Abstract

We are interested in the specification and deployment of multi-agent systems, and particularly we focus on the execution of agents. Along this research line, we have proposed a general model for graded BDI agents, specifying an architecture based on multi-context systems (MCSs) and able to deal with the environment uncertainty (via graded beliefs) and with graded mental proactive attitudes (via desires and intentions). These graded attitudes are represented using appropriate fuzzy modal logics. In this article, we cope with the operational semantics of this agent model. We present a Multi-context calculus, based on Ambient calculus, for the execution of MCSs with its corresponding semantics. This calculus is general enough to support different kinds of MCSs and particularly, we show how a graded BDI agent can be mapped into the language of the calculus.

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