



# TF-AAS newsletter



## Issue 2: Dec. 2005/Jan. 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)

### SAACS 2005

by **Torsten Eymann**



The workshop on "Self-Adaptive and Autonomic Computing Systems" (SAACS), which is held in conjunction with the DEXA conference each year, has in

2005 again attracted a close group of ca. 30 followers. As was the case with its predecessors in Prague and Zaragoza, the SAACS workshop in Copenhagen has shown familiar atmosphere and a lively discussion between academics and industrial researchers.

The topic of the SAACS workshop, as the name suggests, is not only Autonomic Computing. "Like Eskimos having 50 words or more for snow, the computing and technologies communities have a similar number of terms for self-managing computing systems. You say Pro-active! I say Dynamic! And so on and on. Lets call the whole thing SAACS!" is a quote by the organizers in their self-description. What is behind AC is of interest, not only the current (and maybe passing) term itself.

This is because AC not only hoping to solve the many problems that Industry is experiencing with unreliable or increasingly more complex environments but it brings a unique challenge to Computer Scientists and Engineers to add the concept of the system's 'self'. Further it draws on a diverse community from biological systems science to operating systems engineering, and has produced solutions that have evolved from earlier work,



SAACS'05 Social: Moh Ibrahim & Manish Parashar

reworking of older computing science and genuinely revolutionary ideas.

To this end the workshop mixes industrialists and academics and not only provides an arena for the presentation of innovative work, but panel sessions and opportunities to debate and brainstorm in a uniquely meaningful yet informal setting.

Looking forward, the 2006 issue of the SAACS workshop will be held again over two days alongside DEXA, which runs from September 4-8, 2006. Submissions are open until March 15, 2006, and the proceedings will be published in an IEEE DEXA workshop proceedings volume. The colourful webpages of the workshop can be found at: <http://cms1.gre.ac.uk/conferences/saacs06/>

### SOAS 2005

by **Huaglorry Tianfield**

The 2005 International Conference on Self-Organization and Adaptation of Multi-agent and Grid Systems (SOAS 2005) was held at the University of Paisley, Glasgow, Scotland, United Kingdom between 11 - 13 December 2005.

Multi-agent systems comprising of a collection of fully or semi-autonomous entities/components, whose global behaviors come from emergent interactions among these entities/components. Such multi-agent systems have been studied widely, not only in computer science, software engineering and artificial intelligence, but even more widely in economics, management science, sociology, systems science, etc. In fact, multi-agent systems permeate social, economic, and technical domains.

While Grid computing is the new generation of distributed and networked information and computing systems which have the capacity to enable users and applications in an emergent manner to transcend the organizational boundaries and to gain access to the local computing resources administrated by different organizations. A Grid computing system is by nature a large-scale, complex, and open multi-agent system. Grid computing integrates distributed computing resource management, semantic web technology, service oriented architecture and service management, distributed workflow management, monitoring and control of distributed problem solving, etc.

While self-organization and adaptation have been studied intensively in control theory, systems theory, adaptive complex systems, robotics, etc., they are relatively new concepts for computing systems. In recent years it has widely been recognized that large-scale complex computing systems are increasingly demanding self-organization and adaptation, as advocated by the autonomic/adaptive computing initiatives in, e.g., IBM, HP, etc. [cont. page 2].

### TF Chair's Column

Belated Happy New Year! And what a busy year we have ahead; this year will mark the first conferences and workshops sponsored and co-sponsored by the TFAAS. There are also many wider community events taking place internationally [see *Calendar of Community Activity* within the newsletter, or watch the TF website:

[http://www.infj.ulst.ac.uk/~autonomic/IEEE\\_TF-AAS/index.html](http://www.infj.ulst.ac.uk/~autonomic/IEEE_TF-AAS/index.html)

