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Flying

I am writing this column in mid-October while flying back from St. Louis after a successful and well-attended IEEE/Robotics Society of Japan (RSJ) International Conference on Intelligent Robots and Systems (IROS), which marked my last IEEE Robotics and Automation Society (RAS) meeting as president. Flying. During these two years of my presidential term, I have been traveling often, catching airplanes around the globe and trying to combine my research agenda with the Society business and, eventually, with my private life. Time has really been flying fast, and if I look at more than 14,000 e-mails in my RAS folder since January 2008—and I still have two and a half months to go—I get goose bumps. At the Executive Committee (ExCom) dinner the other night, a dear colleague had to say, “Bruno is clearly married to the Society!” Robotics and automation have developed during the last 50 years, and I will turn 50 in a few days. Flying. My academic career spans half of this period, and I have been lucky to have had the privilege to observe this growth within our Society. Serving as your president has been the apex of my engagement to robotics and automation and marriage to the RAS.



My presidential mission was sharing a common vision, combining breadth with efficiency, seeking continuous feedback, promoting a sense of camaraderie, ensuring transparency, steering the quality of our products, awarding excellence, improving our business, guaranteeing financial stability, launching new challenges, involving students, enhancing Society visibility, reaching out to other communities, and disseminating robotics and automation science. The ultimate goal was to reward our members. We have been working hard as one team to maintain the RAS as the number one Society in the field.

In the rest of this message, you will read about the activities promoted by our boards to achieve the above standard, as contributed by the respective chairs, with summaries of the accomplishments during these two years and suggestions for the future.

Conference Activities Board

Our vice president (VP) for Conference Activities, John Hollerbach, reports that, to ensure the smooth functioning of RAS's conference portfolio, a number of steps were taken during his term.

- ◆ Consolidate the functioning of the Conference Editorial Board (CEB), through the handling of the IEEE International Conference on Robotics and Automation (ICRA) 2009 and ICRA 2010, and the appointment of Antonio Bicchi as the new editor-in-chief

Digital Object Identifier 10.1109/MRA.2009.934827

The current focus of the Standards Committee is on robot middleware, which will allow the development of common platforms for sensors and systems software.

(EiC) of the CEB to replace Seth Hutchinson, who has been serving as the new EiC of our *IEEE Transactions on Robotics (T-RO)* since October 2008.

- ◆ Proliferate the use of Paperplaza for RAS (co)sponsored conferences; a partial list is ICRA, IROS, the IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), the International Symposium on Computational Intelligence in Robotics and Automation (CIRA), the IEEE/American Society for Mechanical Engineers (ASME) International Conference on Advanced Intelligent Mechatronics (AIM), the IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI), and the World Haptics Conference (WHC). Its use helps to standardize the way conference papers are handled and to quicken the time to *Xplore* posting.
- ◆ Increase the scrutiny of RAS-sponsored conferences other than ICRA. Vijay Kumar and the Steering Committee for Technical Programs (SCTP) collected statistics and proposed a spreadsheet to be filled by conference organizers to track information about their conferences. As part of this increased scrutiny, the floating Conference Activities Board (CAB) meeting was held in conjunction with the IEEE International Conference on Micro Electro Mechanical Systems (MEMS) 2009, which is a 100% RAS-sponsored conference.
- ◆ Limit the selection of future ICRAs to no more than five years in advance and have an open competition and selection of the site by the Administrative Committee (AdCom). The next competition will be for ICRA 2016, which is to be held in Europe.
- ◆ Hire a conference assistant (Janet Liddiard) to help with conference closings and other aspects of RAS conference management. The number of late conference closings has been drastically reduced, thereby minimizing the penalties imposed by the IEEE.
- ◆ Create a centralized e-mail (conferences@ieee-ras.org) so that all conference communications could be consolidated and tracked by appropriate CAB members.

Conference activities are complicated, and there is still much to do.

- ◆ Maintain a CAB database of conference documents, such as budgets, closing information, and conference statistics, to better track RAS conferences. Initial steps have already been taken toward this end.

