A METHOD OF USING ONTOLOGIES IN OODA LOOPS

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The research discusses behavior modeling of the intelligent agent which functions in a competitive environment. To simulate the behavior OODA loop (observation, orientation, decision support, action) is selected. To improve the efficiency of OODA loop the use of the domain ontology is proposed, which operates within the intelligent agent and problem area ontology. The influence of stages of OODA loops on content ontology and vice versa as the content of the course ontology passing phases are given. An interaction between ontology and stages loops OODA is described. The task of planning of intelligent agent in a competitive environment is reduced to the problem of dynamic programming.

There are two main ways to achieve competitive advantage in the implementation of various types of professional activities. The first one is to make their cycles act faster quantitatively. This allows deciding and force competitors to respond to our actions. The other way is to improve the quality of decisions, i.e. make decisions that correspond to a greater extent to the situation than competing solutions.

Improving the quality of their solutions can be achieved in various ways, which include usage of modern formal mathematical methods, automated control systems, decision support systems and expert systems. If you prefer the last one, a modern approach to their construction is used as the core ontology's knowledge base. Therefore, the challenge is to develop methods for the use of ontologies in OODA loops.

It is proposed to use the intelligent system for OODA loop simulation. The ontology is the core of knowledge base in intelligent system. It consists of a domain ontology and ontology of applications. Content ontology directly affects the second and third stages of the OODA cycle, and the structure and content of the ontology depends on the 1st and 2nd stages.

Keywords – OODA loop, observation, orientation, analysis, synthesis, decision support, action, ontology.