

AMORE

*A*gents *M*eet *O*bjects: A mutually stimulating *RE*lationship?

Netobjectdays 2006 (NODe 2006)

www.netobjectdays.org

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Exhibition and Convention Center

Erfurt, Germany

Agents and multi-agent systems (MAS) have become one of the most active and lively research areas in computer science worldwide. As a research field it covers a broad spectrum of aspects, from pure technical (hardware-oriented) ones (e.g., low level communication infrastructures) to even social ones (like trust, deception, fraud). MAS research is nurtured by and overlaps with many other research areas. As a consequence many events related to computer science and software engineering cover in a way or another also agent-related topics.

Objects and object-oriented technology is a pretty old research field, however, still extremely lively since many problems are not yet solved. Objects are considered to be computational entities that encapsulate state, perform actions, and communicate by message passing. At a first glance there seems to be little difference to the definition of agents, however, this assumption does not exactly reflect the truth. While agents share the common characteristics of objects they are more “specialized”. First of all they are autonomous; especially they have control over their behavior and can not be controlled by the outside. Second they are capable of a flexible behavior in that they exhibit intrinsically active (reactive, proactive) and social behavior; they act instead of being acted upon. Given these additional features there are quite a number of researchers who believe that agent-oriented software engineering is the logical successor of object-oriented software engineering.

Between these two extremes of the spectrum a lot of research areas have established themselves in the recent past, like Web-Services, Grid computing, Service-Oriented Architectures, Self-Organizing Applications, Autonomic/Adaptive/Organic Computing, Reflective Systems, Emergent Systems, and Emerging Paradigms of Software Engineering, especially for System Families, such as Aspect-Oriented, Generative, and Model-Driven Software Engineering. All these disciplines share quite a lot with both delimiters of the spectrum, however, are nevertheless fully-fledged, self-contained research disciplines as well.

While it is quite obvious that both extremes of the spectrum and everything in between have some overlap it is also obvious that each research area has its own, very specific research contributions. In a broader sense object-oriented technology is dedicated pretty much to software engineering, software models, process flows, architectural designs, engineering principles, and organizational approaches for developing supportable systems. The overall goal is to develop trustworthy, reliable, robust, and efficient software systems that deliver the desired functionality and satisfy other system qualities with understandable, maintainable, and scalable design. Of course, and this closes the loop, these statements are true for systems that rely on multi-agent systems technology as well. However, both disciplines approach and realize these goals in different ways.

Netobjectdays has always been a conference that had at its heart object-oriented technologies. In the recent years NODe also integrated topics related to the Web, Web-Services, Grid computing, agents and multi-agent systems, software architectures, and emerging paradigms

of software engineering. NODe 2006 intends to bring together as many research groups as possible that are related to object-oriented technology on the one side and multi-agent systems on the other and everything that can be seen as being strongly related to both (thus, as being in between). This means that NODe 2006 will specifically explore the overlap between disciplines, on interdisciplinary research, on unifying research. All disciplines mentioned above share common research objectives albeit on different levels of priority. This indicates that interdisciplinary research needs to be put on the next level of integration in order to avoid the permanent reinvention of the wheel in different research areas which just use different terminology, however, otherwise concentrate on very similar topics.

To summarize, NODe 2006 will cover Everything You Always Wanted to Know About

- Grid computing and MAS
- Grid computing and Web-Services
- Grid computing and Autonomic/Adaptive/Organic Computing
- Self-organization/Emergence and Grid Computing
- Self-organization/Emergence and MAS
- Self-organization/Emergence and Web-Services
- Autonomic/Adaptive/Organic Computing and MAS
- Autonomic/Adaptive/Organic Computing and Self-organization/Emergence
- Autonomic/Adaptive/Organic Computing and Self-organization/Emergence
- Reflective Capabilities of Agents and MAS
- Tailoring software engineering methods for Agent/MAS development including flexible architectures of Agents/MAS
- Developing Agents/MAS as System Families
- Aspect-oriented, Model-driven, and Generative Software Development and MAS
- Component-Based Programming and Grid Computing
- Component-Based Programming and Autonomic/Adaptive/Organic Computing
- Etc.

