IFAC NEWSLETTER

INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL

Who's Who in IFAC: IFAC Technical Board Vice Chairs

No.3

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The technical work of IFAC is performed by the Technical Board and the Coordinating Committees (CCs). Each CC consists of a number of Technical Committees (TCs). The tasks of the CCs and TCs include promoting interest in emerging control subfields, assuming responsibility for technical meetings (or for series of such), providing for cooperation among specialists of their particular field, establishing contacts with other international organizations, publication of reports on selected topics, etc.

The TB Vice-Chairs for 2020-2023 are Alessandro Astolfi (UK) and Klaus Janschek (DE). In this issue of the IFAC Newsletter readers will have the opportunity to learn more about the TB VCs and the work that they do to coordinate the activities of the respective CCs and TCs that fall under their responsibility.

Alessandro Astolfi was born in Rome, Italy, in 1967. He graduated in electrical engineering from the University of Rome in 1991. In 1992 he joined ETH-Zurich where he obtained a M.Sc. in Information Theory in 1995 and the Ph.D. degree with Medal of Honour in 1995 with a thesis on discontinuous stabilization of nonholonomic systems. In 1996 he was awarded a Ph.D. from the University of Rome "La Sapienza" for his work on nonlinear robust control.

Since 1996 A. Astolfi has been with the Electrical and Electronic Engineering Department of Imperial College London, London (UK), where he is currently Professor of Nonlinear Control Theory and Head of the Control and Power Group. From 1998 to 2003 he was also an Associate Professor at the Dept. of Electronics and Information of the Politecnico of Milano. Since 2005 he has also been a Professor at Dipartimento di Ingegneria Civile e Ingegneria Informatica, University of Rome Tor Vergata. He has been a visiting lecturer in "Nonlinear Control" in several universities, including ETH-Zurich (1995-1996); Terza University of Rome (1996); Rice University, Houston (1999); Kepler University, Linz (2000); SUPELEC, Paris (2001), Northeastern University (2013), Southeast University (2019--), and the University of Cyprus (2018--).

A. Astolfi's research interests are focused on mathematical control theory and control applications, with special emphasis for the problems of discontinuous stabilization, robust and adaptive control, observer design and model reduction. He is the author of more than 160 journal papers, of 30 book chapters and of over 260 papers in refereed conference proceedings. He is the author (with D. Karagiannis and R. Ortega) of the monograph "*Nonlinear and Adaptive Control with Applications*" (Springer-Verlag).

He is the recipient of the IEEE CSS A. Ruberti Young Researcher Prize (2007); the IEEE RAS Googol Best New Application Paper Award (2009); the IEEE CSS George S. Axelby Outstanding Paper Award (2012); and the Automatica Best Paper Award (2017). He is a "Distinguished Member" of the IEEE CSS; IET Fellow, IEEE Fellow and IFAC Fellow and Member of the Academia Europaea. He was the recipient of the IFAC Outstanding Service Award (2017) and of the Institute of Measurement and Control Sir Harold Hartley Medal 2016 for outstanding contributions to the technology of measurement and control.

A. Astolfi served as Associate Editor for *Automatica*, *Systems and Control Letters*, the *IEEE Trans. on Automatic Control*, the *International Journal of Control*, the *European Journal of Control* and the *Journal of the Franklin Institute*; as Area Editor for the *Int. J. of Adaptive Control and Signal Processing*; as Senior Editor for the *IEEE Trans. on Automatic Control*; and as Editor-in-Chief for the *European Journal of Control*. He served as Chair of the IEEE CSS Conference Editorial Board (2010-2017) and in the IPC of several international conferences. He is currently Editor-in-Chief of the *IEEE Trans. on Automatic Control*.

He has been a Member of the Administrative Council of the European Control Association (2006-2011); Elected Member of the IEEE Control Systems Society Board of Governors (2011 – 2013); Chair of the IFAC Technical Committee TC 2.1: Control Design (2008-2011 and 2012–2014); Chair of the IFAC Coordinating Committee CC 2: Design Methods (2014-2017 and 2017–2020); Member of the Execu-

tive Committee of the UK Automatic Control Council, (2005-2011); Chair of the IEEE Control Systems Society A. Ruberti Young Researcher Prize Committee (2015--); and Member of the IEEE Fellow Committee (2016), (2019-2021).

CCs 1-4 (Alessandro Astolfi)

CCs 1-4 are devoted, respectively, to "Systems and Signals", "Design Methods", "Computers, Cognition and Communication", and "Mechatronics, Robotics and Components". Some of the TCs within these CCs cover classical methodological areas of systems and control, while others are focused on the relations between control and computers/communication/cognition and electro-mechanical systems (ranging from robots to human machine systems). All CCs, and their constituent TCs, are working well, although in different ways. In what follows a summary of the main activities of each CC. In addition, a few examples of good practice, that could be shared across all CCs are identified.

