



**INCOSE Region V**  
**Huntsville Regional Chapter**  
**Newsletter JANUARY 2006**



*The International Council on Systems Engineering is a not-for-profit membership organization founded in 1990. INCOSE is an international authoritative body promoting the application of an interdisciplinary approach and means to enable the realization of successful systems.*

**CHAPTER MEETINGS (Usually on 3<sup>rd</sup> Thursdays @ 5:30 pm at Green Hills Grille on Wynn Drive)**

**THIS MONTH Jan 19, 2006**

Aaron Mosher, an embedded software engineer with the Boeing Company, spoke on **"Systems Integration and Testing: Developing an Autonomous Unmanned Ground Vehicle."**



Aaron described the grueling 132-mile "Grand Challenge" course in the Mohave Desert which all entrant autonomous vehicles had to complete under a 10-hour limit, starting on Saturday, October 8, 2005 at 6:30 a.m. The Defense Advanced Research Projects Agency (DARPA), which has been authorized by Congress to fund technology competitions, gave a \$2 million prize to the first team to cross the finish line. The rules stipulated that each vehicle had to complete the course totally autonomously, with no human touching or intervening with their vehicle. Of 43 initial applicants, 23 vehicles actually entered the race, and only five vehicles managed to complete the course, four of them under the 10 hour limit. Each team's vehicle departed the starting line at intervals of 5 minutes.

The Stanford Racing Team with its "Stanley" autonomous vehicle took the prize with a winning time of 6 hours, 53 minutes. The winning team was composed largely of faculty and students from Stanford's School of Engineering.

Next came Carnegie Mellon University's "Red Team" and "Red Team Too" vehicles in 2<sup>nd</sup> and 3<sup>rd</sup> with times of 7 hours, 4 minutes and 7 hours, 14 minutes, respectively. These teams also included an alliance of individuals, non-profits, and for-profits. Members included students, volunteers, and professionals embedded from corporate sponsors: The Boeing Company, SAIC, Caterpillar, Intel, AM General, TTTech, Applanix, HD Systems, Duke University, KVH, Snap On, Chip Ganassi Racing, Google, and others.

The Gray Team, sponsored by the Gray Insurance Company, finished the Grand Challenge course in 4<sup>th</sup> place in 7 hours, 30 minutes. The Gray Team's experience in aeronautics, robotics, mechanical engineering, and computer science led to innovative solutions in their vehicle design.

The Oshkosh Truck's Team TerraMax finished 5<sup>th</sup> in 12 hours, 57 minutes. This team included representatives from Oshkosh Truck Corporation, Rockwell Collins, Rockwell Scientific, University of Parma, and Auburn University. They were sponsored by ArvinMeritor, Inc., Fastenal Company, Oxford Technical Solutions, Parker Hannifin, Inc., Ricoh Corp., Caterpillar, Inc., Landstar System, Inc., MMCL Industries, Inc., Michelin Group, and others. More details about the DARPA 2005 Grand Challenge competition are at the website, <http://www.darpa.mil/grandchallenge05/gcorg/index.html>.

Mr. Mosher said that the competition dramatically accelerated autonomous ground vehicle technologies by demonstrating conclusively that autonomous ground vehicles can travel long distances across difficult terrain at militarily relevant rates of speed.

DARPA Director Dr. Tony Tether said that, "When the Wright Brothers flew their little plane, they proved it could be done," Tether continued. "And just as aviation 'took off' after those achievements, so will the very exciting and promising robotics technologies displayed here today." The finishing vehicles are among 23 finalists that set out on the desert course this morning at 6:30 a.m. PDT.

"We established the Grand Challenge program to help foster the development of autonomous vehicle technology that will some day help save the lives of Americans who are protecting our country on the battlefield," said DARPA Grand Challenge Program Manager Ron Kurjanowicz. "The outcome of this great public event demonstrates that we have succeeded in our mission." See

More information about the 2006 DARPA Grand Challenge final event is available at the event website, [www.grandchallenge.org](http://www.grandchallenge.org).

About the speaker

For the past two years Aaron has worked on the DARPA Grand Challenge autonomous vehicle competition, with the Carnegie Mellon University Red Team and with Duke University. His Boeing work with the Red Team included adapting radar sensors for autonomous ground vehicle perception, and the U.S. Patent Office has notified him of a pending patent award for his innovations using radar for unmanned vehicle control. Aaron previously worked as a computer programmer at a start-up company, developing Internet-based computer games for NASCAR and the Indy Racing League. He graduated from UAH in 2003 with a B.S. in Computer Engineering.

## MEMBER NEWS

### UPCOMING CHAPTER MEETINGS

#### February 16

Thomas Satterly of Robust Decisions, Inc. (RDI) will speak on "Decision Support Management Tools for Making Complex Team Decisions," Mr. Satterly is the Director of Business Development at RDI.

