



# TF-AAS newsletter

## Issue 4: Apr./May 2006

The *TF-AAS newsletter* is produced as a focal point for news concerning the (related) activities of the IEEE Computer Society Autonomous and Autonomic Systems Task Force. If you have any items for the next issue please contact [r.sterritt@ulster.ac.uk](mailto:r.sterritt@ulster.ac.uk)

## EASe 2006 @ Columbia, USA

First Announcement and Call for Papers  
Systems and Software Week 2006 



The second of the dual meetings of the 3<sup>rd</sup> IEEE International Workshop on the Engineering of Autonomic and Autonomous Systems (EASe) took place as a part of the 2<sup>nd</sup> SASW (System and Software Week) which incorporated the 30<sup>th</sup> NASA/IEEE Software Engineering Workshop (SEW-30) in Columbia, USA in April.

This meeting marked the inaugural sponsorship of an event by our IEEE Computer Society Task Force (TFAAS). Also, this year the workshop has corporate sponsorship from IBM.



Columbia, Maryland, USA

Dave Atkinson, program manager of the NASA JPL Exploration Systems Engineering Office gave the keynote, raising autonomic and autonomous software system challenges for the Constellation Program. (available in the letter's section below).

EASe website is at <http://www.ulster.ac.uk/ease>

Proceedings available on IEEE website at <http://doi.ieeeecomputersociety.org/10.1109/EASE.2006.18> (doi:10.1109/EASE.2006.18).

Other Connected links:

<http://sel.gsfc.nasa.gov/>

<http://www.systemsandsoftwareweek.org/>

## LETTERS

### Constellation Program Return to the Moon: Software Systems Challenges – Autonomy and Autonomicity a Solution?

by Dave Atkinson



*Abstract: This letter introduces NASA's Constellation Program, which is developing new space systems for renewed human exploration of the moon, and eventually, Mars. A selection of challenges for software systems will be introduced that arise from the special circumstances of Constellation Systems. These challenges illustrate a variety of the types of problems that must be addressed related to software quality, automation, autonomy and autonomicity. The challenges are further compounded since Constellation missions represent a mixing of the human space-flight processes with those of NASA's robotic exploration missions. These factors and others give rise to many unique and/or significantly more complex engineering than has been previously faced in the development of space systems. In this context, software reliability and safety become critical qualities for what will arguably be the most complex software systems artifact ever created.*

Read the full article at: <http://tab.computer.org/aas/newsletter/2006-3/2006-3-tf-aas-letters.pdf>

## TF Chair's Column

Welcome to the April-May 2006 issue of our TF newsletter.

The TF-AAS will be 1 year old in June, and I will be reporting back on progress to the IEEE TAB. As it happens, the TAB meetings clash with our prestigious ICAC conference, and I was so excited that ICAC was coming to my home, Ireland! So it is with deep regret that I cannot make ICAC'06 - I hope you all have a great time and enjoy the Guinness and the craic!

It's a pleasure to take the opportunity on your behalf to thank Simon, Fabrice and their team for doing such an excellent job organizing ICAC'06. Mazin and Omer have efficiently produced an outstanding program for us and are due our gratitude and thanks for their hard work. Hopefully see you all in Florida in 2007 (if not before!).

In this issue we continue with our *letters section* on the theme of expanded AAS keynote presentations. Dave Atkinson continues the excellent start with a paper based on topics he explored in his keynote talk at EASe-2006 in Columbia.

Roy Sterritt, Chair TF-AAS  
[r.sterritt@ulster.ac.uk](mailto:r.sterritt@ulster.ac.uk)

*J* Autonomic Properties ::  
SELF-LEARNING

off the mark by Mark Parisi



(Cartoon copyrighted by Mark Parisi, printed with permission.)



# TF-AAS newsletter

IEEE  
computer  
society  
60<sup>th</sup> anniversary

## TACS 2006



The IEEE International Workshop on Trusted and Autonomic Computing Systems (TACS-06) took place in April (19th) at the Vienna University of Technology, Vienna, Austria. This workshop brings to the community a focus on Trusted systems through self-management and the need for the synergistic research efforts ranging from computer science and engineering, to the natural sciences to the social sciences. The workshop had presenters from Canada, China, Germany, Italy, Switzerland, UK and USA.

TACS'06 website is at  
<http://cs.okstate.edu/~xiaolin/tacs06/>

## ICSE SEAMS 2006



In May (21st-22nd), in Shanghai, China at the prestigious IEEE International Conference on Software Engineering (ICSE), the workshop on Software Engineering for Adaptive and Self-Managing Systems (SEAMS) took place. Specifically, participants from academia, industrial organizations, and government agencies presented projects and discussed many open issues relating to the software engineering of systems that have the ability to self-manage by adapting itself at run time to handle such things as changing user needs, system intrusions or faults, a changing operational environment, and resource variability. Such a system must configure and reconfigure itself, augment its functionality, continually optimize itself, protect itself, and recover itself, while keeping its complexity hidden from the user. The workshop brought together the different communities of software engineering to discuss the state of research and practice when dealing with self-adaptive,

self-managing systems, self-healing, self-optimizing, self-configuring, and autonomic software. The workshop included sessions on formal methods and assurance, model-driven development, architecture, and domain-specific aspects of self-adaptive systems. Each session included a topical presentation that overviewed the state of the art in that particular area in the context of self-adaptive systems, followed by brief paper presentations and discussions. There was a keynote by John Strassner from Motorola Research Labs, and two invited talks about: the NASA ANTS Project, and the EU IST MADAM Project.