CC 1 - Systems and Signals; Hideaki Ishii (JP): CC 1 is traditionally focused on the theoretical foundations of systems and control. The constituent TCs are, however, very active in establishing links with other disciplines, notably Machine Learning, Communication, Networks, Computer Science, and Learning. This is accomplished within the technical event organization, for example ALCOS has a stronger emphasis on learning and NecSys is expanding its reach and attractiveness outside the traditional network systems area. The key feature of the events organized by the TCs of CC 1 is quality: events such as SYSID, ALCOS, WODES, ADHS, and NecSys are by far the best in their subject area and significantly contribute to the IFAC brand. While it is difficult to predict what will happen in 2021 and 2022 (with most events in 2021 to be held virtually due to the pandemic), the IFAC brand together with a good amount of advance planning give confidence that the events will remain the go-to forums in their specific area.

The TCs are all well-organized, with a strong group of chairs and vice-chairs in place, and run valuable outreach activities, for example through co-sponsorship of events. This CC is a strong advocate of cooperation and collaboration and IFAC should support all such activities. The TC chairs and vice-chairs are all active researchers with strong international profiles. The membership also provides confidence that just as they are now the chair and co-chair roles will be filled in the future, by high-calibre candidates.

Some of the TCs have established awards (some to reward publications, some to reward career), while others are currently planning their award offering. Overall, CC1 provides a strong contribution to the IFAC brand and to the scientific community. There is no problem that requires IFAC attention.

CC 2 – Design Methods; Laura Menini (IT): CC 2 is also a CC focused on the foundation of automatic control. While CC 1 has its roots in the analysis of systems and signals, CC 2 has its roots in (feedback) design. The constituent TCs are, however, expanding their remit and interest to areas such as data-driven methods, AI-based methods and are considering the wider impact of control to society. In addition, all of the TCs within CC 2 pay particular attention to inclusivity and outreach. There is a significant effort to increase the participation of women, of industrialists and of young researchers and this example should be followed by other CCs. The CC 2 report provides specific indicators and actions which support this effort.

The events organized and/or co-sponsored by the TCs in CC 2 have a long tradition and high-quality. Worth mentioning are NOLCOS and ROCOND, which are among the oldest and most successful IFAC Symposia, and CAO, CHAOS, CPDE, TDS, MICNON, and LHMNC, which are gaining momentum and contribute to the IFAC brand. The CCs have several planned events for 2022 and the organizing committees provide confidence that these events will be successful and professionally run.

All TCs within CC 2 are well-organized and structured. The chairs and vice-chairs are active researchers with strong international profiles and the membership, which is quite extensive for some of the TCs, gives confidence that there will be no leadership problems in the future.

The established awards are somewhat heterogeneous, and this may require some attention. Overall, CC2 operates smoothly, is well-organized and contributes significantly to the organization of high-quality, high-impact events. Some of the TCs have WGs which focus on specific topics. All TCs are aware of the wider role of control in society and are working to assert such a role. The TCs are also interested in collaborations with other CCs and IFAC should consider way to facilitate this. There is no problem that requires IFAC attention.

CC 3 – Computers, Cognition and Communication; Thierry Marie Guerra (FR): CC 3 is a "work-in-progress". The TCs which comprise CC 3 are collectively involved in European/international projects and initiatives. This is a strong sign that the TCs have the potential to increase their role in IFAC and in the scientific community.

CC 4 – Mechatronics, Robotics and Components; Andreas Kugi (AT): The TCs in CC 4 have precise focus in the three areas of mechatronics, robotics, and human-machine systems. The events are of very high quality and the TCs have put in place precise plans for the next triennium. The IFAC robotics community has a strong competitor in the IEEE RAS Society, but actions are being taken to increase visibility and impact.

Awards have been established and leading international researchers are active in the TCs and in the related IFAC journal *Mechatronics*.

Generally the CCs operate smoothly, involve key researchers in the field and the membership is strong. The development of robotics

towards flexible and soft robots and the role of human interaction help to make the activity of this CC timely and strategic.

Summary: CCs 1,2,3 and 4 contribute significantly to the IFAC brand and mission. In all CCs one could identify good practice and a desire to increase collaboration, outreach and impact. Equality and diversity are also tackled, with somewhat variable success, by all CCs.

Klaus Janschek (DE) received his Dipl.-Ing. degree in Electrical Engineering (1979) and PhD (Dr.techn.) in Control Systems Engineering (1982) from Technische Universität Graz, Austria; from 1982 to 1985 he held industry affiliations in control systems development (fatigue and vehicle test systems; aerospace guidance, navigation and control); since 1995 to today he is full professor of Automation Engineering at the Faculty of Electrical and Computer Engineering (ECE) and affiliated faculty member to the Faculty of Mechanical Engineering, Technische Universität (TU) Dresden, Germany; from 2001-2006 he served as Dean of Studies Mechatronics Engineering and 2009 to 2012 as Dean of Faculty ECE, TU Dresden.

Visiting positions (scholar/professor) comprise: Stanford University, USA, Aeronautics & Astronautics Department (2005); Universidade Tecnológica Federal do Paraná, Campus Curitiba, Brasil (2007); Universidade Federal de Santa Catarina (UFSC), Florianópolis, Brazil (2009, 2012, 2014, 2016); Guest Professorship (2012-2015) and grant holder for 111-project 2017-2021 at East China University for Science and Technology (ECUST), Shanghai, China; Zhejiang University, Hangzhou, China (2017-2021).

