

Collaborative Engineering of Processes and Systems Introduction to the minitrack

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The minitrack on Collaborative Engineering of Processes and Systems deals with the development and use of participative methods and tools for quantitative and qualitative analysis of current business processes, and for design and implementation of new ways of working. The minitrack usually does not focus on the production and assembly of goods, but more on administrative processes that occur in all public and private organizations. Part of the attention is aimed at the service industry, because high quality processing of information is usually the added value the industry provides for its customers. The administrative processes *are* their primary process. In that way, the topic of the minitrack is closely linked to business process redesign, but it has a broader focus. In this minitrack we look especially at recent developments in the field, focusing on concepts for collaboratively modeling the dynamic behavior of business processes and of those involved in supporting their design and change. This year, we selected a number of interesting papers for the minitrack, which give a good insight into the current state of the field.

Biuk-Aghai and Simoff open this year's minitrack with a discussion on designing virtual work processes via reverse engineering. Approaches commonly used to design collaborative virtual environments tend to be top-down. The authors propose a bottom-up approach, called reverse engineering. The reverse engineering approach first focuses on individual tasks. These tasks are then combined into processes. And, finally, a temporal analysis is used to

determine the sequence in the tasks. By following these steps, the reverse engineering method offers promising possibilities to look not only to deterministic workflow processes, but also to non-deterministic processes that emerge during execution.

As is also witnessed in the previous paper, it is important to address attention to dynamic workflow processes. In their paper, Meng, Su, Lam, and Helal illustrate a dynamic workflow model. With this model, it becomes possible to handle dynamic workflows across enterprise boundaries. It is argued and illustrated that by adding connectors, events, triggers, and rules to the Workflow Process Definition Language, workflow technology can be used to support E-business.

Sierhuis, Clancey and Sims close this year's minitrack with a discussion on multi-agent modeling and simulation to design work systems de novo. Brahm is the multi-agent modeling and simulation environment they used throughout their project. The work system they looked at is proposed NASA discovery mission to the Moon with a semi-autonomous rover. Although somewhat unconventional in comparison to the previous papers, this paper represents the 'heart' of collaborative engineering.

The papers in this minitrack provide new insight into the field of collaborative engineering of processes and systems. Both the theoretical background and case evidence that the methods work in real life cases are presented. We commend the papers to your attention and trust that they will stimulate discussions and future research.