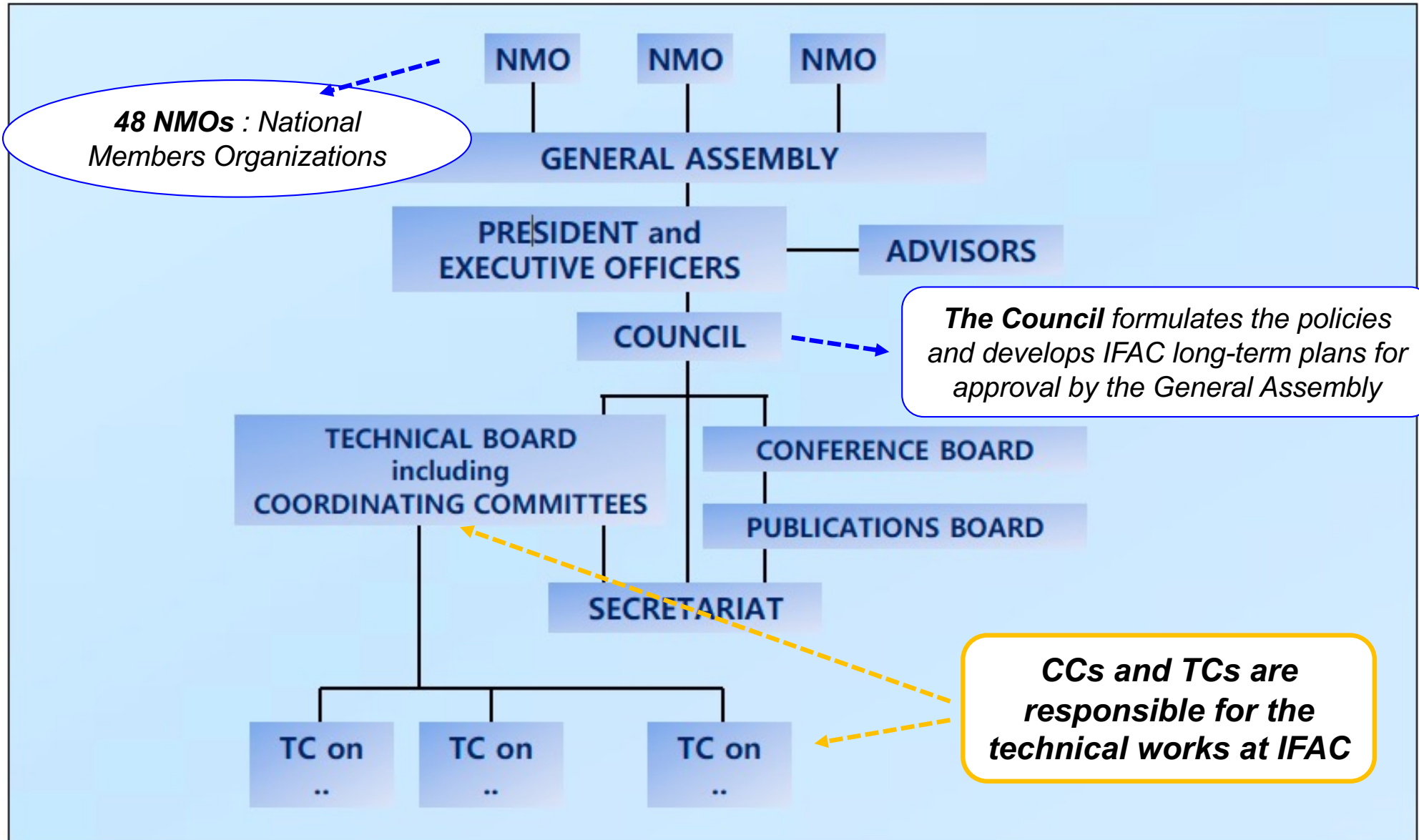
Vision: *“...for IFAC to be the worldwide federation for promoting automatic control for the benefit of humankind”*