SEAMS'06 website is at  
<http://www.cse.msu.edu/SEAMS/>

## Calendar of Community Activity

This section briefly lists some of the additional activity within the community (both within IEEE and beyond) over the forthcoming months.

### June 2006

⊗ June 15<sup>th</sup>: Special Issue Journal on "Autonomic and Trusted Computing Systems and Applications" (JoATC)  
<http://cs.okstate.edu/~xiaolin/joatc/CFP06.htm>

⊗ June 12-16: 3<sup>rd</sup> IEEE Int. Conf. Autonomic Computing, Dublin, Ireland.  
<http://www.autonomic-conference.org>

⊗ June 12-16: 2<sup>nd</sup> Self-Man 2006 @ ICAC'06  
<http://research.ihost.com/selfman2006/>

⊗ June 12-16: 2<sup>nd</sup> Int. WS Smart Grid Technologies (SGT06), @ ICAC'06.  
<http://www.iw.uni-karlsruhe.de/sgt06/>

⊗ other ICAC'06 workshops:  
[www.caip.rutgers.edu/icac2006/wrk\\_tut.htm](http://www.caip.rutgers.edu/icac2006/wrk_tut.htm)

⊗ June 15: ICC 2006 Workshop on Autonomic Communications at ICC'06 in Istanbul, Turkey  
<http://www.icc2006.org/index/conference-program-w.html>

⊗ June 26: ACC 2006, 2nd IEEE WoWMoM Workshop on Autonomic Communications and Computing, Niagara-Falls, Buffalo-NY.  
<http://www.autonomic-communication.org/acc/>

### July 2006

⊗ July 17-21: 2<sup>nd</sup> IEEE Int. Conf. Space Mission Challenges for Information Technology (SMC-IT 2006), Pasadena, California, USA.  
<http://smc-it.jpl.nasa.gov/>

⊗ July 17-21: A&A-SES-2 – Mini workshop Autonomic & Autonomous Space Exploration Systems as part of 2<sup>nd</sup> Int. Conf. Space Mission Challenges For Information Technology (SMC-IT 2006), Pasadena, California, USA.

<http://www.infi.ulst.ac.uk/~autonomic/AA-SES/>  
<http://smc-it.jpl.nasa.gov/>

⊗ July 18-19: LAACS 2006: First Latin American Autonomic Computing Symposium, Dom Bosco Catholic University in Campo Grande, MS, Brazil  
<http://www.fee.unicamp.br/laacs2006>

⊗ July 19-21: Int. Conf. Autonomic and Autonomous Systems (ICAS), Silicon Valley, USA.  
<http://www.iaia.org/conferences/ICSA06.html>

## September 2006

Sept 3-6: 3rd Int. Conf. Autonomic and Trusted Computing (ATC'06), Wuhan and Three Gorges, China  
<http://grid.hust.edu.cn/atc06/>

⊗ Sept 4-8, 4th Int. DEXA WS Self-Adaptive and Autonomic Computing Systems (SAACS06), Krakow, Poland.  
<http://cms1.gre.ac.uk/conferences/saacs06/>

⊗ Sept 18-21, Int. Conf. Self-Organization and Autonomic Systems in Computing & Communications (SOAS'2006) Erfurt, Germany.  
<http://www.soas2006.org/>

⊗ Sept 18-21, ATAC 2006: First International Workshop on Agent Technology and Autonomic Computing, Erfurt, Germany.  
<http://www.netobjectdays.org>

⊗ Sept 25-29, Autonomic Networking 2006 incorp: SMARTNET - INTELLCOMM - IWAN - WAC, Paris – France.  
[www.autonomic-net.org](http://www.autonomic-net.org)

⊗ Sept 29<sup>th</sup> - Oct 1<sup>st</sup> 2006: IEEE Dependable Autonomic and Secure Computing (DASC'06), Indianapolis, USA  
<http://www.cs.iupui.edu/DASC06/>

## December 2006

Dec 20-23, (cfp 15<sup>th</sup> July) 14<sup>th</sup> Int. Conf. on Advanced Computing & Communications (ADCOM 2006). Surathkal, Mangalore, India  
The theme for ADCOM 2006 is Autonomic Computing  
<http://www.adcom2006.nitk.ac.in>

## Join IEEE TF AAS

If you have not already done so, you are invited to join the IEEE Computer Society Autonomic and Autonomous Systems Task Force online.

Details can be found at the web site  
<http://www.computer.org/tab/>

Where you can sign-up to TF-AAS and three others free

<http://www.computer.org/TCsignup/index.htm>

If you have already signed up, manage your Technical Activity through TECA:

<http://www.computer.org/services/teca>