- ◆ Create a CAB Publications chair position to centralize this position for RAS conferences to ensure prompt posting to *IEEE Xplore*.
- ◆ Centralize the conference treasurer function to relieve this burden from volunteers and to ensure prompt closing of conferences.
- ◆ Introduce a quick-start Web page for conference organizers in the required procedures and paperwork.
- ◆ Determine how to establish multiple CEBs for the RAS conferences that wish to adopt them instead of using large program committees.

Finally, John would like to thank Shigeki Sugano (associate VP of CAB), Vijay Kumar (associate VP of CAB and chair of SCTP), Antonio Bicchi (CEB EiC), Yi Guo (CAB treasurer), and Janet Liddiard (conference assistant) for their efforts on behalf of the conference activities.

Financial Activities Board

The Financial Activities Board (FAB) continues to monitor the global financial situation and its effects on the finances of the IEEE and RAS. Currently, the Society's financial situation is healthy, with costs associated with increases in Society activities largely balanced by income from Society publications and (particularly) conference activities. However, constraints on Society finances imposed at the IEEE level (in response to the significant IEEE-wide investment losses) currently limit the ability of RAS to pursue new initiatives involving significant financial investment.

As RAS VP for Financial Activities for the past two years, Ian Walker has focused on monitoring the changes in the IEEE's financial operations (and their impact on RAS) and on communication to RAS members of the financial constraints inherent in the operations of the IEEE Society. Managing the financial aspects of an active and vibrant Society such as RAS in the presence of these constraints is quite a challenge! Members wishing to learn more about the process and/or interested in participating in the RAS financial management are welcome to attend the RAS FAB meetings (held at the ICRA and IROS conferences). New volunteers are always welcome. Also, as a reminder, the RAS AdCom meetings, where the business of the Society (financial and otherwise) is conducted, are open to all members.

Industrial Activities Board

Over the last two years, the Industrial Activities Board (IAB), under the leadership of VP Alex Zelinsky, has been focused on delivering outcomes in four areas of activity for the IEEE RAS.

- ◆ *IEEE/IFR Innovation and Entrepreneurship Robotics and Automation (IERA) Forum*: IEEE RAS is working cooperatively with the International Federation of Robotics (IFR) to support activities that promote innovation of new robotics products and services. The IERA Award that is part of the joint forum has become a highly respected award in the robotics community, recognizing outstanding achievements in bringing new products and technologies to the market. A report of IERA 2009 is

More innovative ways should also be developed to encourage people to subscribe to our journals and to download and cite our papers.

published in this issue of *IEEE Robotics and Automation Magazine*, with a call for the IERA 2010 that will be hosted by IFR in conjunction with the International Symposium on Robotics (ISR) 2010 and Robotik 2010 (the 6th German Conference on Robotics), 7–9 June, in Munich, Germany.

- ◆ *Technology Road Maps:* An important public relations role for the robotics community is to inform the general public about the likely future trends of robotics and automation technology. Road maps for robot technology and products with 5–10 and 20-year timelines are being

prepared by both government and industry, with considerable work being done in Korea, Japan, and Europe. Early-stage road-mapping activity has commenced in the United States. IAB has compiled road-mapping material and resources that are published on the IEEE RAS Web site.

- ◆ *Standards:* Much of today's robotics is based on experimental demonstration platforms. To transform robotics into a full, product and service-based industry will require industry standards. There is a general expectation that robots will work and operate in public places. Unless robots meet stringent safety and environment standards, deployment in public places will not be possible. IAB has a Standards Committee, chaired by Erwin Prassler and well assisted by Raj Madhavan, which is working closely with the IEEE standards. The current focus of the Standards Committee is on robot middleware, which will allow the development of common platforms for sensors and systems software. Working groups on standards commenced their work in ICRA 2008. We hope to see good outcomes in the coming years.

- ◆ *IEEE Robotics and Automation Magazine Column:* IAB worked closely with the outgoing EiC of *IEEE Robotics and Automation Magazine* to develop a regular one-page column on industrial activities. The column reported on innovation on robotics and automation, results from the IERA forums, as well as progress in the road mapping and standards activities of IAB.

