Minutes of the Control Systems Society Board of Governors Meeting

7 May 2002, Anchorage Hilton, Anchorage, AK, U.S.A.

Call to Order and Approval of Agenda

L. Shaw called the meeting of the Control Systems Society (CSS) Board of Governors (BoG) to order at 12:56 P.M. on 7 May 2002, then asked the attendees to introduce themselves. The following members of the BoG were in attendance: S. Banda, B. Barmish, M. Bodson, L. Bushnell, C. Cassandras, R. DeCarlo, T. Djaferis, S. Hara, A. Isidori, H. Khalil, M. Krstic, F. Lamnabhi-Lagarrigue, R. Middleton, P. Misra, H. Nijmeijer, T. Parisini, B. Pasik-Duncan, C. Schrader, L. Shaw, R. Tempo, A. Varga, and B. Wittenmark. Visitors included A. Bicchi, A. Bemporad, G. Yen, J. Chow, A.N. Michel, M. Shor, Ü. Özgüner, L. Glielmo, E. Camacho, A. M. Perdon, and A. Haddad.

Modifications/additions to the agenda were noted, and the agenda was approved by unanimous consent. Next, the minutes of the BoG meeting of 3 December 2001 were approved by unanimous consent.

Introduction

Before starting the meeting, Shaw briefly discussed financial issues: the TAB meeting at the IEEE, a new IEEE copyright form, new electronic format standards for conferences, issues with corporate expenses, CSS income and expenses, the surplus, the decrease in investments, the decrease in membership, increased costs due to inflation and IEEE services, and the CSS investment in intellectual property (DVD).

Action Items

Election of Officers for 2003

Schrader presented the Nominating Committee report to the BoG in the absence of the committee chair, W.J. Rugh, who prepared the report. In addition to Rugh, the Nominating Committee members for 2002 are L. Shaw, C. Schrader, M. Gevers, and S. Yurkovich. The candidates for BoG election are Eduardo Camacho, Jay Farrell, Francoise Lamnabhi-Lagarrigue, Iven Mareels, Thomas Parisini, Anna Maria Perdon, Paul Van den Hof, Andras Varga, and one petition candidate, Wei Lin. [*Ed.* Farrell, Lamnabhi-Lagarrigue, Lin, Mareels, Perdon and Van den Hof were elected].

Next, Schrader conducted the election of CSS officers for 2003. The following candidates nominated by the Nominating Committee were approved by the BoG: President-Elect, J. Douglas Birdwell; Vice President for Conference Activities, Roberto Tempo; Vice President for Financial Activities,

David Castanon; Vice President for Member Activities, Theodore Djaferis; Vice President for Publication Activities, Alberto Isidori; and Vice President for Technical Activities, Miroslav Krstic.

Editorial Appointments for the **Transactions on Automatic Control (TAC)** *for 2003*

Isidori presented the *TAC* AE nominees, which were previously approved by the Executive Committee. The BoG unanimously approved the following seven nominees: Rene Boel, Panagiotis D. Christofides, Randy A. Freeman, Lawrence E. Holloway, Zhong-Ping Jiang, Duan Li, and Silviu-Iulian Niculescu.

Editorial Appointments for the **Transactions on Control Systems Technology (TCST)** *for 2003*

Isidori presented the *TCST* AE nominees, which were also previously approved by the Executive Committee. There was a short discussion on these candidates. Misra asked if the new AEs reflect the direction of the *TCST*. Bodson said there is no change in the direction of the journal. There are many AEs from industry, which has been the journal's tradition. Banda was pleased to see the almost 50-50 academic-industry split in the AE board. Bodson asked for the BoG to suggest future AEs. Pasik-Duncan suggested looking at former students who are now in industry. Bodson said the nominees must have more than four years' industrial experience beyond their Ph.D or be an associate professor in academia. The BoG unanimously approved the following nine nominees: Alexandre Sanfelice Bazanella, Vipin Gopal, Richard Gran, Atul Kelkar, Stefan Kowalewski, Jagannathan Sarangapani, Mikhail Skliar, Anna Stefanopoulou, and Feng Zhao.

Editorial Appointments for the **Control Systems Magazine (CSM)**

Isidori presented one nominee for AE of the *CSM:* Karleene A. Hoo. The BoG approved her unanimously.

Editorial Appointments for the CEB

Tempo presented 16 AE nominees for the CEB, which the Executive Committee had previously reviewed and approved. The BoG unanimously approved the following AEs: Carolyn Beck, YangQuan Chen, Fabrizio Dabbene, David B. Doman, Geir E. Dullerud, Magnus Egerstedt, Hiroshi Ito, Nikolaos Kazantzis, Hugh H.-T. Liu, Francesco Martinelli, Alexander V. Nazin, Dragan Nesic, Sing Kiong Nguang, George Pappas, Zigang Pan, Jeff Pieper, and Mehrdad Saif.