He was Elected Review Board Member (2008-2011, 2012-2015) for Automation, Control Systems, Robotics and Mechatronics and Head of Review Board on Systems Engineering (2012-2015) at DFG – Deutsche Forschungsgemeinschaft (German Research Foundation). At VDI – Verein Deutscher Ingenieure, Measurement and Automation Engineering Society (GMA) he was Elected Board Member, Branch Chair of Mechatronics, Robotics and Actuators (2002-2018), as well as Chairman of the Technical Committee on Mechatronics (1999-2010) and Program-Co-Chair of the VDI German Mechatronics Conferences (biannual, since 2005).

K. Janschek's service in IFAC comprises positions as: Technical Board Vice-Chair (2020-2023); Coordinating (General) Chair of 21st IFAC World Congress 2020, Berlin, Germany; Member of the Technical Board and Coordinating Committee Chair CC 4 "Mechatronics, Robotics & Components" (2014-2020); Chair of Mechatronics Paper Prize Selection Committee (2017-2020); Chair of Application Paper Prize Selection Committee (2012-2014); Vice-Chair Technical Committee 4.2 on Mechatronics (2009-2011, 2012-2014); IPC Co-Chair of 8th IFAC Symposium on Mechatronic Systems 2019, Vienna, Austria; IPC Chair of 4th IFAC Symposium on Mechatronic Systems 2006, Heidelberg, Germany. In 2019 he received the Mechatronic Systems Award from IFAC TC 4.2. His research interests focus on guidance-navigation-control, data fusion, mobile robotics, optical data processing, opto-mechatronics and model-based systems design. He is author of more than 200 publications and 3 books

CCs 5-9 (Klaus Janschek)

CCs 5– 9 are applying automation and control in a broad scope of application areas and thus they are interacting closely with markets and people. As such, the underlying TCs play an important role for IFAC for different reasons.
First, the TCs are forming a bridge for transferring new results from theory and technologies to markets and people. Second, the TCs are collecting the demands and trends from markets and people as important input for our research activities. Third, practically all TC scopes address the up-to-date societal challenges, which offers IFAC a valuable outreach door for entering a direct dialogue between our community and society, fostering our contributions for solving societal challenges. As a result, the addressed topics and activities offer also a big chance for attracting students and young researchers to IFAC community.
CCs 5 – 9 contributed with 41% to the papers of the 2020 World Congress and they hold 55% of the IFAC TC members, thus forming an important pillar of IFAC.

CC 5- Cyber-Physical Manufacturing Enterprises; Benoit Iung (FR): CC 5 is dealing with applications in production, manufacturing and distribution at enterprise level and it has undergone a strategic refurbishment with renaming and redirecting scopes as answer to ongoing trends for digitalization. The cyber-physical aspects are now present and the CC5 Chair reports that the name change has brought dynamics for investigation of new topics totally in line with the current strategic directions of manufacturing (e.g. Industry 4.0, CPS, CPPS). As such, the directions and activities of the TCs seem consistent with current and foreseen future developments in the field. The flagship event of CC 5 is the INCOM Symposium series on Information Control Problems in Manufacturing, the 2021 edition with about 350 submissions (compared to 230 submissions from CC 5 at the 2020 World Congress). CC 5 is also co-sponsoring several IFAC events and events outside IFAC on a sustainable level. Future events are well on schedule.

Outlook: The CC 5 Chair reports that the emergence of issues within CC 5 raises a point of vigilance due to non-efficient overlapping between the TCs when each TC tries to take over these emerging subjects. It will therefore be necessary to ensure at the level of the CC that a vision of complementarity prevails in each of the TCs and not a vision of "competition".

CC 6 - Process and Power Systems; Jay H. Lee (KR): CC 6 is dealing with applications in process engineering, mining and metal engineering and energy systems.

All TCs within CC 6 have active working groups: TC 6.1 is running four working groups in the areas of systems biology, energy, CO_2 management, and big data analytics; TC 6.2 is running working groups on IFAC Industrial Committee Survey and Improvement of the IFAC journals; TC 6.3 is running working groups on smart grids, power systems, power generation, and power electronics; and TC 6.4 has three active working groups on industrial application, cyberattacks detection/mitigation, and AI methods applied to FDI/FTC (with strong industrial participation).

TC 6.1 plans to set up a regular (virtual) seminar series to facilitate interactions between its members in pandemic times. TC 6.3 is working on starting a new IFAC journal "*Power and Energy Systems*".

All four TCs within CC 6 are very active and successful with organizing and sponsoring their own continuing TC events in non-IFAC World Congress years: TC 6.1 the ADCHEM and DYCOPS symposia, TC 6.2 the MMM workshop and symposium, TC 6.3 the CPES symposium and TC 6.4 the SAFEPROCESS symposium. At the 2020 IFAC World Congress CC 6 was very successful with acquiring 14.5% of all submissions (3rd rank of CCs) and TC 6.3 ranks in the top 3 TCs with about 300 submissions, thus showing a very committed and lively community. The IFAC events of CC 6 are the major events for the communities involved and belong to the top tier.