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.”*

A bit of history: *IFAC was founded in Paris in 1957 with its first General Assembly convened at the constituent meeting...*

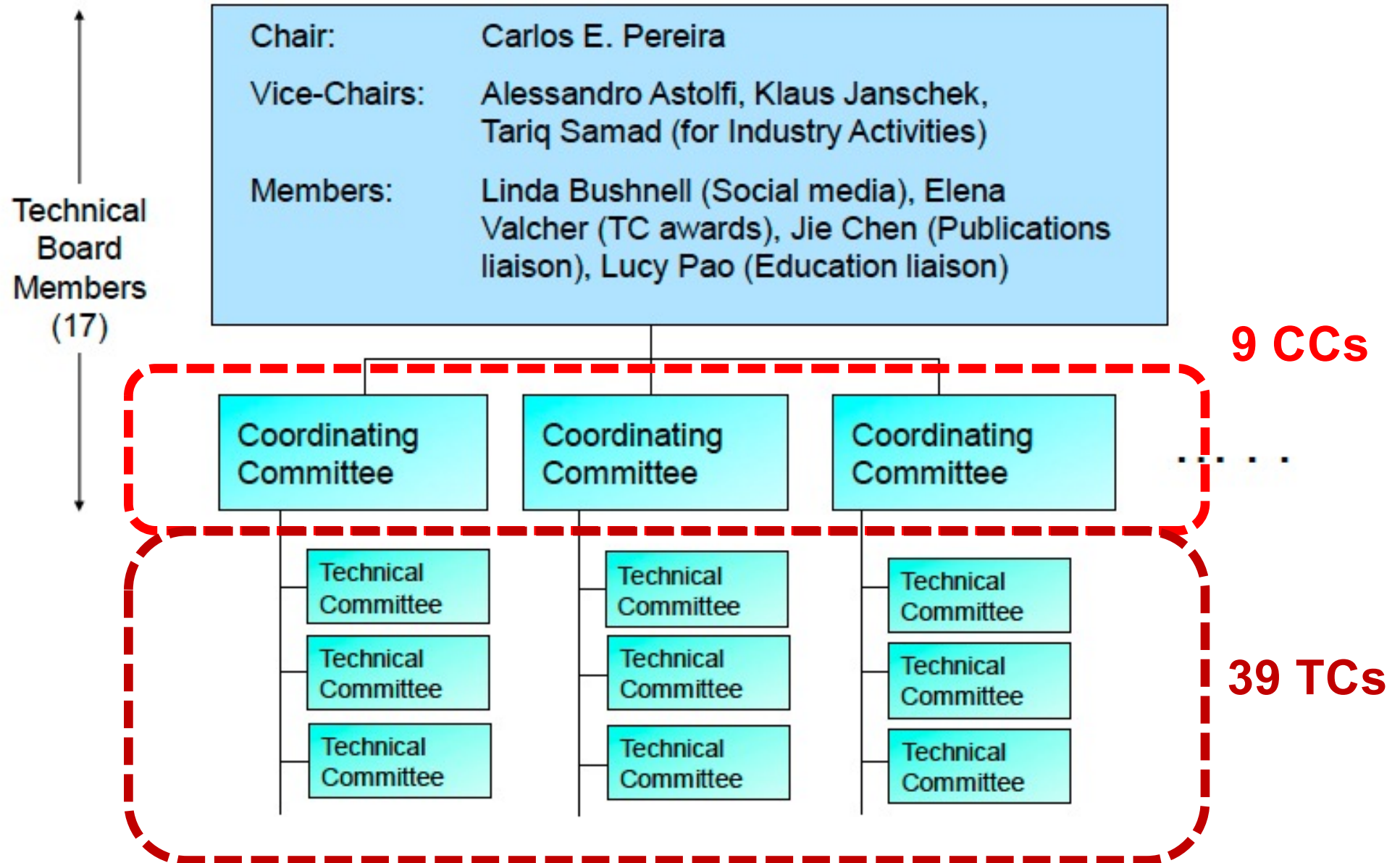


Structure of IFAC



Structure of Technical Board

(Triennium 2020-2023)



