

Internationalization and Globalization

I would like to thank the members of the IEEE Control Systems Society (CSS) for giving me the opportunity to serve as its 44th president for 2010. I feel particularly flattered because I am the first CSS president affiliated to a non-Anglo-Saxon institution since the Society was created in 1954. I will do my best to continue along the path that has already been established by my distinguished predecessors. Trying to get a "good start" into my president's year, I decided to spend the fall semester of 2009 in the United States. Indeed, the present article was written in early October during my stay at the Coordinated Science Laboratory (CSL) at the University of Illinois at Urbana-Champaign (UIUC). While visiting UIUC I had the pleasure of being involved in various research activities and teaching a graduate-level course focused on design methods using randomized algorithms. I believe that CSL holds a record number of four CSS presidents: Joe Cruz (1979), Bill Perkins (1985), Tamer Başar (2000), and Mark Spong (2005).

During the course of the year, I plan to use this column to share my views about CSS and to deliver thoughts regarding activities conducted by members of the Society. Each "President's Message" needs to be written about four months before it is published in the magazine. This may explain the "editorial gap" and why the articles may not appear fully synchronized with some happenings at the frontier of activities carried on within the Society. This editorial mainly deals with the objective of *internationalization and globalization*.

The IEEE has had the goal of being international since its foundation. The definition of the IEEE appearing in *Encyclopedia Britannica* reads as follows:

International organization of engineers and scientists in electrical engineering, electronics, and allied fields, formed in 1963 by merger of the American Institute of Electrical Engineers (founded 1884) and the Institute of Radio Engineers (founded 1912).

The IEEE, the world's leading association for the advancement of technology, has more than 375,000 members located in 160 countries; 45% of its members are from outside the United States. The CSS is one of 38 Societies of the IEEE, with a total number of 8,338 members, and whose geographical distribution is shown in Figure 1. The United States, of course, is playing the lion's share with 3,553 members (43%). The total number

of represented countries is 116. Japan is ranked number one outside the United States, and several European countries appear in top positions. In fact, CSS has already formally established a successful international cooperation, with the objective of sharing scientific and organizational volunteers' skills, with two sister organizations located outside the United States, the EUCA (the European Union Control Association) and the SICE (the Society of Instrument and Control Engineers) of Japan. We have already observed the positive results of this international cooperation and, thanks to the efforts of many individuals, the first joint CDC-ECC (Conference on Decision and Control and European Control Conference) was held in Seville, Spain, in 2005, with a second conference scheduled in Orlando in 2011.

In my opinion, there is a significant difference between international and global. We have been international since the very beginning as far as

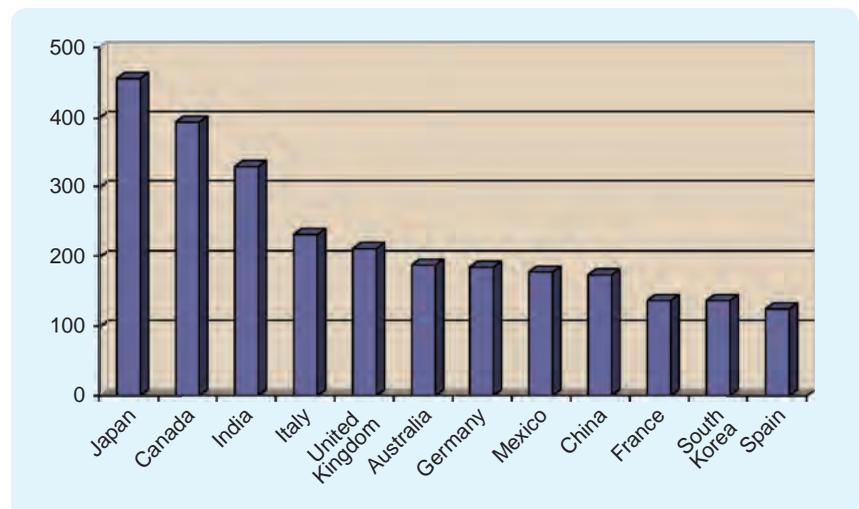


FIGURE 1 International distribution of CSS members in 2009 outside the United States for countries with at least 100 members.



