# ACM Transactions on Autonomous and Adaptive Systems

## Special Issue on

# Organic Computing

## SCOPE

Organic Computing (OC) has emerged recently as a challenging vision for future information processing systems, based on the insight that we will soon be surrounded by systems with massive numbers of processing elements, sensors and actuators. Because of the size of these systems it is infeasible for us to monitor and control them entirely from external observations; instead they will need to help us monitor, control and adapt themselves. To do so, these components will need to be aware of their environment, to communicate freely, and to organize themselves in order to perform the actions and services that are required. The presence of such networks of intelligent systems in our environment opens up fascinating application areas but, at the same time, bears the problem of their controllability. Hence, we have to construct these systems as robust, safe, and trustworthy as possible. In order to achieve all these goals, our computing systems will have to act more independently, flexibly, and autonomously. Thus, we are interested in new analytic methods and architectures underlying complex systems. In OC, we put an emphasis on systems that exhibit "life-like" properties, such as being self-organizing, self-configuring, self-healing, self-protecting, self-explaining, and context-aware.

The vision of OC and its fundamental concepts arose independently in different research areas like Neuroscience, Molecular Biology, and Computer Science & Engineering. In this special issue, we welcome contributions from all these areas to OC. We seek theoretical as well as carefully evaluated practical papers dealing with complex computing systems that

- adapt dynamically to the current conditions of their environments,
- exhibit "self-x" properties as described above, and
- are partly inspired by biological information processing principles.

For more information on OC see:

- OC Page: http://www.organic-computing.org
- DFG research program OC: http://www.organic-computing.de/SPP
- IEEE OC Task Force: http://www.neuroinformatik.rub.de/thbio/project/oc

## ACM TAAS

ACM Transactions on Autonomous and Adaptive Systems (TAAS) is a venue for high quality research contributions addressing foundational, engineering, and technological aspects of complex computing systems exhibiting autonomous and adaptive behavior. TAAS encourages contributions advancing the state of the art in the understanding, development, and control of such systems. For more information, please follow the link:

http://www.acm.org/pubs/taas

## REVIEW & SUBMISSION PROCESS

Manuscripts will first be screened for topical relevance, and those that pass the screening process will undergo a full review procedure according to the standards of TAAS. Prospective authors are encouraged to submit a preliminary single page abstract by February 16, 2007. This will help in planning an efficient review process and providing initial feedback to the prospective authors.

The manuscripts should be formatted according to the ACM TAAS guidelines available from the journal homepage and submitted to:

octf@neuroinformatik.rub.de

## GUEST EDITORIAL TEAM

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- Rolf P. Würtz, Institut für Neuroinformatik, Ruhr-Universität Bochum, Germany

## IMPORTANT DATES

- Single page abstract submission (not required) deadline is February 16, 2007.
- Paper submission deadline is **May 1, 2007**.
- Submission feedback to authors will be sent in July 2007.
- The tentative publication date is June 2008.

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