



LEHRSTUHL FÜR INFORMATIK III

Rheinisch-Westfälische Technische Hochschule Aachen

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Diplomarbeit

Extension of a Workflow-Management-System by functionality for dynamics

Background

The Collaborative Research Center 476 IMPROVE deals with methods and tools that support chemical engineering processes on technical (simulation plans etc.) and administrative (workflows, scheduling plans etc.) level. The latter is subject of a subproject which occupies with the management of development processes.

Development processes, e.g. software development, are hard to plan in advance. Generally, types and number of development activities are not determined until runtime of the respective process. Additionally, unexpected repetitions of activities due to mistakes might yield at runtime. Because of these dynamics management of development processes is hard to handle.

A different class of processes are business processes, which are more repetitive and therefore easier to plan in advance. Workflow-Management-Systems (WfMS) support planning and execution of these processes. Planning within a WfMS covers the creation of several graphs of a certain kind (workflow templates) wherein nodes represent activities (e.g. Review in fig. 1) and edges represent dependencies between activities (Review before Publish). Workflow templates can be instantiated during runtime so that each activity has a certain state at each point of time (Review active, Publish waiting etc.).

Task

Topic of the diploma/masters thesis is the extension of an existing WfMS to make it usable for development processes. This extension should enable the WfMS's user to deviate from the Workflow-Template if it does not cover some exceptional cases or if it is not completely worked out which is normal in development processes. In a first step (Open-Source) WfMSs have to be evaluated according to previously defined evaluations criteria. After choosing the most appropriate one a concept for the extension has to be elaborated whose feasibility has to be proven in a prototypical implementation.

Prerequisites

Ability for independent work, programming skills in Java (or a similar programming language). Background in software technology and interest in collaborative work within a interdisciplinary context would be useful.

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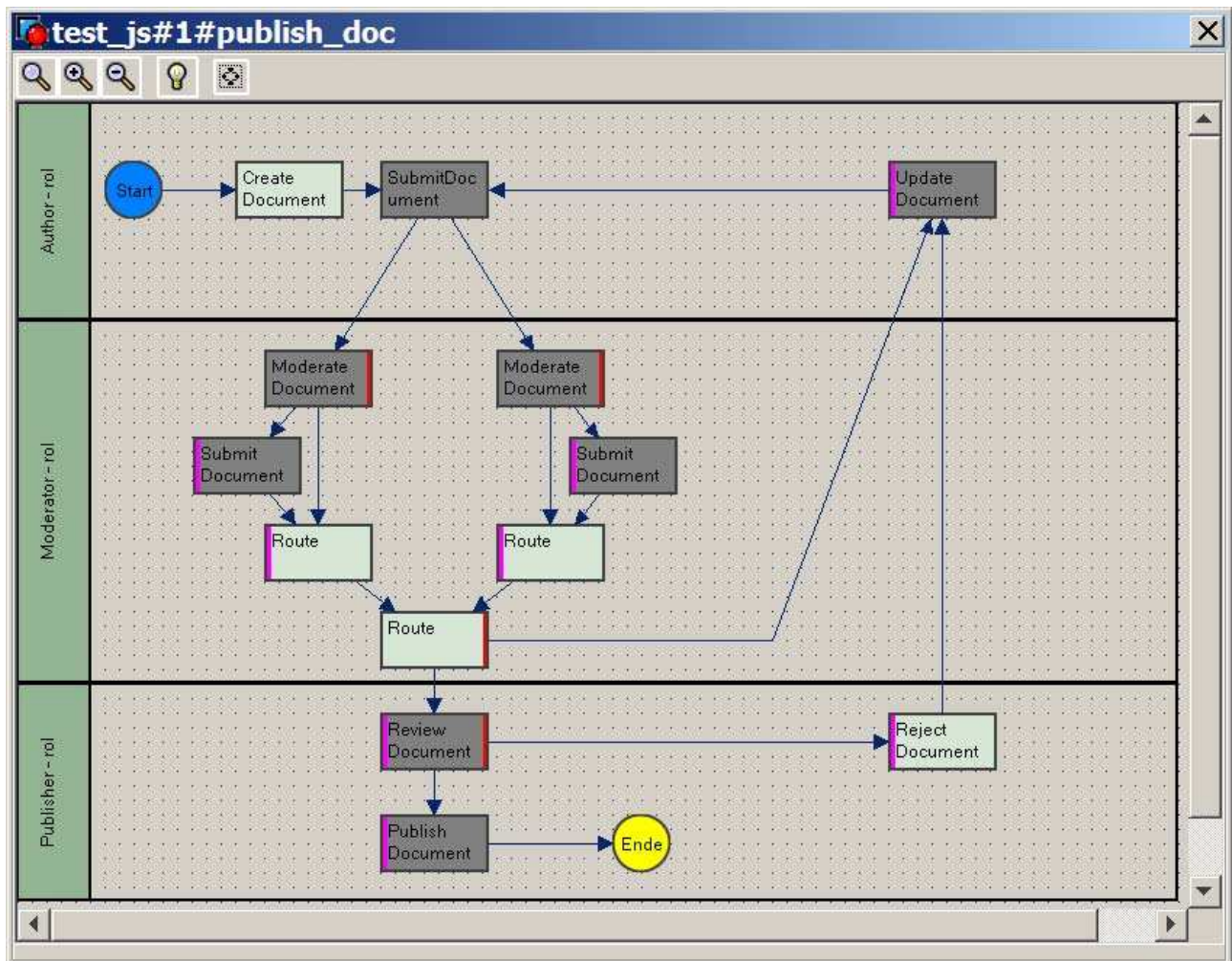


Abbildung 1: A common workflow template