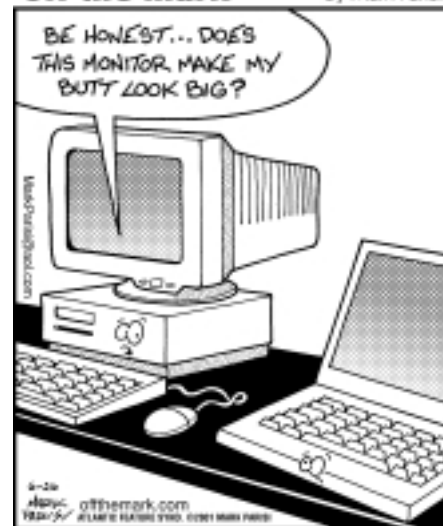
Speaking of activities, in terms of a subscription-based email posting service for relevant cfp etc, initially we avoided the temptation to go down that route for our community TF self-\* related conferences, since the calls are already cross-posted so widely on the other forums (SEWorld, DBWorld, ACF etc.). Yet in the 6 months since our formal beginning there have been many queries on this matter. Our view would appear to be an academic's view of the world since we tend to subscribe to all these lists. Yet our industrial colleagues appear to be less over-subscribed and would appreciate a specialised timely activities email. As such we plan to start emailing specific calls for papers closely related to the TF to our members. At this stage this will not be a full posting service, we will attempt to minimize the traffic and combine calls in a single email posted to the TF members, initially on a weekly or so basis. We will monitor if this approach best meets our community's needs, and adapt if necessary – as always comments welcome. If you have any specific autonomic, autonomous and self-managing systems related calls for papers or announcements please email them to me for inclusion in the TF news email.

**Roy Sterritt, Chair TF-AAS**

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**SELF-AWARE**

**off the mark** by Mark Parisi



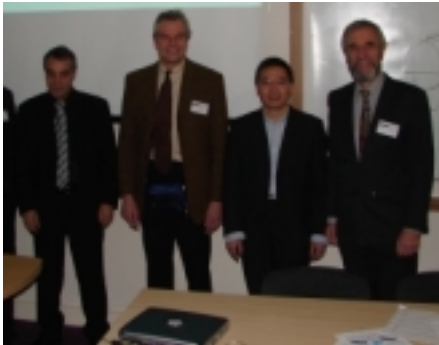
(Cartoon copyrighted by Mark Parisi, printed with permission.)



# TF-AAS newsletter



SOAS'05 [cont. from page 1]



SOAS'05 Organizers: Prof Cherif Branki, Prof. Rainer Unland, Prof. Huaglory Tianfield & Professor Hans Czap

The challenge here is that computing systems basically are artificial systems, which prevents conventional principles and approaches for self-organization and adaptation, which are mainly aimed at physical laws governed systems, from being applied to computing systems. To tackle the complexities of physical laws governed systems such as openness, uncertainty, discrete event randomness, etc., there have been established frameworks of principles and approaches for understanding and engineering self-organization and adaptation. However, for artificial systems such as large-scale complex computing systems, the understanding of the openness, uncertainty, discrete event dynamics, etc. is still very limited and the framework for self-organization and adaptation has yet to be established.

To respond to these challenges, SOAS was established to provide a focal forum to exchange and disseminate the state-of-art developments from different disciplines. The SOAS'05 Conference aimed to provide a timely forum to present the latest theoretical and practical results on self-organization and adaptation that have been arising in recent years especially in the areas of Multi-Agent Systems, Grid Computing and Autonomic/Adaptive Computing, and also served as an opportunity to focus on the challenges and to shape the future.