Coordinating and Technical Committees

(Triennium 2020-2023)

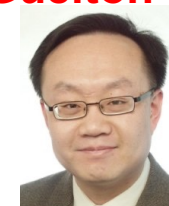
Coordinating Committees (CCs):

- | | |
|--|-----------------------------|
| 1. Systems and signals | Hideaki Ishii |
| 2. Design methods | Laura Menini |
| 3. Computers, Cognition and Communication | Thierry-Marie Guerra |
| 4. Mechatronics, Robotics and Components | Adreas Kugi |
| 5. Cyber-Physical Manufacturing Enterprises | Benoit lung |
| 6. Process and Power Systems | Jay H. Lee |
| 7. Transportation and Vehicule Systems | Lars Eriksson |
| 8. Bio and Ecological Systems | Ronald van Nooijen |
| 9. Social Systems | Lawrence Stapleton |



Technical Committees (TCs) belonging to CC 3:

- | | |
|---|----------------------|
| TC 3.1. Computer for Control | Brigitte Vogel-Heuse |
| TC 3.2. Computational Intelligence in Control | Kevin Guelton |
| TC 3.3. Telematiics: Control via Communication Networks | Lei Ma |



TC 3.2. Officers

(Triennium 2020-2023)



Chair:

Kevin Guelton

Univ. Reims Champagne-Ardenne
France

Kevin.guelton@univ-reims.fr



Vice-Chair (*Deputy Chair*):

