

International Conference on Self-Organization and Autonomic Systems in Computing and Communications (SOAS'2006)
Erfurt, Germany, 18 - 21 September 2006

www.SOAS2006.org

Theme: Tackle IT complexity through self-organization and self-management/regulation.

Today's IT systems with its ever-growing communication infrastructures and computing applications are becoming more and more large in scale, which results in exponential complexity in their engineering, operation, and maintenance. Conventional paradigms for run-time deployment, management, maintenance, and evolution are particularly challenged in tackling these immense complexities. Recently, it has widely been recognized that self-organization and self-management/regulation offer the most promising approach to addressing such challenges. Consequently, a number of autonomic/adaptive computing initiatives have been launched by major IT companies, like IBM, HP, and others.

Self-organization and adaptation are concepts stemming from the nature and have been adopted in systems theory. They are considered to be the essential ingredients of any living organism and, as such, are studied intensively in biology, sociology, and organizational theory. They have also penetrated into control theory, cybernetics and the study of adaptive complex systems. The original idea was to understand complex systems behaviour by understanding the systems' self-organization and adaptation mechanisms, i.e., to understand a system by observing the behaviour of its components and their interactions. However, as stated, the study of self-organization and adaptation has mainly been related to living systems so far.

Computing and communication systems are basically artificial systems. This prevents conventional self-organization and adaptation principles and approaches from being directly applicable to computing and communication systems. Complexity attributes in terms of openness, scalability, uncertainty, discrete-event dynamics, etc. have varied contexts in large-scale complex IT systems, and are too prominent to be solved by the procedures pre-defined at design-time. Rather, they have to be tackled by means of run-time perception of the complexity patterns and the run-time enforcement of self-organization and adaptation policies. The current knowledge about large-scale complex IT systems is still very limited, and a framework has yet to be established for their self-organization and adaptation.

The methodology of multi-agent systems and the technology of Grid computing have shed lights for the exploration into the self-organization and adaptation of large-scale complex IT systems. Essentially, multi-agent systems provide a generic model for large-scale complex IT systems. Exploring and understanding the self-organization and adaptation of multi-agent systems is of profound significance for engineering the self-organization and self-management/regulation of large-scale complex IT systems comprised of communication infrastructures and computing applications. A Grid computing system exposes all the complexity attributes typical of large-scale complex IT systems. Investigating the self-organization and autonomic systems for Grid computing has remained a huge challenge.

To respond to the challenge above, apparently there is the urgency to have a focal forum to exchange and

disseminate the state-of-the art developments from different disciplines.

The SOAS'2006 conference right aims 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 in the areas of Multi-agent Systems and Grid Computing, and on Autonomic Computing and Autonomic Communications. SOAS'2006 conference will also serve as an exclusive opportunity to think about the challenges and to shape the future.

SOAS'2006 conference is an integral event and is comprised of five thematic workshops as follows.

- Workshop 1: Basic Principles and Methodologies for Self-Organization and Adaptation
- Workshop 2: Self-Organization/Adaptation of Multi-Agent Systems
- Workshop 3: Self-Organizing/Autonomic Grid Computing
- Workshop 4: Autonomic Computing in General
- Workshop 5: Autonomic Communications

All accepted papers of the conference will be included in the conference proceedings. After the conference fully expanded versions of a selection of best papers of the conference will be published in the 2nd volume of "Self-Organization and Autonomic Informatics" (which is indexed in EI, ISI, etc.). All submissions to the conference will be automatically considered as potential submissions to the Multi-agent and Grid Systems ---- An International Journal, unless authors claim otherwise.

Important Dates

Submission	30 April 2006
Notification of acceptance or rejection	18 June 2006
Proposals for Invited-sessions, Tutorials, or Panels	18 June 2006
Camera ready version	16 July 2006

General Chair

Hans Czap, Germany (Hans.Czap@uni-trier.de)

Program Chair

Huaglory Tianfield, UK (h.tianfield@gcal.ac.uk)

Program Vice Chairs

Sven A. Brueckner, USA (sven.brueckner@altarum.org)
Manish Parashar, USA (parashar@caip.rutgers.edu)
Hong Tang, China (tanghong@cqupt.edu.cn)
Xingyu Wang, China (xywang@ecust.edu.cn)

Invited-Sessions/Tutorials/Panel Chair

Hong Zhu, UK (hzhu@brookes.ac.uk)

Director of SOAS Conference Series

Huaglory Tianfield