МИНОБРНАУКИ РОССИИ

ОПТИКО-ЭЛЕКТРОННЫЕ ПРИБОРЫ И УСТРОЙСТВА В СИСТЕМАХ РАСПОЗНАВАНИЯ ОБРАЗОВ И ОБРАБОТКИ ИЗОБРАЖЕНИЙ

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THE APPLICATION AREAS OF INTELLIGENT SYSTEMS

The paper explores the field of intelligent systems. The structure, types, application and classification of the intelligent system are studied. The intelligent system is a technical or software system that is capable of solving the problems which are specific and creative in a particular subject area, so that knowledge is stored in the memory of such systems.

Intelligent Information System (IIS) is a set of software, language and logic tools to support the human activities for the key task implementation and to search the information in the natural language in a dialogue mode.

Intelligent systems in decision-making technologies are intelligent information-computing systems that are capable to solve the problems without human involvement [1].

The structure of the intelligent system includes three main units:
• Knowledge base.
• Solution acquisition mechanism.
• Intelligent interface.

The following aspects are used to ensure the functioning of the intelligent system:
• Mathematical;
• Linguistic;

• Information;
• Semantic;
• Software and etc.

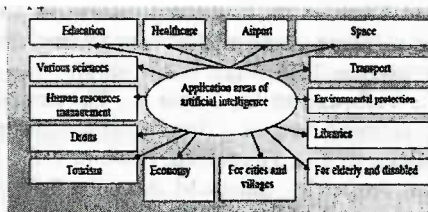The application areas of intelligent system are provided in figure 1.

Fig. 1. Application areas of artificial intelligence

Analyzes various features of the program's decision-making quality. Despite numerous studies, a comprehensive criterion for software quality control is still only available at an informal level. The quality of the program is defined to be a manageable indicator. The quality features of intellectual systems are of particular importance. The action plan is checked through the Boolean functions for which the graph of cause and effect relationships are drawn and presented in logic diagrams. A plan can be created at any stage of the software life cycle [2].

The types of intelligent systems are provided in figure 2.

Fig. 2. Types of intelligent systems

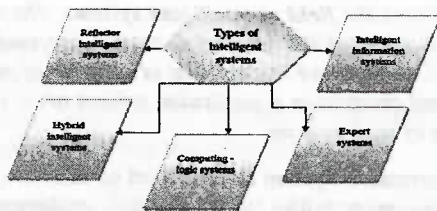There are certain tools that can be used to create intelligent systems. These technologies may include:
• Rule-based explanations.
• Decision trees.
• Bayesian network.
• Fuzzy logic and soft computing.
• Inductive logic programming [3].

Examples of artificial intelligence systems are provided in table.

The largest research centers in the field of artificial intelligence are provided in table.

Examples of artificial intelligence systems

System	Artificial Intelligence field	Definition
ROBIN	Strategic Games	Intelligent programs for chess-type games
ALICE	Information retrieval engines	Search for anthology or deduction database
PEACE	Problem solving	Solving problems for synthesis and electro-scheme analysis
RITA	Knowledge Presentation	Modeling of Concepts development (Improvement)
MUSCADET	Proof of Theorems	Proof of 'Pure' Mathematics theorems
ARGOS-II	Robotics Robototexnika	Robot simulation of decision-making

When reviewing the intellectual information systems in terms of problem solving, they may include the management systems and auxiliary systems, computer linguistic systems, recognition systems, game systems and intellectual information systems. Each of them is important. The intelligence systems themselves may also have some gaps. Strong intelligence systems are required to overcome these gaps. Intelligence information systems in the economy perform effective processing of big data sets providing information support to the managers of organizations for decision-making [3]. In future, the development of new effective systems and improvement of existing ones will benefit the economy even more.

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МОДЕЛИРОВАНИЕ ЗАДАЧИ ВЫКЛАДКИ ТОВАРОВ С ПОМОЩЬЮ КВАДРОКОПТЕРОВ

В статье моделируется задача выкладки товаров, осуществляемой в магазине, с помощью квадрокоптеров. Автор предлагает данные для построения