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# A Computational Framework for Designing Interleaved Workflow and Groupware Tasks

Amit Deokar

*University of Arizona*, [avd@email.arizona.edu](mailto:avd@email.arizona.edu)

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# A Computational Framework for Designing Interleaved Workflow and Groupware Tasks

**Amit Deokar**  
University of Arizona  
avd@email.arizona.edu

## ABSTRACT

Organizations are adopting a variety of process coordination tools such as groupware and workflow management systems to support seamless process execution and streamline individual and group knowledge worker activities. Such process support systems are being deployed in organizations in an ad hoc manner without any overall guiding process design principles leading to additional costly overheads of systems modeling and software maintenance without the requisite benefits. This paper presents a conceptual framework illustrating a structured approach to organizational process design, providing effective task coordination and information management to address some of the relevant issues. Contributions of the research discussed in this paper include: a) a declarative AI planning based representation formalism to describe both individual and group activities, b) a structured top-down design process that enables the design of group and individual activities in an explicit manner, c) computational procedures to automate the generation of process design alternatives, role assignment to tasks, and support the detailed design of group activities. The feasibility of the integrated representation is evaluated based on extant literature on process models and case studies. The benefits of the formalism are evaluated by prototyping intelligent build-time tools for process design, and utilize the same in the design of processes for tasks such as new product development, requirements analysis, and drug discovery. This paper summarizes the work done so far as well as ongoing work by the author as a part of his doctoral dissertation.