President's Message on the Society and IFAC

Only several weeks ago, the International Federation of Automatic Control (IFAC) celebrated its 30 years of existence at the 10th Triennial World Congress, held July 26–31, 1987, in Munich, Federal Republic of Germany. IFAC is a worldwide federation with 43 national member organizations (NMOs), each representing the control community of its country. IFAC sponsors technical meetings (workshops and symposia) and publishes the journal *Automatica*, as well as the proceedings of the technical meetings. Through its many boards and technical committees, it promotes the technical interchange and professional cooperation among engineers and scientists from the member countries.

**The Society and IFAC**

The links between the IEEE Control Systems Society and IFAC are multiple and strong, but a little complicated. IFAC does not have members; countries are members of IFAC through their respective NMOs. In turn, the NMOs nominate and approve individuals who then serve as officers and on committees. The National Member Organization for the United States is the American Automatic Control Council (AACC). The Council consists of a number of member societies with an interest in control; this number has changed over the years as some professional societies joined and others dropped out. AIAA, AICChE, ASME, IEEE, and ISA have been steadfast supporters, with the IEEE Control Systems Society (and its predecessors) representing IEEE. Therefore, all the formal interactions between IFAC and the Society occur through the AACC, where the Society is represented by a director and an alternate director, as is every other participating organization. But, unlike the others that are national organizations, IEEE is a transnational organization. A full one-third of the Control Systems Society membership resides outside North America. Consequently, many of the persons active in IFAC are also members of the Society. So, because of the dual role of the Society as a constituent member of the AACC and as a constituent society of the transnational IEEE, there has been a strong informal interaction between the Society and IFAC, although the appearance is that their respective technical activities are separate and often parallel. The reality is that there is a substantial coordination in the technical activities and the scheduling of events since both organizations serve essentially the same constituency: professionals in the theory and application of control.

**The American Automatic Control Council**

In the last few years, the AACC has become once more a very active organization. The restructuring of its conference activities led to the replacement of the Joint Automatic Control Conference (JACC) by the American Control Conference (ACC), which has become a very successful annual conference. The Control Systems Society is a major contributor to it, both in the technical program and in nominating many members to serve on the organizing and program committees. Indeed, the ACC is the venue of the constitutionally prescribed annual meeting of the Society at which election of officers takes place. The ACC, while similar in many respects to our Conference on Decision and Control (CDC), differs from it in two ways: in the active institutional participation of a number of societies, primarily through the organization of invited sessions, and in the increased emphasis on applications of control. The Council is also promoting the holding of more IFAC events in the United States and is considering their direct sponsorship, a responsibility that has been delegated in the past to one of the constituent societies or to other entities.

**An IFAC World Congress in the United States**

In 1984, the question of future IFAC World Congresses came up for formal discussion, although informally it had been under discussion for the previous several years. The suggestion was made that the United States propose to host the 13th IFAC World Congress in 1996. The Control Systems Society was the first society to support such a proposal; ASME followed suit soon thereafter. With support from these two societies, the AACC prepared a proposal that was presented by the then chairman Mike Rabins to the IFAC Council during the 1985 ACC in Boston. The proposal was approved in secret voting by the IFAC Council at its annual meeting in August 1986 in Zurich. By the time this column is published, the final step in the lengthy approval process—ratification of the IFAC Council decision by the IFAC Assembly—will have taken place. So, 21 years after the IFAC Triennial World Congress in Boston, this event will return to the United States, but to the West Coast, to San Francisco.

The Control Systems Society will provide personnel and resources for the planning of a successful meeting. Even though 1996 is a long way off, because of the three-year cycle of IFAC, some appointments will be made as early as this summer. Steve Kahne, Past President of the Society, has been elected Vice President of IFAC for this three-year period and, as tradition has it, he will serve as President-Elect for the next triennium and President of IFAC during the period that precedes the IFAC World Congress held in the United States. Steve and the AACC will need to nominate a fair number of persons to IFAC offices and to the U.S. organizing committee. In the recent past, only a limited number of persons from the United States have been active in IFAC.
While these persons have served with distinction in many responsible positions, we need to broaden the base and have more U.S. members of the Society participate and contribute to IFAC events.

As we look forward to the 1990 IFAC Congress in Tallinn, in the Soviet Union, and the 1993 one in Sydney, Australia, I hope that you will make plans to get involved and to contribute. And if you want to be involved in IFAC, then let Steve Kahne or the AACC Secretariat (c/o Bill Miller, 1051 Camino Velasquez, Green Valley, AZ 85614) know about it.

