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ENVIRONMENTAL PROTECTION MANAGEMENT

The most difficult and responsible stage of environmental protection 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 are 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.

The logical choice of criteria at decision-making means selection of

such base variable value in which function of belonging achieves maximal value. Thus there is a problem of determination of belonging of those or other objects to the noted unclear sets.

For example:

1. Certain value of BOD is normal for water dumping into pond, but at the same time it does not allow to use such water for drinking.

2. Radiation level which is normal for the district of location AES is exceeded for other locality.

3. Air temperature in summer in Ukraine for Ukrainians is high, and for habitants of the African countries is temperate.

4. Full garbage bucket in apartment – is too much garbage. The same amount of garbage on dump – is little.

However, a base variable can achieve the maximal value of belonging in a few points of the top, this criterion does not guarantee the only decision. To show the problem of transformation of unclear set in scalar, it is important to consider a few graphs of functions of belonging. A function of belonging – is the dependence of degree of element belonging to unclear set from a base variable and from used rules.

Heuristic and traditional algorithmic methods of decision-making are used at presence of unclear, incomplete information about the environment state. Heuristic methods are based on empiric rules or simplifications that limit search of decisions effectively.

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 microblocks 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 data-banks. 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.

Organized in a proper way data and knowledge, and also programs for search, changing, treatment and representation of information about the environment state, according to tasks and aims of intellectual environmental protection 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.

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АККУМУЛЯЦИЯ ТЯЖЕЛЫХ МЕТАЛЛОВ POTENTILLA ANSERINA L. В ЗОНЕ ТЕХНОГЕННОГО ВЛИЯНИЯ

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