Outlook: As the fourth industrial revolution looms in the horizon the emerging common interest in all of CC 6'sTCs is devoted to digitalization, IoT and cyber-physical systems with focal points on smart production, Industry 4.0, Big Data, as well the use of machine learning approaches in process modeling, analysis, and control. Specific needs are seen for embedded artificial intelligence, augmented and virtual reality (TC 6.2), sustainable energy production with integration of renewable energy and energy storage system and management of increasing infrastructure for electric vehicles (TC 6.3) and cyber-security of cyber-physical system (TC 6.4), as safety is becoming vital to society.

CC 7 - Transportation and Vehicle Systems; Lars Eriksson (SE): CC 7 is dealing with broad scope of applications in transportation and vehicles on ground, water, air and space.

TC 7.1 has started an interesting activity as a possible role model for other TCs/CCs dealing with benchmarks for promotion of automation and control in particular to students. Control benchmarks on Automotive Control have been published in "*Special issue on benchmark problems in automotive system control.*" Tielong Shen, Lars Eriksson, and Per Tunestål (2019). In: *Control Theory and Technology*, 17(2):119—120. Notably TC 9.4 has established a working group WG9-4.3 "Benchmark

systems for control" with the focus on benchmarks for teaching and students competitions. A closer interaction of these two working groups is welcome.

All five TCs within CC 7 are active and successful with organizing and sponsoring own continuing TC events in non-congress years. Each TC has at least one TC-owned main sponsored event, with four events approved for 2021 (CTS, E-COSM, Aerospace Control Education, and CAMS), and four events in the pipeline for 2022 (AAC, IAV, ACA, and AGRICONTROL).

At the 2020 World Congress CC 7 has been rather successful with acquiring 11.1% of all submissions (4th rank of CCs) and TC 7.1 is the 11th rank with 154 submissions.

Outlook: The topic "autonomous vehicles and autonomous systems" has become a common driver for research in all CC 7 TCs. Moreover, this topic is evolving to a megatrend not only in research and development, but also in different markets with enormous economic and societal impact, in which IFAC scientific areas will play an important role for future development and innovation.

Another megatrend seen in all TC reports is sustainability in context with transportation systems in general. For example, emerging electro-mobility is demanding for sustainable management of energy resources like fuels, renewables, batteries. As another example the Marine TC 7.2 elaborates on this by identifying solutions that can meet the UN SDG17, dealing with decarbonization of maritime transportation and marine operations, ocean sampling, monitoring and cleaning, decommissioning of offshore structure, up to ocean-based energy production (wave and tidal).

Another common research topic addressed in all TCs is the application of machine learning, AI and decision making for autonomous systems.

CC 8 - Bio- and Ecological Systems; Ronald van Nooijen: CC 8 is dealing with a broad scope of applications in bio- and ecological systems.

TC 8.1 has a started a working group on diversifying and widening their membership. TC 8.2 noticed rapid growth in medical systems and less growth in biological systems, thus TC 8.2 is considering restating the scope. TC 8.3 suggests a broadening of the scope and perhaps a shift of emphasis to decision making processes linked to environmental management. CC8 chair suggests leaving more room for classical control theory applications in the field. TC 8.3 is planning special issues of IFAC journals related to control, identification and optimization of sustainable systems. TC 8.4 sees itself a bright future due to the relevance of its subject matter.

All five TCs within CC 8 are active and successful with organizing and co-/sponsoring events in non-congress years: from the CC8 report it shows two TC-owned symposia AGRICONTROL 2022 (TC 8.1), BMS 2021 (TC 8.2) and two workshops IAMWS 2022, CMWRS 2022 (TC 8.3), as well as some co-sponsored events.

Outlook: All CC 8 TCs work topics are linked closely to societal challenges addressing a collision between the constraints imposed by the natural system and desirable economic and social developments. This give valuable fuel for research questions in the field of biology, medicine, ecology, and environmental systems. The clear societal relevance should bring positive impact on growth of membership and activities of the TCs. For migration of research results into practical solutions, a better link to decision makers in industry and public sector is needed. A closer contact and coordination between CC8 and CC 9 would perhaps be helpful for building this bridge between research and decision-makers. TC 8.1 mentions a wish for more cooperation with CC 3, CC 4, and CC 7, and TC 8.3 hopes to create links with TC 3.3 through a summer school at a TC 3.3 workshop.

CC 9 - Social Effects of Control and Automation; Lawrence (Larry) Stapleton: CC 9 is dealing with societal impact of control and automation in a broad sense. From its understanding and setup of TCs it differs from all other eight CCs, as it relates technical and societal questions at different levels, keeping always in mind the scientific potentials of automation and control.