## COMPANY NEWS

### NATIONAL NEWS

#### Important Dates

28 January -	<a href="#">2006 INCOSE International Workshop</a> in
01 February	Scottsdale, Arizona, USA
31 January	2005 chapter financial reports (covering May 01 - December 31) due to <a href="#">Central Office</a>
18 February	Submission deadline for April 2006 issue of <a href="#">INSIGHT</a>
28 February	Nominations deadline for <a href="#">Pioneer</a> and <a href="#">Founders</a> awards
15 April	Application deadline for <a href="#">INCOSE / Stevens Doctoral Award for Promising Research in Systems Engineering and Integration</a>

#### Finalize Your Plans for the 2006 International Workshop.

INCOSE's [International Workshop](#), 28 January through 1 February, is a yearly event during which systems engineers can contribute to the state of the practice. The workshop is open to all INCOSE members with systems engineers at all levels and backgrounds encouraged to engage in working sessions and contribute their knowledge and experience to take our discipline forward. Attendees are encouraged to review the [preliminary schedule](#) of board, committee, and working group meetings to map out their personal schedule. If you haven't yet registered for the workshop or made your hotel reservations, please contact the INCOSE [Conference Manager](#) for assistance.

#### Final Call for 2006 Pioneer and Founders Award

**Nominations.** Help INCOSE recognize individuals and teams who have made significant contributions. The Pioneer Award is presented annually to one distinguished individual or team (whether from within INCOSE or from the community at large) who, by their achievements in the engineering of systems, has contributed uniquely to major products or outcomes enhancing society or meeting its needs. The criteria may apply to a single outstanding outcome or a lifetime of significant achievements in effecting successful systems. The Founders Award is presented annually to one distinguished INCOSE member who has made a major contribution to INCOSE. The award recognizes outstanding individual contribution to INCOSE, either a single event or ongoing efforts. These significant contributions have positively affected the advancement of INCOSE or an INCOSE Chapter.

Nominations for the Pioneer and Founders Awards must be received by 28 February 2006. More information on these awards can be found at

[www.incose.org/about/hall/criteria.aspx](http://www.incose.org/about/hall/criteria.aspx).

**INCOSE in Latin America and the Caribbean.** Dick Kitterman, Region V Member Board representative, is hosting a planning session at the International Workshop to discuss

opportunities for INCOSE in Latin America and the Caribbean. There are a significant number of aerospace and commercial industries practicing systems engineering and this will enable us to reach out to them. Dick has developed a white paper as the foundation for this effort, and the Member Board hopes to use this as an example for other Member Board representatives to support similar efforts in their regions. Interested in helping to foster INCOSE's growth in Latin America and the Caribbean? Please contact [Dick Kitterman](#) for more information.

**Quick Hits for Chapters.** The Member Board has initiated a new Quick Hits newsletter comprised of highlights to help share the latest news and resources with chapter leadership. Some Quick Hits may be reminders of previous communications or requests for information. Other items are short overviews of new items of interest. The Quick Hits are being sent to the Chapters e-mail reflector with an archive maintained in the Chapters area of [INCOSE Connect](#). These notes are not expected to be on a regular schedule, but will be sent as needed. Chapter leaders interested in receiving Quick Hits are encouraged to contact [Mike Eagan](#).

**Stay in Touch with INCOSE.** Have you moved or changed jobs and forgotten to update your information with INCOSE? Every quarter, some members miss out on the latest INCOSE publications because their mailing information is out of date. Check the member directory in the [Members Area](#) to ensure your information is correct. Please remember to notify the [Central Office](#) of any changes so that you don't miss out on any of the benefits of membership.

**Systems Events Around the World in 2006.** Mark your calendar and take advantage of these opportunities to share and learn with experts from around the world.

- *2006 Conference on Systems Engineering Research (CSER), 7-8 April, Los Angeles, California, USA.* The University of Southern California in collaboration with Stevens Institute of Technology presents the 4th Annual Conference on Systems Engineering Research. The primary conference objective is to provide practitioners and researchers in academia, industry, and government a common platform to present, discuss and influence Systems Engineering research with the intent to enhance Systems Engineering practice and education. [www.incose-la.org/cser2006/](http://www.incose-la.org/cser2006/)
- *PMI Project Risk Symposium 2006, 22-25 May, Houston, Texas, USA.* The Project Management Institute Risk SIG's Annual Project Risk Symposium provides a unique forum on comprehensive risk and project management techniques and analysis. Attendees will learn about updates on key methodologies, techniques, and emerging trends in managing risk in projects and enterprises across all industry sectors. Keynote speakers and a range of industry-specific experts will provide case studies and lessons learned through implementing risk management to improve project outcomes in terms of scope, time, cost, and ROI. INCOSE members save 15% on standard registration fees by mentioning priority code XM1812INCOSE when registering. [www.iirusa.com/project\\_risk](http://www.iirusa.com/project_risk)
- *Twelfth Annual Working Conference on Requirements Engineering: Foundation for Software Quality (REFSQ'06), 5-6 June, Luxembourg.* REFSQ is a highly interactive forum for researchers and practitioners to address the

