

Seventh International Workshop
"Engineering Societies in the Agents World" (**ESAW 2006**)
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AIMS & SCOPE

Software systems are undergoing dramatic changes in scale and complexity. Whether at a planetary scale with Web-based systems or at a microscopic scale with nanotechnologies, there is a huge amount of components interacting dynamically. Whatever the component granularity is, their interactions provide us with increasingly complex, context-aware, and content-adaptive services and functionalities. There is therefore a strong qualitative impact on the nature, substance and style of interactions between components. At the macro-level the system is viewed as the result of the interactions between micro-level components. These interactions will occur in patterns and via mechanisms that can hardly be grasped in terms of classical models of interaction. Moreover, complex systems typically involve heterogeneous processes, at different levels of complexity, often calling for heterogeneous computational and interactive capabilities of the system components.

To some extent, inspiration should be taken from a vast range of existing natural and artificial systems, where the society notion applies: from biological and ethological systems to human society, from large set of homogeneous components with simple behaviour, to groups of heterogeneous individuals featuring high level cognitive capabilities. Future software systems will exhibit characteristics closer to these than to mechanical systems and traditional software architectures. For example, future systems may need to have self-assembling capabilities in order to enable the emergence of the right collective behaviour. This situation poses exciting challenges to computer scientists and software engineers. Already, software agents and multi-agent systems are recognised as both useful abstractions and effective technologies for the modelling and building of complex distributed applications. However, the research on engineering complex software systems in terms of agent societies is still in its infancy. An urgent need exists for novel approaches to software modelling and software engineering that can support the successful deployment of software systems made up of a massive number of autonomous components. We need to enable designers to control and predict the behaviour of their systems, but alternatively to enable emergent global system properties and discovered functionality to be commonplace. It is very likely that such innovations will exploit lessons from a variety of different scientific disciplines, such as sociology, economics, organisation science, modern thermodynamics,

and biology. Furthermore, since these systems will be ubiquitous, persistent, and pervasive, i.e. embedded in the real world, we need to know what frameworks of law will facilitate their regulation.

The sequel to successful editions since 2000, ESAW'06 remains committed to the use of the notion of multi-agent systems as seed for animated, constructive, and highly inter-disciplinary discussions about technologies, methodologies, and tools for the engineering of complex distributed applications. While the workshop places an emphasis on practical engineering issues and applications, it also welcomes theoretical, philosophical, and empirical contributions, provided that they clearly document their connection to the core applied issues. Prospective papers about new paradigms, theories, models are also appreciated.

Topics of interest include:

- theory and practice of agent societies as complex systems
- analysis, design, development and verification of agent societies
- engineering open & large-scale agent societies
- interaction and coordination patterns in agent societies
- agent communication in agent societies
- inter-disciplinary approaches for agent societies engineering
- organisation models and technology for agent societies
- self-organisation and self regulation in agent societies
- trust in agent societies
- Institutions for agent societies
- engineering of social intelligence in multi-agent systems
- cooperative working environments for agents in agent societies
- programming languages for agent societies
- software architectures for agent societies
- middleware and infrastructures for agent societies
- model-driven architectures for agent societies
- tools and models for agent societies management
- online engineering of agent societies
- agent societies for engineering Web service & semantic Web ecosystems
- virtual enterprises and organisation as agent societies
- agent societies for autonomic computing
- modelling and engineering simulations as agent societies
- agent societies and e-Government scenarios

IMPORTANT DATES

Submission due: 30th June 2006

Notification of acceptance/rejection: 21st July 2006

Revised papers for Workshop notes: 31st July 2006

POST-PROCEEDINGS

The series of ESAW post-proceedings is published by Springer-Verlag in the LNAI series (LNAI 1972, 2203, 2577, 3071, 3963), the last volume being published under the "Hot Topics" subseries.