TC 9.1 would like to launch a new journal called "IFAC Journal of Cyber Physical Social Systems (IFAC-J-CPSS)" dealing with novel issues in CPSSs with both engineering complexity and social complexity. TC 9.2 is currently working on a proposal of a YouTube channel with interviews with leading researchers in Systems and Control for Societal Impact. TC 9.3 has been founded in 2015 and is still in a growth phase, the scope should be attractive for a larger community. All TCs except the recently founded TC 9.3 have active working groups on up-to-date topics: TC 9.1 (Control Decisions and Applications in Business / Finance / Economics); TC 9.2 (Perspectives of Human-Centred Systems Engineering, Cyber-Physical-Social Systems); TC 9.4 (International Curriculum Survey, Teaching during the pandemic, Benchmark systems for control, Survey of practice-Academic Collaboration); TC 9.5 (Ethics in Control Engineering, Automation in End of Life Management, Cost Oriented Automation, Diversity and Inclusion, Young Researchers in Technology and International Stability).

The TCs are very active and successful with organizing and sponsoring own continuing TC events in non-congress years: TC 9.1 and TC 9.2 with their flagship event CPHS 2020, TC 9.3 is planning a first event on smart cities for 2022; TC 9.4 with ACE 2022 and TC 9.5 with TECIS 2021. For strategic reasons CPHS 2022 and following biennial conferences are planned to be placed just before the CDC.

Outlook: All in all, the CC 9 is in good and stable shape and has updated its scope in line with new social challenges. In this sense, CC 9 offers the bridge needed for the primarily technically oriented CCs 1-8 to reach out their results to industry and public sector. This request was explicitly articulated by CC 8 and seems

Best Practices Guide for Industry Involvement in IFAC Events Released

The IFAC Industry Committee, chaired by Tariq Samad (US), arose out of a pilot committee formed in 2014, and turned into a permanent committee at the World Congress in Toulouse, France, 2017, as a result of an amendment to the IFAC Constitution. Initially split into several "workstreams", so that multiple activities can be undertaken in parallel, one of them was dedicated to identify and propose best practices for technical events and Technical Committees (TCs) to attract industry participation.

The first deliverable has been released in May and is available on the Industry Committee website (https://sites.ifac-control.org/industry).

(https://sites.ifac-control.org/industry/committee-reports-and-presentations/indcom-publications-and-reports/best-practice-guide)

This document is a best-practices guide for IFAC providing recommendations for engaging more industrial participation in IFAC events and TCs, with the goal of facilitatingto facilitate successful collaborations that benefit all participants. It has been prepared by several active members of the IFAC Industry Committee grouped together in a dedicated Task Force.

As a starting point, several surveys conducted by this Task Force on industrial involvement within IFAC TCs and on the number of industrial participants in IFAC events (conferences, symposia, and workshops) clearly highlighted the necessity to involve more industrial practitioners (and the "practical world" in general).

As the result of several Task Force brainstorming sessions, the best practice guide has been logically built around two pillars: (i) guidelines to facilitate industry participation in IFAC events (conferences, workshops, etc.); (ii) guidelines to facilitate the involvement of industry in IFAC TCs. It is also a compilation of the experiences and suggestions of the Task Force members who originate from both worlds, academia and industry, with some of them having experiences in both.

The first pillar (IFAC events) gives recommendations and advices on events organization (including support and sponsorship) as well as on conferences content and structure (e.g. on technical programs but also on specific new kinds of events that are not yet widely spread). It also recommends to sharesharing specific technical issues that can be addressed through benchmark problems, either coming from Industry or from Academia. Last but not least, this first pillar concludes by suggesting too to attract Industry by advertising IFAC in many ways (e.g. using social networks, making industry top management sensitive by giving opportunities to deliver keynote speeches, etc...) and by encouraging cross-fertilization with other communities (e.g. emerging technologies like IoT, Artificial Intelligence, etc...).

The second pillar (IFAC TCs) gathers some suggestions for enhancing Industry participation like e.g. considering compiling an inventory of successful collaborations and projects with industry involvement to highlight the possible benefits, or creating active subgroups in TCs dedicated to industrial applications. It is also advised to propose more roles (chair, vice-chair, etc.) to industrials and to promote industry contributions for nominations for existing IFAC awards, just to name a few.

This best practice guide is all along illustrated with concrete examples of recent achievements to encourage Industry participation.

As a the last recommendation, it is proposed as well to include this guide in the materials sent to the organizers of IFAC events when they are approved.

Any comments and suggestions for future versions can be sent to the task force chair, Philippe Goupil, at philippe.goupil@airbus.com

Submitted by: Philippe Goupil

To register as an IFAC affiliate or to update your information please use the IFAC affiliate registration form.
ifac-control.org/about/ifac-affiliate-registration

IFAC Blog
The Prince and I(FAC)

As we mourn the loss of HRH Prince Phillip, Duke of Edinburgh and reflect on his 73-year marriage to Queen Elizabeth, we are reminded of his commitment to thousands of causes and leadership of many societies and organizations devoted to the welfare of mankind. One of these thousands of associations was IFAC in 1966.

It was a tradition in the early days of IFAC to have a major political/royal/governmental official at the opening ceremony of each IFAC World Congress. In 1966, the 3rd IFAC World Congress was held in London, UK during the term of Professor John Coales, IFAC's fourth President. John was a Professor at Cambridge, had been actively engaged in the war effort (radar development) in the previous decade, and knew many government leaders in Great Britain during and after the Second World War. He arranged to have Prince Phillip at the opening

ceremony of the 3rd IFAC World Congress. At a later social event at that Congress, Harold Wilson, Prime Minister of the UK, was in attendance.