problem of ensuring software quality through requirements engineering. REFSQ highlights innovative work in requirements engineering that contribute to the achievement of higher software quality. Contributions from related areas such as formal methods, systems engineering, economics and management and social sciences are especially welcome. [www.refsq.org](http://www.refsq.org)

- *2006 INCOSE International Symposium, 9-13 July, Orlando, Florida, USA.* The premier systems engineering event of 2006, the 2006 INCOSE International Symposium will focus on the extreme challenges that systems engineers face in bringing products and services to market at top speed. Expect fascinating systems engineering topics in the areas of architecture, integration, verification, validation, modeling, simulation, specialty engineering, management, education, engineering process improvement, mission identification and assurance, complex systems of systems, extensively networked systems, systems and software engineering convergence, use of open-source software and hardware, architecting through simulation and modeling, and data exchange standardization. [www.incose.org/symp2006/](http://www.incose.org/symp2006/)
- *1st. Symposium on Information Systems Research and Systems Approach, 9 August, Baden-Baden, Germany.* Held as part of the InterSymp-2006 18th International Conference on Systems Research, Informatics and Cybernetics, this symposium will collect, discuss and disseminate scientific knowledge and professionals' experience using the Systems Approach, which helps the organizations to cope with the raising technical, behavioral and managerial complexity of their environment. Due to the inherent complexity of current Information Systems, papers with an interdisciplinary scope will be of special interest (drawing from Systems Engineering, Complex Sciences, Software Engineering, Computer Sciences, Management Sciences and/or Operations Research). [www.iias.edu](http://www.iias.edu)
- *RE'06 - 14th IEEE International Requirements Engineering Conference, 11-15 September, Minneapolis, Minnesota, USA.* Sponsored by the IEEE Computer Society in cooperation with INCOSE and others, the IEEE International Requirements Engineering conference is the premier requirements engineering conference, providing a forum for researchers, practitioners, educators, and students to present and discuss the most recent innovations, trends, experiences, and concerns in the field of requirements engineering. [www.re06.org](http://www.re06.org)

- *European Systems Engineering Conference 2006, 18-20 September, Edinburgh, Scotland.* The 5th biennial European Systems Engineering Conference focuses on the effectiveness of interdisciplinary and multi-cultural collaboration. Systems engineering has proved its ability to add value to enterprises seeking to cope with increasingly complex and dynamic environments and in particular: the integration of diverse technologies and disciplines to create breakthrough products and dependable systems; and, more effective collaboration in international multi-cultural enterprises and projects. This conference will explore how these objectives can be achieved, and what are the pitfalls to be avoided. [www.incose.org/eusec2006/](http://www.incose.org/eusec2006/)
- *2006 Joint PMI/INCOSE Region II Conference, 25 September, Berkeley Marina, California, USA.* INCOSE's Region II chapters and the the Project Management Institute San Francisco Bay Area Chapter will join forces to host a one day conference "AVOID THE BIG RISK: Align Conceptual Design, Systems Engineering and Project Management with Strategy". It is the first time that conceptual design, systems engineering and project management experts will be brought together for the express purpose of presenting essential interactions among the disciplines within the context of systems thinking. For more information, see [www.pmi-sfbac.org/displaycommon.cfm?an=1&subarticlenbr=15](http://www.pmi-sfbac.org/displaycommon.cfm?an=1&subarticlenbr=15)

#### CONTACT INFORMATION

Find us on the web at [www.incose.org/huntsville](http://www.incose.org/huntsville). Please contact Walter Hammond at [whammond@comcast.net](mailto:whammond@comcast.net), 256-426-4242 with any Newsletter inputs at any time, and questions or comments about this newsletter.

For questions or comments regarding the INCOSE Huntsville Regional Chapter (HRC), please contact Rick Leonard at [Rick.Leonard@amrdec.army.mil](mailto:Rick.Leonard@amrdec.army.mil), 256-876-4714.

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*Your INCOSE HRC officers need your inputs to make this newsletter better speak to your needs. We solicit YOU, the INCOSE membership, for items of interest from your company, local conferences, published tech papers or books, news regarding job transfers, new jobs, etc.*

#### Your Local Chapter Contact Points (detailed bios at <http://www.incose.org/huntsville>)

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