

## Knowledge based approach to software development process modeling

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**Abstract.** Modeling a software process is one way a can company decide which software process and/or its adjustment is the best solution for the current project. Modeling is the way the process is presented or simulated. Since there are many different approaches to modeling and all of them have pros and cons, the very first task is the selection of an appropriate and useful modeling approach for the current goal and selected conditions. In this paper, we propose an approach based on ontologies.

**Keywords:** ontology, knowledge representation, modeling, simulation, software development process

### 1 Introduction

Modeling the process is always driven by the specific goal. The goal has to be selected before the modeling is performed, because the modeling approach depends on the desired point of view and that point of view depends on the goal. Our intention is to develop a modeling approach that can be used, at least at the beginning of the modeling, without the knowledge of the real goal. We decided to use an ontology based approach that could fulfill some necessary properties: *iterativeness* – the model can be modeled from the abstract viewpoint and then refined; *transformation* between different types of model approaches; *integration of approaches* – avoiding duplicities when modeling by one approach and then switching to another.

The goal of this paper is to describe how to use ontologies for the creation of such software process models.

This paper is organized as follows: section 2 provides an introduction to the problem of the software development process, section 3 describes the most current software process modeling, section 4 presents our knowledge-based approach to software process modeling, section 5 discusses the properties of using an ontology and the OWL for process modeling, section 6 demonstrates the presented approach of the case study, section 7 concludes, and section 8 discusses our future work.



