Lucian Busoniu

TU Cluj-Napoca
Romania

llucian@busoniu.net



Vice-Chair for *Education Liaison*

Jimmy Lauber

Univ. Polytech. Hauts-de-France
France

Jimmy.lauber@uphf.fr



Vice-Chair for *Industry Liaison*

Gian Antonio Susto

Univ. of Padova
Italy

Gianantonio.susto@unipd.it



Vice-Chair for *Publication Liaison*

Juš Kocijan

Jožef Stefan Institute
Slovenia

Jus.kocijan@ijs.si



Vice-Chair

Shuzhi Sam Ge

Nat. Univ. of Singapore
Singapore

samge@nus.edu.sg



Vice-Chair

Antonio Ruano

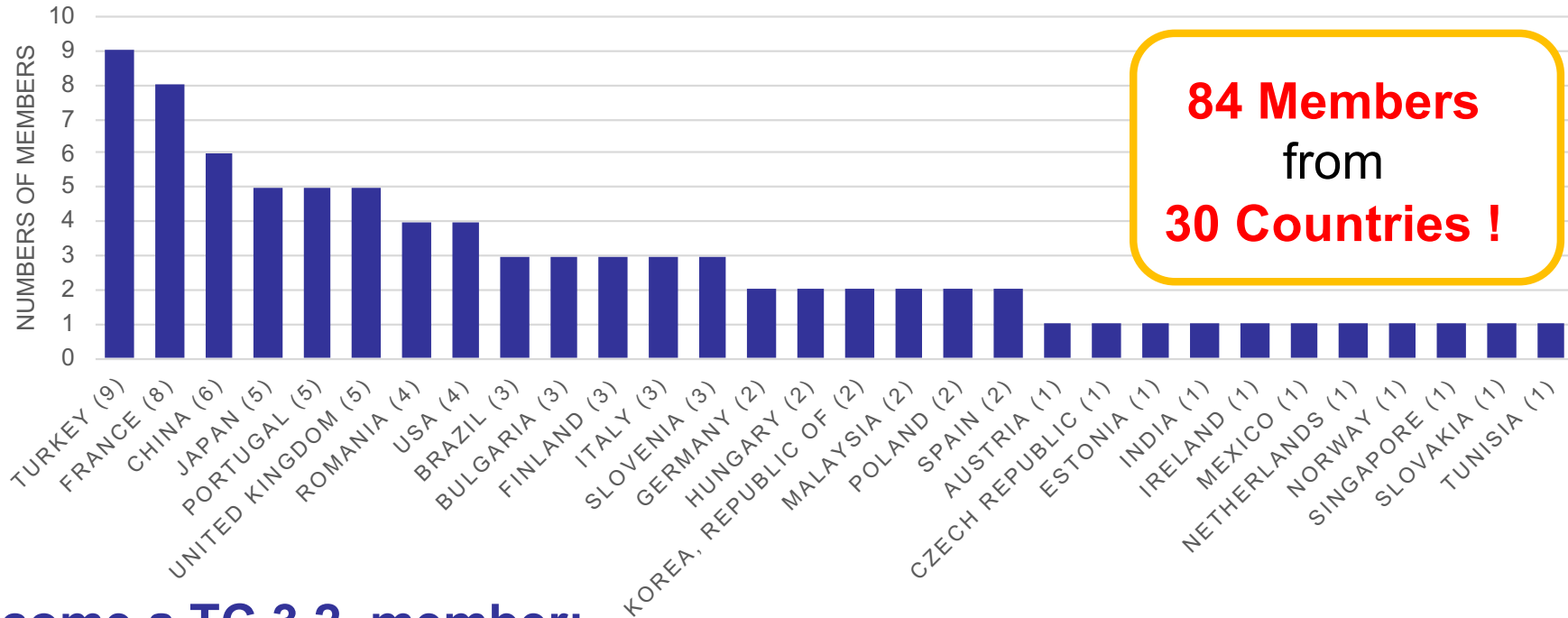
Univ. do Algarve
Portugal

aruano@ualg.pt

Open position:
Vice-Chair for *Social Media* ?

TC 3.2. Members – Countries

(Triennium 2020-2023)



84 Members
from
30 Countries !

Become a TC 3.2. member:

- Members are nominated annually (for the current triennium) —————> by their NMOs.
 |
 —————> by TC Chairs (*from individual applications*).
- Being a TC 3.2. member means being active in the TC activities.**
(Participation to TC 3.2. events, Special Sessions / Special Issues, Reviewing, IPCs...)
- TC 3.2. Members must comply with the **IFAC Code of Conduct**.
<https://www.ifac-control.org/about/ifac-code-of-conduct/view>

IFAC Publications / Links with TC 3.2. (IFAC Journals)



Strong connection
with TC 3.2.



Engineering Applications of Artificial Intelligence (EAAI)
 EiC: **Ajith Abraham** (since 2016)
 IF 2020: 6.2012



10 Associate Editors from TC 3.2.:



S. McLoone
QUB, UK



J. Kocijan
JSI, Slovenia



S. Blažič
UL, Slovenia



L. Busoniu
TUCN, Romania



K. Guelton
URCA, France



Z. Lendek
TUCN, Romania



B. Ren
TTU, USA



M. Ye
UESTC, China



G.A. Susto
UPD, Italy



R.E. Precup
PUT, Romania

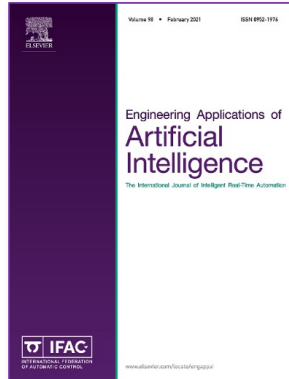
Breaking news: IF 2020 of IFAC Journals

(over 63 journals ranked in the category “Automation & Control Systems”)



