Preface

Despite the research on the concept of an agent and agent systems conducted in many global research centres, some of the problems have not found satisfying solutions. It even applies to the terms connected with the definition or the basic properties of an agent.

This monograph presents the concept of agent and agent systems from a formal approach to examples of practical applications. Starting with a certain formal definition of an algorithm (using such terms as a set and partial function), the goal of introducing the agent was defined as a certain paradigm of designing and programming computer systems, specifying its basic properties at the same time (Chap. 2).

In order to form the principles of construction of autonomous agents, a model of the agent was introduced (Chap. 3). Subsequent parts of the monograph (Chap. 5) include several examples of applications of the term agent. Descriptions of different examples of applications of agent systems in such fields as evolution systems, mobile robot systems, artificial intelligence systems are given.

In the author's opinion, the whole material presented in the monograph may constitute an outline of methodology of the design and realization of agent systems based on the *M-agent* architecture oriented on different areas of applications.

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Krakow, Poland, May 2014 Krzysztof Cetnarowicz

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