Neural Network Society Representatives

Shaw presented two nominees for representatives for the new IEEE Neural Network Society: Jennie Si and Jerry Mendel. The BoG approved both unanimously.

2003 Page Budgets

DeCarlo presented the motions for the 2003 page budgets for the *TAC* and *TCST*. Based on the first four months of 2002, Editor-in-Chief Christos Cassandras has seen a sudden increase in submissions and expects a backlog in 2003. Several special issues are planned for 2003. The BoG approved, with two abstentions (Khalil and Wittenmark), a page budget of 2,400 pages for the *TAC* for 2003 (an increase of 300 pages over 2002). The estimated financial impact was $30K. The BoG also unanimously approved a page budget of 1,000 pages for the *TCST* for 2003 (an increase of 40 pages over 2002). Finally, the BoG unanimously approved a page budget of 664 pages (same as 2002) for the *CSM* for 2003.

2003 Membership Dues

There was much discussion on the motion to increase the CSS membership dues for 2003. In the end, the BoG unanimously approved 2003 CSS membership dues of $20 for members and $10 for students, affiliates, and others, an increase of $2 in each category over the 2002 rates. The following are highlights of the discussion: Pasik-Duncan noted that the IEEE has the highest membership fee, then asked: What do we get back for this fee? How does the IEEE spend the money? How did the 2003 projected deficit ($182K) occur? DeCarlo said that the TAB produces about 85% of the IEEE income and constitutes about 52% of the IEEE expenses. The CSS membership fee is about average compared to the other IEEE societies. Pasik-Duncan stated that she used to be proud that the CSS was financially secure; now she is frustrated. Schrader said that attending IEEE board series meetings is helpful in understanding the long-term issues of the IEEE.

2003 Publication Rates

The BoG unanimously approved the following 2003 publication rates for the *TAC:* (1) Paper Delivery: Member, $30, Student and Other, $25, Nonmember, $715; and (2) Electronic Access Only: Member, $12, Student and Other, $8. The current rates (for paper copies and electronic access) are Member, $12, Student and Other, $6, and Nonmember, $645. The BoG also unanimously approved the 2003 publication rates for the *TCST:* (1) Paper Delivery: Member, $20, Student and Other, $16, and Nonmember, $250; and (2) Electronic Access Only: Member, $8, Student and Other, $5. The current rates are $8, $4, and $225, respectively. A lengthy discussion on these motions ensued. DeCarlo stated that the electronic access only option is the new format for delivering journals and will make up about $105K of the projected deficit. It is estimated that 65% of the members will still opt for paper copies. Shor raised the question as to whether, with the electronic delivery method, members who cancel their subscription would have anything to show for it. Varga suggested that for those who select the electronic access only option, a CD-ROM could be sent at the end of each year containing that year's publications. DeCarlo said that the DVD archives would be updated in the future with the new publications. Misra suggested that we update the DVD each year as part of the membership dues and have a $20 annual "electronic delivery" option as a sustained way of delivering information. Pasik-Duncan asked whether we had negotiated with the IEEE on this matter. Shaw said that he could not answer the question at this time. Middleton noted that we should consider the impact on countries outside the U.S.A. Shaw replied that we couldn't subsidize them for long. DeCarlo clarified that the CSS reserves went from about $5M to $1.9M over the last five years. Shaw said that we couldn't touch these reserves now, as IEEE needs them for borrowing money for its cash flow. Previously, our deficits were covered from our reserves. Now the IEEE taxes us based on the number of members, amount of reserves, editorial costs, etc. Thus, we need a larger income to cover our annual deficits. DeCarlo noted that there is no more time to manipulate the numbers for 2003. Cassandras commented that the CSS Executive Committee has put in a lot of time on this issue. Wittenmark said he appreciates their efforts and suggested that we discuss long-term plans at the next BoG meeting. Shaw closed the discussion.

Senior Membership Initiative

Djaferis proposed that each BoG member select five or more eligible members from a provided list for nomination to IEEE Senior Membership status. The goal is to do so before 1 November 2002. The BoG unanimously approved this motion. Pasik-Duncan said this was an excellent activity and that she had already nominated 35 members of the Polish CSS Chapter (all approved). It was also noted that the CSS would receive $10 for each nomination. Djaferis stressed that this should not belittle the initiative, since it was not a motivating factor.