This practice of having major national figures in ceremonial roles at an IFAC World Congress organized by IFAC's National Member Organizations was an early tradition that did not continue over the decades. It is interesting to note that the first Deputy Prime Minister of the Soviet Union, Alexei Kosygin, was in attendance at the opening ceremony of the 1st IFAC World Congress in Moscow in 1960.

3rd IFAC World Congress, London 1966. Opening Ceremony. Second row: Verhagen, …, Cuenod, Lozier, Broida. First row: Gerecke, the Lord Mayor, Prince Philip (Duke of Edinburgh), Coales, Ruppel, Nowacki, …

Note that the 4th IFAC President hosted the 3rd IFAC World Congress. IFAC's first President was the American, Harold Chestnut, and the first Congress was hosted by IFAC's second President, Academician Alexander Letov, in Moscow. That was part of the "Iron Curtain compromise" necessary for the creation of IFAC in the late 1950s; the Americans would have the first President and the Soviet Union would host the first Congress. Chestnut served a two-year term and never hosted a Congress. All succeeding Presidents have had three-year terms. In 2023 Professor Hajime Asama, IFAC's current and 23rd President will host the 22nd Congress in Yokohama, Japan.

Steve Kahne (US), IFAC Advisor
IFAC Past President (1993-1996)

Editor's Note: The original blog entry, as well as additional blog entries, can be accessed at: http://blog.ifac-control.org/

Transitions:
Tibor Vámos
1 June 1926 – 19 May 2021

It is with great sadness that we report the passing of IFAC Advisor Tibor Vámos (HU), just two weeks short of his 95th birthday. Tibor was the 11th President of IFAC, serving in this capacity from 1981 through 1984, and he presided over the 10th IFAC World Congress in Budapest, Hungary, in 1984.

Tibor was born into a modest middle-class family in Budapest. His parents, especially his mother, laid a great emphasis on his education.

During his high-school years, they hired a tutor to teach him classical Greek and Latin, but his tutor taught him much more in the broader sense of classical culture.

At age 18, in 1944, he was drafted into a forced labor unit of the Hungarian Army. Many of his comrades perished due to hunger, sickness and harsh treatment by the guard personnel. Tibor escaped, got captured, and was held in a military prison, untill finally the Red Army arrived and set him free.

Tibor graduated from the Budapest Technical University with a Diploma in Electrical Engineering in 1949. Though his interests lied in mathematics and physics, he wanted to gain some practical experience before engaging in theoretical work. He participated in the construction of two new power stations, the second as site manager for the electrical section. He then received a fellowship to study and work on his "Candidate of Science" (Ph.D.) dissertation. His subject was the control of a large industrial furnace. He then joined the Power Systems Research Institute in Budapest, where he soon established a Department of Automation. He continued his work, inspired by his power system experience, broadening its horizon to system level problems of control and economic operation. This would lead to a second dissertation that earned him the degree "Doctor of Science" from the Academy of Sciences.

In 1959, Tibor had an opportunity to travel to the United States, to attend a conference and visit a few universities and research institutes. He was deeply impressed by the non-ceremonial atmosphere he found there, the friendly relations among people of various ages and stature. This was in sharp contrast to the rigid structures he was used to from European institutions. This experience had a fundamental effect on his own style as a leader and on the atmosphere in the organizations he later led.

Tibor considered his most important life achievement the founding and gradual building-up of "The Institute". The Institute of Automation (AKI), later Institute of Computing and Automation (SZTAKI), was established in 1964, jointly by the Academy of Sciences and the Government Committee for Technical Development. At first, Tibor was Vice-Director, with Otto Benedikt, an elder scientist of great stature, as the figure-head of the Institute. Tibor became Director when Benedikt retired a few years later. At its peak, the Institute had 800 employees. Initially, it comprised divisions for Control Theory, Continuous Processes, Manufacturing Systems and Electronic Systems. Later, with the incorporation of the Computing Center of

the Academy, Operations Research and Data Systems were added. Also, the Institute operated the central computer of the Academy, and it played an important role in the development of the computer network of the Academy and of the country. Not very long after its founding, the Institute had grown to represent significant professional expertise and became known in the profession worldwide. Equally important, Tibor established and maintained a free and democratic spirit in the Institute where everybody could express their opinion, professional or political, without restriction or fear of retribution. This was not a minor feat and made the Institute an island in the midst of a "communist" country.

In 1973, Tibor became a Corresponding Member, in 1979 Full Member of the Hungarian Academy of Sciences. Soon, he had the distinction of delivering the main lecture at the Academy's 1981 General Assembly, under the title "Technical Progress and Our Country". In the lecture he spelled out that economic and social progress was not possible without technical progress, and significant technical progress was not possible under soviet-type socialism. Then and there, these were very courageous statements - but interestingly they found support with some circles of the party and government, and became part of the political discourse.

