



## **Special Issue on Semantic Extensions to Middleware**

Middleware technology is traditionally seen to provide the functionality necessary to abstract providers and consumers from syntactic and technical heterogeneities. In large scale, open and dynamic systems however, where communication partners may not know each other, traditional solutions like CORBA are not appropriate anymore; the same counts for Web service-based approaches. These technologies require a priori agreement of the message exchange patterns, interfaces and data models to be used. This is clearly not guaranteeable in more advanced open and collaborative systems. Semantic technologies are often presented as a solution for automating computer processes and mediating between heterogeneous data. As semantics become more of a part of the underlying data and process layers of large scale systems, extensions are also required in the middleware layer to not only support knowledge mediation and coordination but to provide new functionalities not previously possible due to the introduction of machine processability of the data and processes being integrated at the middleware.

As knowledge is becoming more ubiquitous in the Internet, we expect millions, even billions of knowledge and service providers and consumers to interact, integrate and coordinate on the emerging, open Semantic Web just as today millions of clients exchange data and perform work over the existing Web infrastructure. This produces the need for scalable and dynamic systems that support collaborative work with distributed and heterogeneous knowledge and applications.

This special issue aims at *publishing high quality research papers related to semantic extensions to middleware, and middleware solutions for the Semantic Web and for large scale service computing architectures*. Researchers working in these areas worldwide are invited to contribute.

### **Topics**

Topics of interest include, but are NOT limited to:

- Extensions to existing middleware such as Web services, Grid systems, tuplespaces, message-oriented middleware etc. with semantic technologies ;
- Middleware solutions for large scale (Semantic) Web applications ;
- Semantics-driven middleware solutions for mobile and ubiquitous computing ;
- Development and engineering methods for semantic extensions to middleware;
- Ontologies and metadata schemes to capture aspects of middleware layer functionality ;
- Reasoning approaches to efficiently support the functionality of middleware ;
- Scalable solutions to support large scale mediation, collaboration and coordination of heterogeneous data and processes ;
- Methods to deal with coordination of distributed services and applications working with semantic data ;
- Approaches to knowledge-driven self-organization in middleware ;
- Practical experiences in using semantic extensions of middleware to realize large scale knowledge systems or service-oriented architectures ;
- Deployment perspectives for semantic middleware ;
- Studies on target markets for semantic extensions to current middleware and backwards compatibility.

### **Important Dates**

Submission Due Date	March 15, 2009
Notification of Acceptance	May 15, 2009
Submission of Final Revised Paper	June 15, 2009
Tentative Publication Date	August 15, 2009

## Submission Guidelines

We invite original research papers, survey and tutorial papers, on both applied and theoretical aspects, which are previously unpublished and not currently submitted for publication elsewhere. Manuscripts should be written in English and not exceed 12 pages in length. Whenever applicable, submissions must include the following elements: title, authors, affiliations, contacts, abstract, index terms, introduction, main text, conclusions, appendixes, acknowledgements, references and biographies. Submissions must be directly sent in PDF format via email to the Guest Editors: [jsw-special-se2m@sti2.at](mailto:jsw-special-se2m@sti2.at), with a covering e-mail clearly stating the name, address and affiliation of the corresponding author. Please identify your submission in the email subject line "Submission -JSW Special Issue on Semantic Extensions to Middleware". Complete guidelines for prospective authors can be found on-line at <http://www.academypublisher.com/forauthors.html>.

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