Another main goal of NODe has always been to bridge the gap between industry and users on the one side and the academia on the other. Consequently, NODe concentrates on applied research, state-of-the-art presentations, application and experience reports, and, especially in 2006, on challenges and opportunities in integrating several research disciplines (like Grid computing and multi-agent systems) or other exciting papers about interdisciplinary challenges and opportunities.

Paper types

In general, we want to accept several different kinds of papers. Organizers of special tracks can decide which of these types they want to concentrate on.

1. Full research paper

These are the usual research papers which have to add substantially to the state-of-the-art. They have to run through a rigorous review process and need to score accordingly in the review process.

2. Onward papers

These are papers that present some excellent ideas even if they are not yet stable respectively mature. This type of paper can either be a paper of normal length or a short paper. In any case,

it needs to present an appealing idea which may become the starting point for other research projects.

3. Vision papers

Papers of this kind present some vision which goes far behind the current state-of-the-art. Vision papers are usually presented by a senior researcher who has much experience in a research field, however, is still open enough to develop a clear vision about the development in some fields. Normally, authors are invited to submit a vision paper.

4. State-of-the-art papers

This type of paper presents a comprehensive overview about the state-of-the-art. However, besides this these papers need to offer some add-on by either discussing strong points, weaknesses, and challenges in a research field (on the basis of the state-of-the-art) or by giving some serious hints in what direction(s) the field may evolve (or both) (like: xyz: past, present and future). In this category also fall papers that discuss the overlap, differences, synergies, and challenges and opportunities in integrating at least two research fields. Papers of this type require from an author a lot of experience and a solid standing in a field.

5. Application and experience reports

While research often concentrates on improving the state-of-the-art applied research cannot succeed without a solid and comprehensive feedback. In this paper category fall papers that do exactly this, they provide a deep insight in the pros and cons of applying a specific technology. Usually, this kind of paper is written by people from industry or by users.

Publications/Proceedings

All papers will be published in the conference proceedings. Besides this it is intended to publish the best papers with a renowned publishing company (LNCS/LNAI and/or other established publishers, like IOS or Whitestein). Depending on the quality and quantity of the papers it may be possible to publish different proceedings, e.g., one related to research papers (perhaps including application and experience reports), one related to the state-of-the-art and one related to the visions. In any case these additional proceedings need to follow a very strict quality standard (which means that the acceptance ratio for these proceedings should not be lower than one out of four (on the level of normal papers, not invited papers)). Onward or short papers cannot be published in these proceedings.

Additionally, the authors of papers with high potential can be invited to submit a substantially extended version of their paper to special issues in several journals, as e.g.,:

- IOS Press: Multiagent and Grid Systems,
- CRL Publishing Company: Computer Systems Science & Engineering respectively Engineering Intelligent Systems,
- INDERSCIENCE Publishers: IJAOSE (International Journal of Agent-Oriented Software Engineering; Brian Henderson-Sellers and Paolo Giorgini)).

Structure of NODe

As foundation for this event the following well-established conferences will be conducted as integral part of NODe 2006 (please be aware that the references are (mostly) the ones to the 2005 events):

- ENASE (1st International 2-Day Workshop on Evaluation of Novel Approaches to Software Engineering (ENASE'06))
<http://www.e-informatyka.pl/ENASE/2006/index>
- GSEM (International Conference on Grid Service Engineering and Management)
<http://www.ict.swin.edu.au/conferences/gsem2005/committees.html>

- MATES (German conference on Multi-Agent System TEchnologieS)
<http://ki.informatik.uni-wuerzburg.de/MATES2005/mates05.php>
- SOAS (International Conference on Self-Organization and Adaptation of Multi-agent and Grid Systems)
<http://www.soas2006.org/>

Contact person (general chair NODe 2006):

Prof. Dr. Rainer Unland

University of Duisburg-Essen

Institute for Computer Science and Business Information Systems (ICB)

Practical Computer Science, especially Data

Management Systems and Knowledge Representation

Schützenbahn 70

45117 Essen, Germany

Tel.: (+49) 201-183 3421

IP-Tel. Skype: unlandr

Fax: (+49) 201-183 4460

Email: Rainer.Unland at icb.uni-due.de

WWW: <http://www.cs.uni-essen.de/dawis/>