Travel Support Program

Djaferis proposed reducing the Underdeveloped Country Travel Program budget from $40K to $25K for 2002 and 2003. The BoG unanimously approved this motion. In 2001, only $24K was spent on the program. Shaw reported that the General Chairs of conferences have had much difficulty implementing this program. Hara, who was on the selection committee, suggested advertising the program more. Özgüner noted that information on the program was hard to find on the CSS Web site. The CDC 2002 Web site includes a flashing sign advertising the program. Camacho stated that the reduction was motivated by the current financial problems. A question was raised regarding what to do in 2004? Pasik-Duncan said that many people did not apply because the grant

is not large enough to support a trip to a conference, especially for members in Eastern Europe.

ISIC 2003 Budget

The BoG unanimously approved the 2003 ISIC budget, with a projected profit of about 18%.

CDC 2003 Revised Budget

The BoG unanimously approved the 2003 revised budget. A 13% surplus is predicted. Joe Chow, Conference Finance Chair, reviewed the revised budget.

CACSD 2004 Joint Venue

The BoG unanimously approved the joint organization of the CACSD 2004 with the CCA and ISIC, to be held in Taipei, Taiwan, in September.

CACSD 2004 General Chair and Program Chair

The BoG unanimously approved Michael Sebek as General Chair and Sebastian Engell as Program Chair for the 2004 CACSD.

Activity Reports

Report of the President

Shaw reminded everyone of the deadlines for awards. Shor added that nominations for the Resnik Award are needed from CSS.

Report of the Vice President, Financial Activities

DeCarlo informed the BoG that the January 2002 budget is running at a $127K loss. It is important to sell the DVDs to cover our losses. If we sell 2,000 DVDs in 2002, we will make up for the $80K deficit projected for 2003. Ads for the DVDs are included in the conference registration packets, on the Web page, in the *Eletter,* and in the *CSM*. The income from the 2002 conferences was only $250K (down from $400K the previous year). The IEEE tax model will be changing over the next three years.

Report of the Vice President, Conference Activities

Tempo reported that there were 19 events in 2002. Djaferis thanked everyone for attending the CDC 2001, which had a $40K surplus. Tempo thanked the four conference standing committees for their work. He then invited the General Chairs of future conferences to speak. Grimble, General Chair for the CCA 2002 in Glasgow, said attendees could look forward to excellent plenary speakers, four workshops, strong social events (soccer game, jewelry museum, Edinburgh Castle), fishing, and whiskey. Özgüner, General Chair for the 2002 CDC in Las Vegas, said everything is under control. The

Program Committee will meet in June. The number of submissions is in line with previous trends. The Venetian Hotel is very posh at about $129 per night. Free beer will be provided for attendees who are sitting at a table. Hara, General Chair for the CCA 2004 in Taipei, Taiwan, announced that the CCA would be held along with the ISIC and CACSD in the luxurious Grand Hotel. This conference will have an international operating committee. Camacho, General Chair for the CDC-ECC 2005 in Seville, Spain, reported that the structure for the Program Committee has been agreed upon. The Program Chair will be Roberto Tempo. The logo has been decided on: "CDC-ECC'05." The conference committee is still deciding whether to hold the conference in a hotel or at a university. The dates will be decided on soon.

Report of the Vice President, Technical Activities

Glielmo, Chair of the Automotive Control Technical Committee, gave a summary of the Technical Activities Board meeting held that morning. Some TCs are organizing workshops, conferences, or invited sessions. For example, at the ACC 2002, there are six to seven sessions on automotive control. Pasik-Duncan, Chair of the Control Education Technical Committee, reported there would be a workshop for Las Vegas high school students at the CDC 2002 and a special teachers' session at the CDC 2003. The 2002 ACC would include two control education sessions plus a meeting for the committee. Shaw mentioned that he would sign an updated MOU for CSS-EUCA in Barcelona in July 2002.

Report of the Secretary-Administrator

Bushnell asked everyone to vote in the upcoming BoG election. The next meeting will be held on Monday, 9 December 2002, at 1:00 P.M. in Las Vegas at the CDC.