Member Activities Board

Aiming at involving more and more RAS members to achieve a more active and better Society, this two-year period has experimented a significant growth of activities, thanks to the consolidation of the Student Activities Committee within Member Activities Board (MAB). The two biggest conferences of the IEEE RAS have seen the setting of new initiatives that started with enthusiasm and large student participation, such as technical forums, ideas for a Web site and a wiki that are already running, a mentoring program, special sessions

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Managing the financial aspects of an active and vibrant Society such as RAS in the presence of these constraints is quite a challenge!

or tracks, a column in *IEEE Robotics and Automation Magazine*, as well as more ludic actions such as parties, a pub crawl, and karaoke. A series of competitions, pushed by the corresponding Ad Hoc committee, has complemented this fruitful networking environment. Besides the almost established Robot Challenge, other robotic competitions also attracted some participants, and many visitors enjoyed the originality of the robots presented. The silent spirit of the Member Services Committee is also behind all these moves and, when necessary, under the advice of the Human Rights and Ethics Committee.

The Education Committee has been another very active committee. Two summer schools and the establishment of a continuous and more participative summer school program, a column in *IEEE Robotics and Automation Magazine*, and a courseware repository constitute the most relevant results.

As the number of members and Chapters grows as it continuously does, more effort is required to make them aware of their possible involvement in RAS activities and their contribution to the improvement of the Society. The MAB has tried to facilitate this participation by adding new information into the Web, but still more actions should be taken. New Chapters have been created, and the seed for new births is being settled. The Latino-American Council has created a new scenario that periodically joins several countries in the context of robotics activities involving students and researchers. Such regional areas could be promoted in the future, as proximity facilitates fruitful synergies and stronger members' participation.

The MAB has progressed, thanks to all its standing committee chairs to which its VP, Alicia Casals, wants to extend her thanks for their continuous support during this RAS cycle. Finally, this report is not yet complete without sending best wishes to the incoming board, which is to be led by Stefano Stramigioli, an active person.

Publications Activities Board

The 2008 *Journal Citation Reports* came out in the summer. For all three RAS publications, their impact factors (IFs) are significantly higher than their previous values and, in fact, are historically high. For *T-RO*, the IF for 2008 is 2.656, indicating that for each *T-RO* paper published in 2006 and 2007 it was cited by 2008 papers published in all the journals in the ISI database 2.656 times on an average. This represents a significant increase in *T-RO*'s IF for 2007 to be 1.976. For *IEEE Transactions on Automation Science and Engineering (T-ASE)*, the IFs for 2007 and 2008 are 1.229 and 1.929, respectively. For *IEEE Robotics and Automation Magazine*, the IF for 2008 is

3.000, while that for 2007 is 0.892. Although the significance of a publication cannot be measured by a single number of IF, we are happy to see a major improvement for all our publications. In particular, *IEEE Robotics and Automation Magazine*, for the first time, leads all journals in the category of robotics. Congratulations! We want to thank all members of the editorial boards, authors, and reviewers for the jobs well done. Specially, we want to thank Alessandro De Luca, ex-EiC of *T-RO*, N. Viswanadham, EiC of *T-ASE*, and Stefano Stramigioli, EiC of *IEEE Robotics and Automation Magazine*, under whose guard these IFs were generated. We also look forward to the continuing leadership of Seth Hutchinson, who became the EiC of *T-RO* in October 2008, and Peter Corke, who will become the EiC of *IEEE Robotics and Automation Magazine* in January 2010.

Looking back, *IEEE Transactions on Haptics* was successfully launched in October 2008. It is a quarterly journal that publishes archival research results related to science, technology, and applications associated with information acquisition and object manipulation through touch. With J. Edward Colgate as the founding EiC, the journal is cosponsored by RAS (45%), the Computer Society (45%), and the Consumer Electronics Society (10%). For more details, please visit <http://www2.computer.org/portal/web/toh>. Also, the RAS Society Member Digital Library (SMDL) is now open for subscription and shall be available to our members starting January 2010. It will allow the subscribing members to have online access through *IEEE Xplore* (<http://ieeexplore.ieee.org/>) to papers from *T-RO*, *T-ASE*, all of the numerous RAS-sponsored or cosponsored conferences whose proceedings are in *IEEE Xplore*, and of course, *IEEE Robotics and Automation Magazine*. To benefit members, this electronic-only SMDL will be offered at a very reasonable rate of US\$40 (or US\$20 for a Student Member).