The SOAS'05 Conference was attended by about 60 delegates from near 20 countries around the world. The Conference accepted 19 regular, 20 short and 8 Work-in-Progress papers from its near 60 submissions. The Conference had four very distinguished keynote presentations from Dr Omer F. Rana on "Agent-based Computational Grids: Research Issues and Challenges", Prof Philippe De Wilde on "Micro-economic multi-agent systems that trade populations", Prof Franco Zambonelli on "Engineering Self-Organization and Emergence: Issues and Directions" and Roy Sterritt on "Autonomous and Autonomic Systems: Paradigms for Future Space Exploration". Selected papers of the SOAS'05 Conference have been published by IOS Press as "Self-Organization

and Autonomic Informatics (I)", Edited by H. Czap, R. Unland, C. Branki and H. Tianfield, Volume 135 in the series of Frontiers in Artificial Intelligence and Applications, December 2005, approx. 396 pp., ISBN: 1-58603-577-0.

SOAS'06 will be in Erfurt, Germany, 18 - 21 September 2006. For details see <http://www.soas2006.org/>

## 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.

### March 2006

▫ Mar 27-30, 3<sup>rd</sup> IEEE EASe (Engineering of Autonomic Systems); Potsdam, Germany (co-located with IEEE 13th ECBS) <http://www.ulster.ac.uk/ease>

### April 2006

▫ Apr 18-20: IEEE WS on Trusted and Autonomic Computing Systems (TACS); Vienna, Austria <http://cs.okstate.edu/~xiaolin/tacs06/>

▫ Apr 24-28: 3<sup>rd</sup> IEEE EASe (Engineering of Autonomic Systems); Columbia, MD, USA (co-located with NASA/IEEE SEW 30) <http://www.ulster.ac.uk/ease>

### May 2006

▫ May 4-5: 3rd Int. WS Managing Ubiquitous Communications and Services (MUCS'06), Cork, Ireland <http://www.aws.cit.ie/mucs2006/>

▫ May 21-22: ICSE 2006 WS Software Engineering for Adaptive and Self-Managing Systems, Shanghai, China <http://www.cse.msu.edu/SEAMS/>

### June 2006

📖 June 1<sup>st</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: (cfp 14<sup>th</sup> Feb) 2<sup>nd</sup> Self-Man 2006 @ ICAC'06 <http://research.ihost.com/selfman2006/>

▫ June 12-16: (cfp 17<sup>th</sup> Mar) 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)

## July 2006

▫ 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 19-21: (cfp 5 Mar'06) Int. Conf. Autonomic and Autonomous Systems (ICAS), Silicon Valley, USA. Incorporating: SYSAT 2006: Advances in system automation; AUTSY 2006: Theory and practice of autonomous systems; AWARE 2006: Design and deployment of context-awareness networks, services and applications; AUTONOMIC 2006: Autonomic computing: design and management of self-behavioural networks and services; MCMAC 2006: Monitoring, control, and management of autonomous self-aware and context-aware systems; CASES 2006: Automation in specialized mobile environments; ALCOC 2006: Algorithms and theory for control and computation; MODEL 2006: Modeling, virtualization, any-on-demand, MDA, SOA <http://www.iaria.org/conferences/ICSA06.html>

## September 2006

Sept 3-6: (cfp 10 Mar '06), 3rd Int. Conf. Autonomic and Trusted Computing (ATC'06), Wuhan and Three Gorges, China <http://grid.hust.edu.cn/atc06/>

▫ Sept 4-8, (cfp 15 Mar '06) 4th Int. DEXA WS Self-Adaptive and Autonomic Computing Systems (SAACS06), Krakow, Poland. <http://cms1.gre.ac.uk/conferences/saacs06/>

▫ Sept 18-21, (cfp 30 Apr'06) Int. Conf. Self-Organization and Autonomic Systems in Computing & Communications (SOAS'2006) Erfurt, Germany. <http://www.soas2006.org/>

▫ Sept 29<sup>th</sup> -Oct 1<sup>st</sup> 2006 (cfp 15 Apr'06): IEEE Dependable Autonomic and Secure Computing (DASC'06), Indianapolis, USA <http://www.cs.iupui.edu/DASC06/>

## Join IEEE TF AAS

If you have not already done so, you are invited to join the IEEE Computer Society Autonomous and Autonomic 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>