Three CSS presidents in front of the Coordinated Science Laboratory at the University of Illinois at Urbana-Champaign. From left are Tamer Başar, Bill Perkins, and Roberto Tempo.

our membership is concerned. However, being global is a step forward: being able to have a broader view, to have ideas that stem from around the world, being an organization with headquarters located in the United States but deeply embedded in a control community having no geographical boundaries. Thanks to the vision of many individuals in our Society, the path toward *globalization* has been established. Globalization is a keyword that emerged at the end of the cold war. In each sector, globalization provides new challenges and opportunities as well as new threats and risks. For our Society, too, globalization needs to be managed with care, to build on our strengths, and to control threats and risks.

On the side of opportunities, this is a wonderful time for CSS to increase activities in emerging countries. I am thinking in particular of China (ranked number ten in international CSS membership) and India (number four in the ranking) where we may find new authors, reviewers, associate editors for our journals, conference organizers, and chairs of technical committees. We need to think about novel and creative ways to engage enthusiastic and capable researchers from countries having an increasing economic and technological impact on the world, with the objective of initiating a long-term involvement with the CSS. We need to motivate

students located in different continents to study the theory and applications of systems and control in a broad and modern sense.

Some significant steps in this direction have already been made. For example, the combined 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference was hosted in Shanghai by the CSS in collaboration with the Technical Committee on Control Theory (TCCT) of the Chinese Automation Association (CAA). The organization of other CSS-sponsored conferences outside the United States is also in the pipeline: in 2013, the Multi-Conference on Systems and Control will take place in Hyderabad, India, and the CDC will be held in Italy.

During 2009 we have seen significant examples regarding the globalization of the managing of the CSS. The Society officers, in addition to meetings held during the American Control Conference (ACC) and the CDC, get together for two meetings in the spring and fall. The first meeting of the 2009 Executive Committee was held in May in Venice, Italy, and the fall meeting took place in Abu Dhabi, United Arab Emirates, in early November. In 2010 the spring meeting will be held again in Italy, this time in my hometown, on the campus of Politecnico di Torino.

As far as risks and threats are concerned, I would like to briefly mention that of communication and control: in

a global organization, the flow of information has to be effective and efficient so that no case of *asymmetric information* arises. *Feedback* mechanisms and *control* then become of paramount importance to deal with such an issue. Considering the profound expertise of our CSS community on these topics, I am sure we will be capable of handling risks and threats successfully.

SOCIETY NEWS

I look forward to working with a strong executive committee consisting of Rick Middleton (president-elect), Tariq Samad (past president), Christos Cassandras (vice president for Conference Activities), Sam Ge (vice president for Technical Activities), Shinji Hara (vice president for Membership Activities), Eduardo Misawa (vice president for Publication Activities), Pradeep Misra (vice president for Financial Activities), and Mario Sznaiar (executive director).

I would like to acknowledge the outstanding job provided by the outgoing members of the executive committee: Eyad Abed and Maria Elena Valcher, who concluded their terms as vice president for Financial Activities and vice president for Conference Activities, respectively. Past-President Tariq Samad is thanked for the enthusiasm and energies he devoted to CSS and for the useful advice he provided during my president-elect year.

Finally, significant changes are taking place regarding the editors-in-chief of our two transactions. I will report on these changes in one of my future editorials devoted to our publications. I will also summarize the interesting discussions that took place within the Task Force on the "Future of *IEEE Transactions on Automatic Control*," which I had the pleasure to chair.

Your comments, suggestions, and ideas regarding activities for the Society are welcomed. I can be reached at roberto.tempo@polito.it.

Roberto Tempo