Rank	Journal name	Category	Total Citations	2020 JIF	JIF Quartile
1	IEEE Transactions on Systems Man Cybernetics-Systems	AUTOMATION & CONTROL SYSTEMS - SCIE	16,901	13.451	Q1
2	IEEE Transactions on Cybernetics	AUTOMATION & CONTROL SYSTEMS - SCIE	24,753	11.448	Q1
3	IEEE CONTROL SYSTEMS MAGAZINE	AUTOMATION & CONTROL SYSTEMS - SCIE	4,501	11.119	Q1
4	IEEE Transactions on Industrial Informatics	AUTOMATION & CONTROL SYSTEMS - SCIE	27,020	10.215	Q1
5	IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS	AUTOMATION & CONTROL SYSTEMS - SCIE	74,088	8.236	Q1
6	ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE	AUTOMATION & CONTROL SYSTEMS - SCIE	10,577	6.212	Q1
7	IEEE-CAA Journal of Automatica Sinica	AUTOMATION & CONTROL SYSTEMS - SCIE	3,012	6.171	Q1
8	Nonlinear Analysis-Hybrid Systems	AUTOMATION & CONTROL SYSTEMS - SCIE	2,783	6.163	Q1
9	ANNUAL REVIEWS IN CONTROL	AUTOMATION & CONTROL SYSTEMS - SCIE	2,756	6.091	Q1
10	AUTOMATICA	AUTOMATION & CONTROL SYSTEMS - SCIE	45,412	5.944	Q1
11	IEEE TRANSACTIONS ON AUTOMATIC CONTROL	AUTOMATION & CONTROL SYSTEMS - SCIE	54,052	5.792	Q1
12	IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY	AUTOMATION & CONTROL SYSTEMS - SCIE	15,650	5.485	Q1
13	ISA TRANSACTIONS	AUTOMATION & CONTROL SYSTEMS - SCIE	10,483	5.468	Q1
14	IEEE-ASME TRANSACTIONS ON MECHATRONICS	AUTOMATION & CONTROL SYSTEMS - SCIE	13,820	5.303	Q1
15	IEEE ROBOTICS & AUTOMATION MAGAZINE	AUTOMATION & CONTROL SYSTEMS - SCIE	3,671	5.143	Q1
16	IEEE Transactions on Automation Science and Engineering	AUTOMATION & CONTROL SYSTEMS - SCIE	6,587	5.083	Q2
17	International Journal of Fuzzy Systems	AUTOMATION & CONTROL SYSTEMS - SCIE	3,236	4.673	Q2
18	JOURNAL OF THE FRANKLIN INSTITUTE-ENGINEERING AND AP	AUTOMATION & CONTROL SYSTEMS - SCIE	13,349	4.504	Q2
19	INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CON	AUTOMATION & CONTROL SYSTEMS - SCIE	10,239	4.406	Q2
20	JOURNAL OF PROCESS CONTROL	AUTOMATION & CONTROL SYSTEMS - SCIE	7,446	3.666	Q2
21	JOURNAL OF MACHINE LEARNING RESEARCH	AUTOMATION & CONTROL SYSTEMS - SCIE	36,318	3.654	Q2
22	INTERNATIONAL JOURNAL OF ADAPTIVE CONTROL AND SIGN	AUTOMATION & CONTROL SYSTEMS - SCIE	2,513	3.637	Q2
23	IET Control Theory and Applications	AUTOMATION & CONTROL SYSTEMS - SCIE	9,676	3.527	Q2
24	IEEE Transactions on Control of Network Systems	AUTOMATION & CONTROL SYSTEMS - SCIE	2,528	3.502	Q2
25	MECHATRONICS	AUTOMATION & CONTROL SYSTEMS - SCIE	4,997	3.498	Q2
26	CHEMOMETRICS AND INTELLIGENT LABORATORY SYSTEMS	AUTOMATION & CONTROL SYSTEMS - SCIE	11,735	3.491	Q2
27	CONTROL ENGINEERING PRACTICE	AUTOMATION & CONTROL SYSTEMS - SCIE	8,368	3.475	Q2
28	ASIAN JOURNAL OF CONTROL	AUTOMATION & CONTROL SYSTEMS - SCIE	4,324	3.452	Q2
29	INTERNATIONAL JOURNAL OF CONTROL AUTOMATION AND S	AUTOMATION & CONTROL SYSTEMS - SCIE	5,096	3.314	Q2
30	INTERNATIONAL JOURNAL OF ADVANCED MANUFACTURING	AUTOMATION & CONTROL SYSTEMS - SCIE	46,641	3.226	Q2

