TU Clausthal

Diplomanden- und Doktorandenseminar
des Instituts für Informatik

# The Bochica Framework for Model-driven Agent-Oriented Software Engineering

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Modeling real world agent-based systems is a complex endeavour. An ideal domain specific agent modeling language would be tailored to a certain application domain (e.g. virtual worlds) as well as to the target execution environment (e.g. a legacy virtual reality platform). This includes the use of specialized domain concepts, information models, software languages (e.g. query languages for reasoning about an agent's knowledge), as well as custom views and diagrams for designing the system. At the same time it is desirable to reuse application domain independent model artifacts such as interaction protocols (e.g. auction protocols) or goal/plan decompositions of a certain problem domain that already proved their use in similar scenarios. Current agent modeling languages cover the core concepts of multiagent systems and fail to address features of certain application domains and platforms. Thus, a gap between design and code remains. The Bochica framework for model-driven AOSE approaches this problem by a platform independent core modeling language which can be tailored through several extension interfaces to application domains and execution environments. Moreover, we propose an iterative process for adapting the framework to the users' needs and closing the gap between design and code. We evaluated our approach on a distributed Semantic Web based execution platform for virtual worlds.

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