ABSTRACTS

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PLATO'S DIALECTICS AS THE BASIS OF SOCIETY MANAGEMENT SCIENCE

Necessity of the usage of Plato's dialectics for creating of society management science is substantiated. Opposite to the natural science and other exact sciences foundation (Aristotelian analytics, which deals with eternal immutable objects "without any admixture of human subjectivity" and provides acquisition of objectively true knowledge) Plato's dialectics performs the propaedeutics function towards society management science, which is connected with studying of human activity in its varied forms. Plato's dialectics proceed from the necessity to reach   mutual understanding through dialogues in the process of discussing the problem which must be solved thanks to which an opinion is formed through the conflict of various frequently opposite points of view, we mean not reliable but probably true, verisimilar knowledge.

Key words: *Plato's dialectics, society management, dialogue, mutual understanding, verisimilar knowledge, concept, ontology, support system of communicative actions, multi-agent interaction models.*

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ONTOLOGIES AS SEMANTIC MODELS

The article deals with the experience of semantic ontology-based modelling. It is supposed that ontologies are suitable for representation of both formal and descriptive (i.e. actually semantic) models. As the precondition for a choice of base elements of ontological specifications the cognitive ability to distinguish objects («discrete objects») in the reality and to find connections between objects is postulated. Because the relationship as a set of relations is divided into properties and associations of objects, therefore properties and classes of objects turned out to be modeling primitives for ontologies. Associative relations, elements of operational basis and axioms of a modeled object domain are fixed at definition of special properties of objects. The general plan of ontological models use is analyzed, its organic orientation to integration of diverse knowledge is ascertained and a mechanism of models control is outlined.

Key words: *semantic models, object, property, semantic networks, formal ontology, multimodelling, knowledge integration.*

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DECISION MAKING ON THE BASIS OF CONSENSUS USING MULTI-AGENT TECHNOLOGIES

Increasing of the management efficiency is connected with reaching mutual understanding and consensus in the course of concurrent decision making by persons found in problem situation and taking part in its regulation. Mutual understanding is considered not as points of view similarity but as different points of view gravitation: if a person has opportunity to satisfy another person's need than agreement on providing of appropriate services can be interpreted as mutual understanding achievement between them. According

to this context we offer to build multi-agent situation models which guarantee support of the processes of mutual understanding achievement on the basis of consensus for acceleration and improvement of decision making procedure. The main stages which must be fulfilled on the path to creating of mutual understanding support and consensus means are described.

Key words: decision making, inter-subjective management, regulation of the situation, mutual understanding, consensus, multi-agent situation model, needs and opportunities network.

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SITUATION-DRIVEN DECISION MAKING AND MULTI-AGENT TECHNOLOGY: FINDING SOLUTIONS IN DIALOGUE

The design principles of intelligent systems for situation-driven decision making are proposed based on new theory of result-oriented management and team work. Multi-agent technology is considered as a basic framework for designing autonomous intelligent systems which provide reaction on events, resource allocation, scheduling and optimization, communication with decision makers for coordination of decisions, monitoring and control of plans and re-scheduling in case of growing gap between plan and reality. The key feature of the systems is ability to find consensus between team members for coordinated decisions which provide high productivity and efficiency of enterprises. Future steps in developments are discussed.

Key words: new theory of management, team work, enterprise resources, ontology, multi-agent technology, consensus, real time.

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ONTOLOGIES: CURRENT STATE, SHORT REVIEW

This article makes an attempt to describe the current state with the ontology development. A short review of the newest ontology support tools and standards is given. He actual situation in the ontology development and implementation is described based on the international association of the applied ontologies data. Examination of functional and structural qualities of ontologies is described from the informational system's point of view in different domains. The ontology lifecycle phases are shown.

Key words: ontology, review, lifecycle, standards, informational systems.

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CONCEPTUAL AND PSYCHOLOGICAL ASPECTS OF BUILDING MULTIPLE-VALUED SYSTEMS OF ARTIFICIAL INTELLECT. BRAIN-LIKE CONVERTERS OF INFORMATION

The problems of the conceptual and psychological aspects of mathematic modeling of AFP-structures are being examined on the bases of theoretical reasons having done by the authors in their previous research. AFP-structures are used as universal functional converters of space type on the basis of decomposition of multiple-valued structures for discretely- analog converters and digital subblocks, such as matrix selector and commutator.

Key words: logics, algebra of finite predicates, multiple-valued structures, AFP-structures.