Abstract

the software development life cycle process is in continuity and expansion. So that may occur and leads to complex software systems which need to have technologies to realize and understand of large-scale and complex software systems. One of these methods helps to achieve this goal which called agent technology that is compatible and deals with complex software systems characterized by a high degree of distribution. So, a collection of software agents collaborates or competes with each other to achieve single or collective task led to multi-agent. In other hands, the correctness of specifications in the first phase of software development life cycle it is the main factor that led to successful project. The problem is that the specifications are written by informal method may occur misunderstanding and ambiguity. In this research, I will give a solution by doing formal specifications method for GAIA methodology which is one of the methods used in multi-agent systems. This step will enhance the specification based-on Object Constraints Language (OCL).


**Index Terms**

Computer Science  Security

**Keywords**

Agent-Oriented Methodology, Multi-Agent System, GAIA Multi-Agent Method, Formal Method, Formal Specification