CFP: Next TC 3.2. Special Issue in EAAI



CALL FOR PAPERS

Special Issue on
on

Intelligent Control and Optimisation

organised by

IFAC Technical committee: TC3.2 Computational Intelligence and Control

Guest editors:

S. McLoone, QUB, UK, s.mcloone@qub.ac.uk
K. Guelton, URCA, FR, kevin.guelton@univ-reims.fr
T.M. Guerra, UPHF, FR, guerra@uphf.fr
G.A. Susto, UPD, IT, gianantonio.susto@unipd.it
J. Kocijan, JSI, SL, jus.kocijan@ijs.si
D. Romeres, Mitsubishi ERL, USA, romeres@merl.com

The main theme of the special issue is:

Advances in Machine Learning and AI for Intelligent Control and Optimization.

We invite novel contributions that are based on (but not limited to) the following topics as they pertain to system identification, intelligent control, and optimization of dynamical systems.

- Parsimonious and robust machine learning approaches,
- Deep learning, transfer learning and adaptation,
- Machine learning approaches for sequence learning tasks,
- Soft computing (Fuzzy logic, Neural Networks, Evolutionary Algorithms, ...),
- Reinforcement learning,
- Computer vision...

<https://www.journals.elsevier.com/engineering-applications-of-artificial-intelligence/call-for-papers/intelligent-control-and-optimisation>

Application areas include autonomous vehicles, robotic systems, human-machine collaboration, industry 4.0, smart grids, agriculture, environmental systems, biomedical systems and assisted living technologies...

Initial submission deadline: ~~31 July 2021~~ → **31 October 2021...**

You plan to propose a Special Issue
in a Scientific Journal ?



Don't hesitate to **ask for the support of the TC 3.2 !!!**
(of course, if topics are relevant)



TC 3.2 support (sponsorship or co-sponsorship) will be provided
based on the review of your proposal by the TC Officers...

Any ideas? Let's do it...

IFAC Events

(Symposia, Conferences, Workshops and Congresses)



- **WORLD CONGRESS**

- Major IFAC event, held every three years
- No other IFAC meetings take place in Congress Year (unless explicitly endorsed by the President)
- Next in line: 2020 Berlin, 2023 Yokohama