Starting with his 1959 trip to the US, Tibor became active in IFAC, attending conferences and participating in committee activities, and eventually being elected to the Executive Council. Due to the East-West parity principle under which IFAC operated those days, the (political) East was due a congress, and Tibor's

attractive personality, plus some diplomacy, helped to bring it to Hungary. So Tibor became IFAC President (1981-84) and the 10th World Congress in 1984 took place in Budapest. The Congress was a success, earning recognition for Tibor, at home and in IFAC, and for the many people taking part in the organization. Incidentally, the Orwellian significance of the year 1984 was not lost on some participants, and certainly not on the organizers.

From the seventies on, Tibor's research interests branched out into new directions. Working with a small group of excellent people, they did various exercises in Artificial Intelligence, including pattern recognition in manufacturing, data mining, and medical applications of expert systems. Epistemology, the theory of knowledge, its representation and transfer, between humans or between human and machine, was the subject of much of his more recent work. Also of his interest has been the role of information in society, especially in the interaction between government and the individual. He had 250 plus recorded publications on these subjects, ranging from congress plenaries and peer-reviewed technical papers to journalistic pieces.

Tibor was very active in the Hungarian social and cultural life. He was president of the Janos Neumann Computer Science Society, chaired Supervisory and Advisory Boards of various social and cultural civil organizations, and was a regular supporter of theaters and other cultural causes.

Tibor Vámos was an extraordinary person, with outstanding intellect, and a great capacity to convey his ideas verbally and in writing. He had a never-ceasing curiosity for the arts, sciences

and social issues and would actively cultivate those broad subjects in personal discussions and in his writings. His classical erudition was legendary – he would cite Socrates in old-Greek or Goethe in old-German in his papers and lectures. He would describe, from memory, each piece of the renaissance painting collection of most major museums of the world. He had a great sense of diplomacy and an ability to interact with people on a personal level. Finally a personal note. I knocked on his door, with my freshly bound Diploma Work under my arm, looking for a job – and he hired me on the spot. This was 62 years ago. He had a tremendous effect on my entire professional career – in fact on my entire life. I feel extremely fortunate that I have known him, that I had him as my mentor and friend. And I can't believe he is gone.

Submitted by: Janos Gertler (HU/US), IFAC Advisor

*This writing has utilized information from the path-of-life interview Velancsics Bela, VAMOS TIBOR, MTA Eletpalya Interjuk, Hungarian Academy of Sciences, 2018.

Survey of Online Teaching Resources

Provide Your Input Today: The IFAC and IEEE Technical Committees on Control Education are seeking to curate information on freely available learning and teaching resources for the first course in Control. The aim is to provide a simple one-stop shop website where instructors can get an overview of free resources they could adopt with their own students. If you want to propose a particular resource for inclusion to the website, please fill in the survey at:

https://tinyurl.com/control-resources

Calendar of IFAC Events

Title	2021	Place	Further Information
4th IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control CESCIT 2021	July 05 – 07	Valenciennes France	http://www.uphf.fr/cescit2021
7th IFAC Conference on Analysis and Design of Hybrid Systems ADHS 2021	July 07 – 09	Brussels Belgium	https://sites.uclouvain.be/adhs21/
7th IFAC Conference on Nonlinear Model Predictive Control NMPC 2021	July 11 – 14	Bratislava Slovakia	https://www.nmpc2021.org/ martin.klauco@stuba.sk
19th IFAC Symposium on System Identification SYSID 2021	July 14 – 16	Padova Italy	https://sysid2021.org/ organizingcommittee@sysid2021.org
4th IFAC Workshop on Linear Parameter Varying Systems LPVS 2021	July 19 – 20	Milan Italy	https://www.lpvs2021.deib.polimi.it/ lpvs2021@polimi.it
6th IFAC Conference on Engine and Powertrain Control, Simulation and Modeling E-COSM 2021	August 23 – 25	Tokyo Japan	http://shenlab.jp/ecosm2021/index.html
24th International Symposium on Mathematical Theory of Networks and Systems (in cooperation with IFAC) MTNS 2020	cancelled	Papers to be published on IFAC-PapersOnLine	https://mtns2020.eng.cam.ac.uk/ erd30@eng.cam.ac.uk

