INTELLECTUAL SYSTEMS CREATION FOR MINING ENTERPRISES ACTIVITY ECOLOGIZATION

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Mining enterprises activity ecologization consists of dust suppression and noise effect minimization to limited admissible values during open exploitation of granite with its further processing into road metal.

Human role in modern mining enterprises management systems is determinative. He creates goals of system and alternative ways of its development, determines real structure of system and forms its behavior. The most difficult and responsible stage of human's activity in management systems and the major factor of any direction is decision making. In process of looking for the best decision it is necessary to use maximum relevant information (data and knowledge bases). But decision making person often doesn't have much time, enough information and knowledge about object and situation in which it functions. The most important moments in decision making is goals determination, forming decision making problems and choice of adequate alternative. The choice is made on base of advantages of decision making person.

The task of decision making may be formulated in next way: there is a lot of decisions; realization of each alternative results in certain consequences; analysis and estimation of results by effectiveness (criteria) characterizes alternatives. Having considered advantages of decision making person, it is necessary to build model of choice the best alternative.

For successful realization of decision making tasks it is necessary lots of procedures connected with preparation of information, important for reasonable decision making. All routine operations should be given to computer for more intellectual decision making. Specialists won't be distracted from looking for, sorting, data and models estimation, but use worked out information adapted to automatically search with key words and assessed and renewed information.

To make search easier and except with possibility of not getting important facts, that often are difficult to be characterized, automated databanks are used. They have developed memory, central processor with some outside devices, programmer support for searching, renewing or correcting of data, their representation, reliability and fullness checking, estimating, and treatment in order to get new data, or determination of connection between any data sets.

The base of forming of automated databanks is choice of proper data format, i.e. choice of ranking of data representation, key words that help to search facts.

From conception of knowledge the intellectual system may be formulated as system based on knowledge in problem field. It allows system to choose (activate) these or those programs, saved in memory, or even synthesize new necessary programs from some micro blocks saved in knowledge base of system. Intellectual system always provides for person presence to cooperate with it.

This system must be opened principally to support and increase intellectual capabilities of decision making person by logical mathematical thinking apparatus and by reverse influence of person on computer system. This means specifying of goal of system function, correcting results and strategies, accumulation of new knowledge, changing structure of data in automated databanks. Intellectual system is used not for exception of person from decision making, but for transition of all routine, not creative, functions from person to automated system.

Really, search and output of any information from "library" or "guide", processing of this information by indicated algorithm and choice of this algorithm in accordance with problem demands and system possibilities; approximation, smoothing, interpolation or extrapolation of functions, previous estimation, - all these problems are successfully solved by automated system without person involve. Operator needs only to bring in certain criteria, limits, fields of use, function conditions etc. There are two models of data representation: intentional, when schemes of connection between data attributes are depicted; extensional, when description of concrete objects and events is shown.

Organized in a proper way data and knowledge, and also programs for search, changing, treatment and representation of information, according to tasks and aims of intellectual system, essentially simplify work of decision making person and allow person to concentrate on those aspects of decision making that are more inherent him and that even a powerful computer is not able to decide, or needs for this purpose too much time, that does not allow to solve problem of decision making in reality.

It is worth comparing possibilities of artificial intellectuality and intellectuality of a person of appropriate competence. This comparison is shown in tables 1 and 2.

Table 1. Comparing of artificial competence with person competence

Person competence	*Artificial competence*
Unsteady	Constant (steady)
Difficultly passed	Easily passed
Difficultly documented	Easily documented
Unforeseeable	Foreseeable
Requires large charges	Requires not large charges

Table 2. Comparing of artificial competence with person competence

Person competence	*Artificial competence*
Creative	Programmed
Adaptable	Requires prompts
Uses perception of senses	Uses symbol knowledge input
Wide for a scope	Narrowly directed
Uses popular knowledge	Uses specialized knowledge