- **SYMPOSIUMS > CONFERENCES > WORKSHOPS**

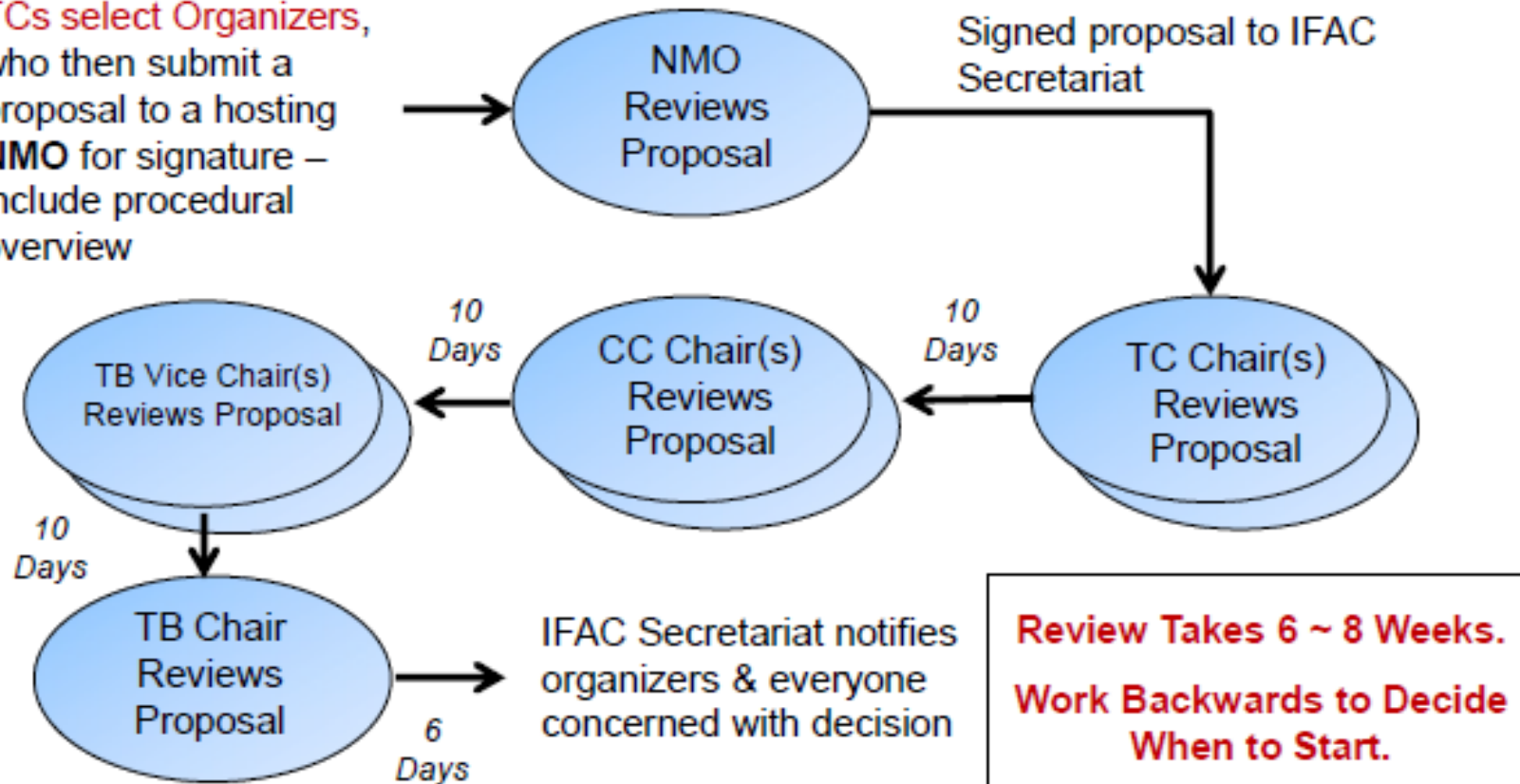
- Symposia: long term events, part of the master plan, 3-year periodic (publications in PoL)
- Conferences and Workshops: technical events, not necessarily part of a series, (publishing is optional, but if Proceedings are published, then in PoL)
- In general, no symposia, conferences and workshops are held in a Congress year.

Conference	45
Congress	1
Symposium	21
Workshop	29
Total events per triennium	96

Events per Type 2017 - 2020 triennium

On-Line Event Approval Process

TCs select Organizers, who then submit a proposal to a hosting NMO for signature – include procedural overview



Start the proposal process :

- at least **12 months** before for a small events (Workshops)
- at least **18 months** before for a larger event (Symposia, Conferences)

These are minimum lead times: *Please start as soon as possible!*

IFAC-PapersOnline (POL)


- Proceedings series hosted at Elsevier's ScienceDirect site
 - ▶ handled as a journal
 - ▶ indexed in Scopus, EI Compendex, WoS, Google Scholar
- Includes papers from IFAC-sponsored meetings since 2015
 - ▶ Previous years available as IFAC Proceedings Volumes


New features in 2020

- **Diamond Open access**
 - ▶ no cost for readers, authors, or their institutions
- **Authors keep the copyright**
 - ▶ exclusive publication & distribution license to IFAC
 - ▶ Creative-Commons license
 - Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0)
 - authors retain the rights allowed to third parties by CC license plus some additional rights to reuse the paper
- **Sharing policy**
 - ▶ authors can share preprints of articles on [arXiv.org](https://arxiv.org) and personal or institutional repositories
- **Some events may choose a two-track submission scheme**
 - ▶ some papers will not go to IFAC-PapersOnline




Main Events Sponsored by TC 3.2.





