

## Web Services and Workflow: Composition, Collaboration, Coordination

Mini Track Chairs:

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Many researchers are becoming interested in how the standards associated with the World Wide Web can facilitate machine-to-machine communication. Standards associated with Web Services provide mechanisms for machines to discover resources and invoke services across the Internet. One potential use of these standards is in the coordination of long-running processes across organizational boundaries. Instead of simple request-response patterns, these processes require the elaborate sequencing of messages, the discovery and binding of service access points, and the consideration of decentralized process control.

For example, in the business domain, supply chain processes have this characteristic. But in order to coordinate across boundaries, patterns of information flow and resource assignment need to be considered. Workflow research has been considering such patterns within companies for a long time, and it seems reasonable that the insights of workflow can be integrated into the standardization of web services.

The focused effort by the Internet community to define standards around the area of Web Services Choreography is energizing the ongoing research in workflow. The papers in this track reflect this energy.

The first paper of the minitrack by M. Brian Blake looks at one of the more difficult problems associated with web services composition – in an open environment, conditions will be changing constantly. The paper describes the use of agents to mediate changes from the environment.

The second paper by Patrick C. K. Hung and Dickson K. W. Chiu points out that human intervention will be an important aspect of any complex distributed system. The authors extend one of the contending standards in the area of web services choreography, BPEL4WS, with a set of assertions to handle exceptions in the workflow.

The final paper by Kaizar Amin, Gregor von Laszewski, Mihael Hategan, Nestor J. Zaluzec, Beulah Alunkal, and Sandeep Nijsure considers the Grid as a starting point. The authors propose a streamlined workflow system incorporating features of Ant, which they name GridAnt. They discuss a prototype which provides a simple way of composing Grid services. Such a system provides a novel way of leveraging the established infrastructure of the Grid with the concepts of workflow management.