As for the future, we shall continue to improve the quality and impact of our publications, reduce the time from submission to publication, and maintain a service mentality. We shall continue to capture emerging and promising areas in robotics and automation by recruiting members to our editorial boards and by having special issues or special sections. Multimedia is already available for our publications, and we need to make much more better use of it. More innovative ways should also be developed to encourage people to subscribe to our journals and to download and cite our papers. We would like to hear from you. Please let our EiCs or VP for Publication Activities, Peter Luh, know.

Technical Activities Board

Ken Goldberg, VP for Technical Activities, reports that it has been a great honor to serve the RAS community in this role for the past four years under RAS Presidents Dick Volz and Bruno Siciliano. Ken would like to sincerely thank all of the RAS officers and colleagues who have served as associate VPs for Technical Activities: Frank van der Stappen, Katsu Yamane, Eugenio Guglielmelli, and Yasuhisa Hasegawa.

In January 2010, Ken will pass the baton of VP for Technical Activities to John Hollerbach and will be appointed editor of *T-ASE*. Ken will also be cohosting a National Public Radio series about robotics, which is being developed by *IEEE Spectrum* and the U.S. National Science Foundation.

During Ken's years as VP for Technical Activities, he worked to strengthen and streamline the Society's technical activities, focusing on our technical committees (TCs), Distinguished Lecturer (DL) Program, and the Graduates of the Last Decade (GOLD) events at ICRA, IROS, and the IEEE International Conference on Automation Science and Engineering (CASE).

When he took office, Ken suggested creating the associate VP positions for each RAS VP. This has been very successful in cultivating future generations of leaders. Ken also wrote a *IEEE Robotics and Automation Magazine* column, describing his view that TCs should operate as amplifiers, not capacitors, i.e., the proper role of a TC is to encourage and facilitate new research areas and dialogs rather than only reinforcing established research topics. Accordingly, he created a Technical Activities Board (TAB) Charter outlining

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the duties of TC cochairs and DLs and worked with Toshio Fukuda and associate VPs to create a triennial review process for all TCs. This has resulted in the retirement of five TCs and made room for seven new TCs to be created, in areas ranging from haptics, algorithms, and benchmarking, to energy, environment, and safety.



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Ken has also been a strong advocate for expanding the DL program to encourage DLs to initiate public lectures and expanded the DL membership from 18 to 27, with the new DLs appointed from underrepresented countries such as India, Iran, and Mexico. Ken created online databases to streamline and coordinate information about the TCs and the DL programs and led RAS efforts to redefine our field of interest statement and enhanced the GOLD programs to extend to each major RAS conference.

Details on all of these activities are at <http://goldberg.berkeley.edu/vpta/>.

Electronic Products and Service Board

Our Electronic Products and Service Board (EPSB) chair (and *IEEE Robotics and Automation Magazine* EiC) Stefano Stramigioli reports that, at the time of publication of this issue, the new award management system and meeting scheduler should have been deployed. The award management system will improve the workflow of award management by handling every operation via the Web. This was a bid desire expressed by the Awards Committee. Another issue about which many people are not aware of, if not directly involved in the management of the Society, is the allocation and planning

of rooms for administrative meetings during ICRA and IROS. This system will automatically plan resource allocation, request presence, and handle all the process automatically. This process is now costing considerable time because it is done by hand. Furthermore, the process is continuing for a standardization of conference Web pages and their quick and automatic deployment.

Many things have been implemented in the last few years: the meeting management system, the time machine to keep historical data of the Society, an improvement of the user interface, and functionality shifting to version 2.0 of the site. In the coming years, we will implement the conference templating, which will allow with one click to have a Web site of a recently accepted conference with the essential information and at the same time provide the freedom to shape it and give it a look and feel as the organizers require. Of course, many new ideas will come along the way.

I would like to conclude this message by extending a warm note of thanks from ExCom to the AdCom members, the members of the various boards and standing committees, and all the volunteers who cooperated with us in this challenging endeavor. I am passing the baton to my successor Kazuhiro Kosuge, under the Gateway Arch in Saint Louis, which symbolizes one half of our RAS logo. I trust he and his team will take our Society forward with great devotion and energy. Keep the gradient, Kazu ;-)

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*Passing the presidency to Kazuhiro Kosuge
under the Gateway Arch in Saint Louis.*



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