Other Business

In March 2002, Shaw asked the BoG to help uncover issues that should be addressed for the long-term growth and success of the CSS. The BoG members were asked to think of themselves as representatives of several relevant constituencies (geographical region, research/technology area, age group, gender, author, reviewer, conference attendee and paper presenter, conference organizing committee member, award committee member) and to be prepared to speak for a minute or two at the BoG meeting on how CSS can better meet the needs of one or more of those constituencies. In the middle of the meeting, these views were expressed. To start the discussion, three comments from absent BoG members were presented. Nijmeijer sent an e-mail voicing his concern about the strong discrepancy between theory and application in both the *TAC* and *TCST*. He believes this is having the undesirable effect of driving our engineering colleagues away from the *TAC* and that any effort to improve the balance would be welcome. Misra and Banda were surprised to hear this about the *TCST*. Ikeda sent an e-mail in which he

promised to encourage Japanese professors and students to apply for IEEE CSS membership. He believes there are many potential CSS members in Japan, and perhaps hundreds in Asia. He hopes each member of the BoG will recruit at least five new members and believes such activity would improve the CSS financial situation. Shaw reported that CSS membership is down. Schrader said she recruited three new members just by showing them the ad for the DVDs. Samad sent an e-mail stating that he'd like to see CSS somehow address the issue of imparting to the nontechnical public the importance of automation and control systems. He suggested developing courses targeted at undergrads in the humanities, arts, etc. He believes that overviews of how aircraft fly, how refineries refine petroleum, how power plants generate electricity—and the core concepts of feedback and dynamics—all presented at a generally nontechnical level, would attract an audience that is likely to contain more future policy and decision makers than the typical engineering class. Pasik-Duncan said she had spoken about this earlier in the Control Education Technical Committee meeting. Specifically, the attendees discussed how to attract more members to the controls field, and one attendee suggested presenting an attractive controls workshop to high school or junior high school students. Control is hidden, but is everywhere. We need to make the public aware of the broad spectrum of the controls field, from medicine to biomedicine to finance. The U.S. National Science Foundation is providing $10K to support educating teachers about the controls field (more information is provided on the Control Education Technical Committee Web site). Schrader suggested having a broader appeal by educating policy makers. The IEEE previously asked the CSS, "How would you explain control engineering to a complete novice?" Ray DeCarlo came up with the following list of favorite control engineering feats:

    (i) Making the toast pop up at just the right time.

    (ii) Making your furnace turn off and on at just the right temperatures.

    (iii) Making a cruise control keep your car at a desired speed up and down hills in rain, snow, and sleet.

    (iv) Making the left turn arrow appear at a traffic light upon sensing the presence of a car in the left turn lane.

    (v) Making elevator doors open and close, as well as making the elevator stop at the "right" floor.

    (vi) And most importantly, making a mechanism that starts a toilet flushing and then fills the tank to the right level, time and time again.

Shor said she is working on this issue in the Public Information Standing Committee and is looking for volunteers to help put information on a Web site. Lamnabhi-Lagarrigue agreed and said the CSS needs to make an effort to write a "how to" map to demonstrate controls. DeCarlo said we need to educate department deans and chairs. Wittenmark suggested developing a "control alphabet" with interesting applications and attractive photos.

Barmish introduced the next topic: the future of faculty spots. He noted that deans do not see control faculty as money-getters. Since control theory is a mature field, few faculty are being hired. Candidates must market themselves as applications oriented. He wanted to know if the CSS should do something about this. Shaw said that we need to influence the policy makers about controls, which would then influence the deans. He cited John Truxal's control classes for non-engineers at Stony Brook, NY, as an example, and suggested that we could develop such courses. Barmish said that most deans allocate faculty by student contact hours. Case Western Reserve University has an accredited controls program that justifies its existence by having a large number of student contact hours. Pasik-Duncan said the Dean of Mathematics at Kansas University recognizes the beauty of control. DeCarlo said there is not as much of a problem in ME departments as in EE departments. Özgüner asked where the exciting work was in controls. These examples are not what we are teaching in the controls classes. Our undergraduate controls curriculum has not changed in a very long time. Middleton said that controls is similar to pure math. It is abstract, yet has numerous applications—too many to fund. Banda noted that in attending government and DoD meetings, he has observed a concern about engineering in general. There is a lack of U.S. engineering students. We need to do something at the high school level, especially with women and minorities. Pasik-Duncan said that we also need to present the technology in the language of the students.

Varga presented the next topic: how to increase numerical awareness in the controls area. He read from his essay on "Numerical Awareness in Control" and pointed out, among other things, the blind confidence in "black box" tools (such as those provided in commercial control tools). He proposed several ways to increase numerical awareness in control, for example: (1) preparing a special issue of the *CSM* on numerical methods for control; (2) reprinting the best papers on control-related numerics in an IEEE Press volume; and (3) increasing students' awareness of numerical methods in control. He will post the essay on the CACSD Technical Committee Web site.

Shaw concluded the discussion and asked that other suggestions and comments be sent to him.

Adjournment

Shaw thanked the members of the Board of Governors and visitors for attending the meeting. The meeting was adjourned at 4:50 P.M.