

# Welcoming a New RAS Publication

By Raja Chatila

Since 2004, the IEEE Robotics and Automation Society (RAS) has fully sponsored two main journals, which spun off from *IEEE Transactions on Robotics and Automation*: 1) *IEEE Transactions on Robotics (T-RO)*, which publishes fundamental articles on all aspects of robotics, featuring interdisciplinary approaches from computer science, control systems, electrical engineering, mathematics, mechanical engineering, and other fields and 2) *IEEE Transactions on Automation Science and Engineering (T-ASE)*, which publishes fundamental articles on automation, emphasizing scientific results that advance efficiency, quality, productivity, reliability, and interdisciplinary approaches from computer science, control systems, electrical engineering, mathematics,

mechanical engineering, operations research, and other fields. *IEEE Robotics and Automation Magazine* has a larger scope and is a forum for articles falling between the interest of academic journals and a

more general-public readership.

Robotics and automation is one of the fastest-growing fields both in terms of research and applications. Over ten years, RAS has more than doubled its members, now including about 12,000

people. The number of conferences sponsored by RAS and conference attendance has grown dramatically.

While existing RAS periodicals address the need for in-depth treatment of scientific and technological problems, they currently lack the response time and capacity to serve membership needs. The RAS currently has the lowest ratio of articles published in RAS periodicals per Society member (2.25% in 2013) across all IEEE Societies except for the IEEE Education Society and the IEEE Professional Communication Society. For comparison, in the same year, the average ratio among IEEE Societies was 10.34%, while the ratio of IEEE periodical articles to overall IEEE membership was 7.09%. As an order of magnitude, the number of additional articles per year in RAS periodicals that would align to these standards is 1,000 and 600, respectively.

On the other hand, RAS members are producing a large number of high-quality articles appearing in selective conferences. Most of these conferences publish six-page articles, which undergo a rigorous review process, especially since the Conference Editorial Board was established for the IEEE International Conference on Robotics and Automation (ICRA) in 2006. For example, submissions to the two largest conferences on robotics and automation, ICRA and the IEEE/Robotics Society of Japan International Conference on Intelligent Robots and Systems (IROS), are around 4,000 per year, and accep-



tance rates are around 40% or below. Incidentally, it is important to note that although the accepted articles appear on *IEEE Xplore*, they are not considered to be archival by

common standards. The traditional evolutionary publication paradigm has the disadvantage of summing up review times for conferences to those for transactions, which hampers the timeliness and reduces the number of conference articles transformed into periodical articles: *T-RO* and *T-ASE* together published 283 articles in 2013.

There is, therefore, a pressing need for an agile archival publication of articles on recent advances in all aspects of robotics and automation to be made readily available to the community with a rigorous review process but a short publication time.

RAS leadership, with the unanimous support of the RAS Administrative Committee, has proposed a new periodical to address these issues: *IEEE Robotics and Automation Letters (RA-L)*. The IEEE *RA-L* new journal survey was prepared by the IEEE Corporate Strategic Research Office and administered in August 2014. An analysis of the answers shows strong support for the new publication.

The proposal for *RA-L* was prepared with Antonio Bicchi, vice president for publications, and presented to the IEEE Periodicals Committee in November 2014 (Phase 1) and February 2015 (Phase 2) (Figure 1).

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**Figure 3.** Alliance team members strategize during the Peachtree Regional competition. (Photo courtesy of Georgia FIRST.)

sportsmanship as *coopertition*. At FIRST, coopertition is displaying unqualified kindness and respect in the face of fierce competition. There is simply no smack-

**FIRST refers to this ideal of ultimate sportsmanship as *coopertition*.**

talk but no sticky-sweet platitudes either. Knowledge, competition, and empathy are comfortably blended, even as veteran teams take on the

role of mentor for rookie teams, which later become competition.

“We always look forward to meeting up with team 5109 (rookie Deus Machina) because we’ve been mentoring them over the past year, and I’m really pumped to see what they can bring to the competition,” said senior Michael

team to develop and follow an effective business plan where funds are raised to pay for the costs of the regional and global competitions; an outreach program to ensure the teams are visible in the communities that support them; an ongoing recruiting program to attract students to science and technology; and an overall focus on the quality of the programs, robots, and pits. Nonengineering mentors are business professionals who help guide students in this aspect of the competition, which often engages students who would otherwise have limited interest in robotics. In fact, of the many awards given at the FIRST FRC events, many are not focused on the competition but rather on the team attributes and overall quality of each team’s overall business plan.

Cao of the Techno Titans in John’s Creek, Georgia. “We want to do well, obviously, but we’ve really done our best if 5109 shows up,” added Cao, explaining the fulfillment of seeing the team that he has mentored become successful in its own right (Figure 3).

Equally important in the competition is the ability of a

**GeorgiaFIRSTRobotics**  
www.gafirst.org

**Figure 4.** The Georgia FIRST Robotics logo. (Logo courtesy of Georgia FIRST.)

In Georgia, the Peachtree Regional, held in Atlanta 26–28 March 2015, is currently entering its 12th year of competition with over 60 teams competing for a spot in the 2015 FIRST Championships. Activity in the Peachtree area has grown to the point where an additional regional competition is now being held to ensure that all teams in the Georgia region have the opportunity to compete and gain a spot in the 2015 FIRST Championship at the Edward Jones Dome, 22–25 April 2015, in St. Louis, Missouri. The second regional, the Georgia Southern Classic, was held in Perry, Georgia, from 27 February to 1 March 2015. If you are interested in becoming a FIRST mentor for your local team or would like to volunteer at a Georgia FIRST, regional event or become a sponsor, please visit [www.gafirst.org](http://www.gafirst.org) or contact Connie Haynes, director of Georgia FIRST, at [chaynes@gafirst.org](mailto:chaynes@gafirst.org) or Joel Edwards, Kimberly-Clark Corporation, the lead judge for the FIRST Robotics Peachtree Regional at [jedwards@kcc.com](mailto:jedwards@kcc.com) (Figure 4).

For information on FIRST events outside of Georgia, please visit [www.usfirst.org](http://www.usfirst.org)

## PRESIDENT’S MESSAGE (continued from p. 6)

RA-L will be an electronic publication and will have

- a complete time of eight weeks, on average, from submission to the publication decision
- a limit on article length (six pages), favoring concise reports, a format to which our community is accustomed
- the possibility of a closely integrated peer-review process with ICRA (and possibly other major conferences later) in which the first-stage review by the Letters Board serves as the conference decisions, and a second revision and re-review guarantees



**Figure 1.** From left: Raja Chatila and Antonio Bichi, VP Publications Activities.

the highest archival quality to published letters

- a high capacity of articles per year, on the order of one third of our current ICRA proceedings.

In the vision of the RAS, RA-L will be a venue where innovative ideas in our field will be rapidly published, teaming up with ICRA and other major conferences to promote the quality of the best contributions presented there to reach the highest standards of IEEE periodicals, without compromising the timeliness of publication. The first issue of RA-L will be published in January 2016.