

## **Towards a framework for evaluating AOSE methodologies from agent and generic software engineering perspectives**

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Agent Oriented Software Engineering (AOSE) is a software paradigm which combines artificial intelligence concepts into software engineering domain. The main concept of AOSE is the *Agent*. In AOSE, the agent has specific characteristics such as autonomy, mental mechanism and adaptability. Characteristics of a multi agent-based software system differ from a generic software system because of this specific behavior of agent. Several evaluation frameworks and criteria have been proposed to evaluate characteristics of multi agent systems. These frameworks propose evaluations of agent-oriented system development methodologies based on different categorizations of characteristics related to multi agent systems as well as different characteristics of generic software engineering processes. The focus of this study is to address the problem of developing a framework, to evaluate multi-agent systems development methodologies, that combines both agent-oriented characteristics and generic software engineering characteristics. To address this problem, our objective in this research is to examine some of the existing frameworks for evaluating characteristics of multi agent systems and to propose a more generic framework to describe the characteristics of a multi agent system by considering agent-oriented as well as generic software engineering paradigms. The framework consists of a two-dimensional matrix with twenty eight characteristics. One dimension of the matrix concerns four generic components (model, process, technique and supportive features) related to software development. The other dimension concerns the characteristics of software agents and the generic software engineering characteristics. The proposed framework is evaluated by applying Prometheus and MaSE methodologies, which are considered as prominent and comprehensive AOSE methodologies.

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