

# CALL FOR PARTICIPATION

## First International Workshop on Coordination and Adaptation Techniques for Software Entities (WCAT'04)

June, 2004

Oslo, Norway

One-day workshop

Held in conjunction with ECOOP '04 (14-18 June, 2004)



### Organizers

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### Important Dates

Call for Participation: Mar. 1, 2004

Submissions Due: Apr. 5, 2004

Notification: Apr. 25, 2004

### Further Information

<http://WCAT04.unex.es>

### DESCRIPTION

In the recent years, the need for more and more complex software, supporting new services and for wider application domains, together with the advances in the net technology, have promoted the development of distributed systems. These applications are constituted by a collection of interacting entities (either considered as subsystems, objects, components, or more recently web-services) that collaborate to provide some functionality.

One of the most complex tasks when designing such applications is to specify the coordinated interaction that occurs among the computational entities. This fact has favoured the development of a specific field in Software Engineering devoted to the Coordination of software. Some of the issues addressed by such discipline are:

1. To provide the highest expressive power to specify any coordination pattern. These patterns detail the order in which the tasks developed by each component of the distributed application have to be executed. The state of the global computation determines the set of tasks that can be performed in each instant.
2. To promote the re-usability both of the coordinated entities, and also of the coordination patterns. The coordinated entities could be used in any other application in which their functionality is required, apart from the coordination pattern that directs them. The same holds for the coordination patterns; they could be used in a different application, managing a different collection of entities with different behaviour and different interfaces, but with the same coordination needs.

In fact, the ability of reusing existing software has always been a major concern of Software Engineering. In particular, the need of reusing and integrating heterogeneous software parts is at the root of the so-called Component-Based Software Development. The paradigm "write once, run forever" is currently supported by several component-oriented platforms.

However, a serious limitation of available component-oriented platforms (with regard to reusability) is that they do not provide suitable means to describe and reason on the interacting behaviour of component-based systems. Indeed, while these platforms provide convenient ways to describe the typed signatures of software entities via interface description languages (IDLs), they offer a quite limited and low-level support to describe their concurrent behaviour. As a consequence, when a component is going to be reused, one can only be sure that it provides the required interface but nothing else can be inferred about the behaviour of the component with regard to the interaction protocol required by the environment.

To deal with this problem, a new discipline that we could name as Software Adaptation, is emerging. Software Adaptation focuses on the problems related to reusing existing software entities when constructing a new application, and promotes the use of adaptors -specific computational entities for solving these problems. The main goal of software adaptors is to guarantee that software components will interact in the right way not only at the signature level but also at the protocol and semantic levels. In this sense, Software Adaptation can be considered as a new generation of Coordination Models.

Topics of interest include, but are not limited to:

- New Coordination Models separating the interaction concern.
- Aspect-oriented approaches to software adaptation.
- Coordination and adaptation in concurrent and distributed object-oriented systems.
- Interface and choreography description of Web-Services.
- Coordination and adaptation middleware.
- Rigorous approaches to software adaptation.
- Identification and specification of interaction requirements.
- Patterns and frameworks for component look-up and adaptation
- Automatic generation of adaptors.
- Documenting components to enable software composition and adaptation.
- Metrics and prediction models for software adaptation.
- Extra-functional properties in their relation to coordination and adaptation.
- Tools and environments.
- Industrial and experience reports.

## ADDITIONAL DETAILS

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WCAT'04 tries to provide a venue where researchers and practitioners on these topics can meet, exchange ideas and problems, identify some of the key issues related to coordination and adaptation, and explore together and disseminate possible solutions. To enable lively and productive discussions, attendance will be limited to 20 participants, and submission of a position paper (about five or six pages) is required.

Position papers should describe authors' knowledge and experience in the field of the coordination and adaptation of software. However, submissions should not take the form of full or technical papers describing authors' research and their results. On the contrary, submissions should describe the state-of-the-art in this field, address open issues, present the point-of-view of the authors and their proposals (probably including a succinct description of the technical means being used), and reference relevant work in the field, by the authors themselves or by others.

Description of work-in-progress, open questions and participants' expectations on the workshop is strongly encouraged. Hence, we suggest that position papers contain a specific final section named Open Issues in which the authors identify a number of (typically three or five) open questions in their work that cause them special problems or that they think relevant for the rest of the community.

Attending to these bases, submissions will be selected for participation by the organizers. All selected papers will be made available to participants, who should read them prior to the workshop to foster a lively discussion and improve the productivity.

### SUBMISSION FORMAT AND PROCEDURE

Position papers should be five or six A4 pages long in LNCS format and include the author's name, affiliation and contact details. They should be submitted by e-mail as postscript or PDF files before April 5, 2004, to both organisers.

LNCS style and guidelines available from: <http://www.springer.de/comp/lncs/authors.html>.

### WORKSHOP FORMAT

To establish a first contact, all participants will make a short presentation of their positions (about five or ten minutes maximum, in order to save time for discussions during the workshop). Presentations will be followed by a round of questions and discussion on participants' positions. From these presentations, a list of open issues in the field must be identified and grouped. This will make clear which are participants' interests and will also serve to establish the goals of the workshop. Then, participants will be divided into smaller groups (typically about 4-5 persons each), attending to their interests, each one related to a topic on software coordination and adaptation. The task of each group will be to discuss about the assigned topic, to detect problems and its real causes and to point out solutions. Finally a plenary session will be held, in which each group will present their conclusions to the rest of the participants, followed by some discussion. A dinner bringing together all the participants is planned as a part of the workshop.

### POST-WORKSHOP PUBLICATION

As usual, the ECOOP'2004 Workshop Reader will include a report on this workshop, written by the organizers, providing a summary of the workshop with the major issues discussed, and the conclusions drawn from the discussions.

Additionally, participants will be invited to submit an extended paper after the workshop, in which they may describe in length their research activities in the field, (possibly including also more detailed technical aspects). Extended papers must take into account the discussions and conclusions of the workshop, and should try to address some of the open issues raised. These post-workshop contributions will be collected as a technical report by the Universities of the organizers. Depending on the soundness of the contributions, and if there is enough interest from the participants, the establishment of a formal review process for the publication of a special issue of a journal will be considered.