Calendar of IFAC Events

Title	2021	Place	Further Information
6th IFAC Workshop on Mining, Mineral and Metal Processing MMM 2021	September 01 – 03	Nancy France	http://mmm2021.cran.univ-lorraine.fr/ mmm-2021@univ-lorraine.fr
IFAC Workshop on Aerospace Control Education 2021	September 08 – 10	Milan Italy	http://ascl.daer.polimi.it/events/ifac-workshop-on-aerospace-control-education
20th IFAC Conference on Technology, Culture and International Stability TECIS 2021	September 14 – 17	Moscow Russian Federation	http://www.tecis2021.com/
3rd IFAC Conference on Modelling, Identification and Control of Nonlinear Systems MICNON 2021	September 15 – 17	Tokyo Japan	http://micnon2021.org/
11th IFAC Symposium on Biological and Medical Systems BMS 2021	September 19 – 22	Ghent Belgium	https://bms2021.ugent.be/ bms2021@ugent.be
13th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles CAMS 2021	September 22 – 24	Oldenburg (virtually) Germany	https://cams-2021.com
6th IFAC Conference on Analysis and Control of Chaotic Systems CHAOS 2021	September 27 – 29	Catania Italy	http://chaos2021.unict.it/ chaos2021@unict.it
16th IFAC Workshop on Time Delay Systems TDS 2021	Sept./Oct. 29 – 01	Guangzhou China	https://tds2021.ee.cityu.edu.hk/ tds2021@ee.cityu.edu.hk
7th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control LHMNC 2021	October 11 – 13	Berlin Germany	https://lhmnc21.org contact@lhmnc21.org
AACC Conference on Modeling, Estimation and Control MECC 2021	October 24 – 27	Austin, TX USA	https://mecc2021.a2c2.org/
15th International Workshop on Enterprise Integration, Interoperability and Networking EI2N 2021	October 25 – 27	online Portugal	http://www.in4pl.org/EI2N.aspx in4pl.secretariat@insticc.org
NCACI, IFAC et al. Conference on Australian and New Zealand Control Conference ANZCC 2021	November 25 – 26	Gold Coast Australia	https://anzcc.org.au/ANZCC2021
1st ACA Symposium on Data-driven Control andComputer Vision ACA-SDCCV 2021	November 25 – 26	Gold Coast Australia	http://not yet available
Conference on Control Conference Africa (in cooperation with IFAC) CCA 2021	December 07 – 08	Magalies South Africa	https://cca2021.org/
Title	**2022**	**Place**	**Further Information**
Vienna International Conference on Mathematical Modelling MATHMOD 2022	February 16 – 18	Vienna Austria	https://www.mathmod.at/ mathmod@acin.tuwien.ac.at
7th ACDOS/IFAC Conference on Advances in Control and Optimization of Dynamical Systems ACODS 2022	February 22 – 25	Silchar, Assam India	http://acods2022.nits.ac.in/ bkr@ee.nits.ac.in

The IFAC Calendar of Events is constantly updated as addditional technical events (Workshops, Symposia, and Conferences) are approved. Due to the Covid-19 pandemic some events have had date changes, format changes, cancellations, etc. since their initial approval. Please check back often for the current status. The complete version of the IFAC Calendar of Events is available online at:

https://www.ifac-control.org/events/

INTERNATIONAL FEDERATION
OF AUTOMATIC CONTROL

Calendar of IFAC Events

Title	2022	Place	Further Information
14th IFAC Workshop on Intelligent Manufacturing Systems IMS 2022	March 28 – 30	Tel-Aviv Israel	https://ws.eventact.com/IMS2022/ yuvalc@afeka.ac.il
ACA, ICROS, SICE, IFAC et al. Conference on Asian Control Conference (in cooperation with IFAC) ASCC 2022	May 04 – 07	Jeju Island Republic of Korea	http://ascc2021.org/
17th IFAC Conference on Programmable Devices and Embedded Systems PDES 2022	May 17 – 19	Sarajevo Bosnia and Herzegovina	http://pdes-conference.eu/ dejan.jokic@ibu.edu.ba
2nd IFAC Workshop on Integrated Assessment Modelling for Environmental Systems IAMES 2022	June 01 – 03	Tarbes France	http://not yet available
11th IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes SAFEPROCESS 2022	June 07 – 10	Pafos Cyprus	https://safeprocess2021.eu/
Conference on American Control Conference (in cooperation with IFAC) ACC 2022	June 08 – 10	Atlanta, GA USA	https://acc2022.a2c2.org/
13th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems DYCOPS 2022	June 14 – 17	Busan Republic of Korea	http://dycops2022.org/ secretariat@dycops2022.org
11th IFAC Symposium on Control of Power and Energy Systems CPES 2022	June 21 – 23	Moscow Russian Federation	https://cpes2021.com/ cpes2021@ipu.ru
IFAC Workshop on Control for Smart Cities CSC 2022	June 27 – 30	Sozopol Bulgaria	http://not yet available
14th IFAC Workshop on Adaptive and Learning Control Systems ALCOS 2022	June/July 29 – 01	Casablanca Morocco	http://not yet available
9th IFAC Conference on Networked Systems NECSYS 2022	July 05 – 07	Zürich Switzerland	https://necsys22.control.ee.ethz.ch/
6th IFAC Conference on Intelligent Control and Automation Sciences ICONS 2022	July 13 – 15	Cluj-Napoca Romania	http://not yet available
Conference on European Control Conference (in cooperation with IFAC) ECC 2022	July 13 – 15	London United Kingdom	https://ecc22.euca-ecc.org/ ecc22admin@euca-ecc.org
18th IFAC Workshop on Control Applications of Optimization CAO 2022	July 18 – 22	Gif sur Yvette France	http://not yet available
13th IFAC Symposium on Advances in Control Education ACE 2022	July 24 – 27	Hamburg Germany	http://not yet available
5th IFAC Workshop on Advanced Maintenance Engineering, Services and Technologies AMEST 2022	July 26 – 29	Bogotá Colombia	http://not yet available

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