2020 — **21st IFAC World Congress**
Berlin, Germany, July 11-17, 2020 

- **4 open tracks from TC 3.2.**
- **2.8% of papers (among QQQ) from CC3**




2021 — **CESCIT 2021 : 4th IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control**
Valenciennes, France, July 5-7, 2021 

- **Main CC3 event** : Jointly sponsored by **TC 3.1.**, **TC3.2.** and **TC3.3.**
- NOC Chair: **J. Lauber** (FR) / IPC Chair **T.M. Guerra** (FR)
- *40 Accepted papers / 52 submissions (77%)*




2022 — **ICONS 2022 : 6th IFAC Conference on Intelligent Control and Automation Sciences**
Cluj-Napoca, Romania, **July 13-15, 2022**

- Main sponsor **TC3.2.**
- NOC Chair: **Z. Lendek** (RO) / IPC Chair **R. Babuska** (NL)
- **Submission deadline: Late November 2021** (tentative)
- *Website and CFP to be launched soon...*



Save the date !!!

2023 — **22nd IFAC World Congress**
Yokohama, Japan, July 9-4, 2023 

Events co-sponsored by TC 3.2



- **13th Conference on Control Applications in Marine Systems, Robotics, and Vehicles (CAMS 2021)**
Virtual (Oldenburg, Germany); September 22-24, 2021. (<https://cams-2021.com>)
- **7th Conference on Advances in Control and Optimization of Dynamical Systems (ACODS 2022)**
Silchar, Assam, India; February 22-25, 2022. (<http://acods2022.nits.ac.in>)
- **14th Workshop on Intelligent Manufacturing Systems (IMS 2022)**,
Tel-Aviv, Israel; March 28-30, 2022. (<https://ws.eventact.com/IMS2022/>)
- **6th Symposium on Telematics Applications (TA 2022)**
Nancy, France; from June 15-17, 2022;
- **10th IFAC Conference on Manufacturing Modelling, Management and Control (MIM 2022)**
Nantes, France; June 22-24, 2022. (*Waiting for IFAC approval*)
- **14th Workshop on Adaptive and Learning Control Systems (ALCOS 2022)**
Casablanca, Morocco, on June 29-July 1, 2022. (<http://www.alcos2022.org/index.html>)
- **15th Symposium on Analysis Design and Evaluation of Human Machine Systems (HMS 2022)**
Santa Clara County, United States; September 12-15, 2022. (*Waiting for IFAC approval*)
- **13th IFAC Symposium on Robot Control (SYROCO 2022)**
Matsumoto, Japan; October 17-20, 2022. (<https://syroco2021.com>)

Other action: Co4Air Project (ERASMUS+)

(2018-2021)



Project linked to Education...



Co-funded by the Erasmus+ Programme of the European Union



IFAC TC VCs for Education meeting: Co4AIR quick overview



On-line meeting
5 February 2021

Jimmy Lauber, VC for education TC 3.2
Computational intelligence in control
Head of Automation and control group
LAMIH, UPHF
Valenciennes, France
jimmy.lauber@uphf.fr



CALL FOR PAPERS

Special Issue on
on
Intelligent Control and Optimisation

organised by
IFAC Technical committee: TC3.2 Computational Intelligence and Control

Main theme of the special issue:
**Advances in Machine Learning and
AI for Intelligent Control and
Optimization.**

Deadline: 31 October !

Tank you for your attention...
and keep our next deadlines (important actions) in mind !!!

ICONS'22
Cluj-Napoca, Romania
13-15 July 2022

6th IFAC Conference on Intelligent Control and Automation Sciences

Cluj-Napoca, Romania, 13-15 **July 2022**

Deadline: Late November (Tentative) !