Alexander H. Levis
President
IEEE Control Systems Society

Report from the Society Dayton Chapter

As the 1986 Chairman of the IEEE Control Systems Society chapter in Dayton, Ohio, my first concern involved the interests and needs of the approximately 55 local members. Dayton, Ohio, is eastern, almost middle America, and includes a large number of engineers at Wright-Patterson Air Force Base (WPAFB), Wright State University, and The University of Dayton. The military and civilian employees of WPAFB are mainly interested in avionics problems and robustness, as well as control and stability problems associated with aircraft. At Wright State University, there is a strong interest in biomedical engineering associated with control theory as well as robotics work, reduced order modeling, and several other diverse areas. From The University of Dayton, interest exists in multivariable systems and in large-scale systems.

The first meeting was held in April 1986 as a joint meeting with the IEEE Biomedical Engineering Society and was directed toward the people at Wright State University who are interested in biomedical control. Professor G. Agarwal of the University of Illinois at Chicago spoke on "Kinematic and Myoelectric Correlates of Accurate Rapid Movements of the Human Elbow." Of the 30 members in attendance, many were control theory people who work in math modeling and others were students and faculty in biomedical engineering. Dr. Agarwal has worked extensively in biomedical areas in the last 15 years, and an exciting and controversial discussion followed his talk due to differing viewpoints held on modeling and other issues related to the physiology of muscles.

The second meeting was held in May as a joint meeting with the IEEE Aerospace and Electronic Systems Society and was directed toward people at Wright-Patterson Air Force Base. A. Schelhorn of Calspan Corporation (Buffalo) presented "In-Flight Simulators Update" at a local country club lunch. About 10 people attended this meeting, including human factors engineers and psychologists. This experience is typical in that WPAFB has the largest group of engineers, but they are not as active in meeting participation as academic groups.

Our third meeting was held in October at Wright State University, with Professor C. Sims from West Virginia University speaking on "Recent Results in Reduced Order Estimation." About 25 people attended, including many professors and students, but members from WPAFB were also attracted. An excellent question and answer session indicated wide interest in this topic.

For our fourth and last meeting, we tried the IEEE Control Systems Society Distinguished Lecturer Program by inviting Professor W. R. Perkins of The University of Illinois to give a talk in November entitled "Decentralized Control of a Flexible Structure." The IEEE Control Systems Society was very cooperative in arranging this visit. We selected Professor Perkins because of the wide interest in decentralized control and in problems related to space structures (from WPAFB, The University of Dayton, and Wright State University). Professor Perkins presented an interesting talk with an excellent question and answer session following.

For the Distinguished Lecturer Program, the IEEE Control Systems Society paid 50 percent of the total expenses (including airfare), while the local chapter paid the other half. Although our local chapter slightly exceeded our meager $400 budget for the year, the local IEEE Executive Committee reimbursed us for any deficit.

One important point in selecting a distinguished lecturer is that we were fortunate to have special (low cost) airfare rates available because Dayton is a hub for certain airlines. The low-cost airfare enabled us to present a speaker of very high caliber, subject to the constraints of a meager budget. The speaker gets no compensation other than airfare, room, and meal expenses.

An additional incentive for the speakers (Profs. Agarwal, Sims, and Perkins) was that I scheduled other meetings for them with people at WPAFB during the same day. This allowed the academic people to meet government people and contractors working on related applications. Also, they developed contacts within the government and obtained information about joint student-faculty programs available through the government for the summer. I also offered to spend the day with them and give them tours at local universities or government laboratories. This arrangement is not a great burden to either party if the trip is well organized, not too long in distance, and planned to use everyone's time wisely.

Cooperative interaction at the local universities is also valuable. For example, at Wright State University, Professor B. Sheno, the new Chairman, encouraged me to bring visitors over for a department seminar, to meet with the faculty, and to see their facilities and laboratories. The visitor now has a very busy schedule with meeting both academic and government people and obtaining information from a wide group of individuals.

We have also found that holding joint meetings with other groups has improved both the quality and quantity of the audience. Our first and second meetings of the year were joint meetings with the Biomedical Engineering Society and the Aerospace and Electronic Systems Society, respectively, and the advantages in these joint meetings were not only the obvious increase in attendance, but also the interaction between the speaker and members of the audience with diverse backgrounds. In summary, as Chairman of the Dayton Chapter of the IEEE Control Systems Society in 1986, I met many new friends and intellectually benefited from the interaction.

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