



## **ECOLOGICAL INFORMATION PROCESSING TECHNOLOGIES AND INFORMATION SECURITY**

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**Abstract:** *Ecological information system is a set of technical, software and organizational measures designed to automate information processes in professional activities. An automated information system provides for the introduction of certain information technologies for data processing in the course of professional activities. It is necessary to create a comprehensive information system based on the use of modern information technologies for the preparation, receipt, processing, transmission, and accounting, control of ecological information to improve the efficiency and quality of ecological management, as well as the analysis of system performance. The goal of the research is to “automate the ecological data processing system.*

**Key words:** *ecological information, data processing, information system, information security, data model.*

### **Introduction**

To achieve this goal, the following tasks are required:

- Defining the purpose of the automated information processing system;
- Review the requirements and structure of economic systems of information processing;
- Determining the overall structure of the facility;
- Creating a database;
- Describe the data model.

The purpose of an automated information processing system [1]. When considering the automation of control systems, we must first define automation [2], that is, identify the objects of automation. To identify the objects [3] of automation, it is necessary to analyze the operation of the enterprise. The analysis should result in a description of the data processing process in the [4] management system, which identifies the elements of the process. An analysis of the information processing [5] process in solving any management task, which [6, 7] involves the implementation of a clear mechanism for processing the information entered into a particular result and is carried out individually by officials. Allows you to distinguish between three types of information [8, 9]. Human daily labor activity is associated with the reception and collection of information about the external environment, the identification [10, 11] and processing of information necessary to solve various problems. Therefore, both the above set of actions, the means of their implementation, the tools serve as the basis for the creation of information systems [12] (IS).

The main purpose of information systems is to provide users with information [13] relevant to the relevant field. As a result of the creation of computers [14], it became possible to create automated information systems (AIS).



Currently, the development of AIS is carried out in two directions. The first direction is the creation of information systems based on standalone files. The scope of such IS is limited and has a simple structure. They consist of a set of programs that process a set of standalone files and output documents. Such systems have the following disadvantages:

- duplication of data;
- complexity of file management;
- difficulty working with files;
- Data dependence of programs, etc.

### **Main part**

The second direction is to create a database. Database-based IS serves a set of users, and the systems listed above are very common.

The activities of the AIS are related to the collection and processing of information. The information entered into the system and provided to the user is formed in the form of documents. For this reason, the document is a material object and consists of a set of information, executed in a certain order. While the source of information in AIS is people and technical means, as a consumer, different users can be divided into three groups: system administration, programmers, and end users. Users can apply to the AIS on request. The request is a seasonal message, which specifies the terms of the search for relevant information and the tasks to be performed on them. Acceptance and input of requirements, performance of the specified actions, preparation of the corresponding data and presentation to the user in the form of the document are the main stages of any AIS activity. Today, AISs are used in various areas of human activity, for example, in the management of sectors of the economy, in the management of research, in the design of education. One of the following two methods is used: Autonomous use of AIS. In this case, the AIS are not part of another system, but operate independently. Examples of this are, for example, aircraft and railway ticket sales systems ("Sirena", "Express"), information retrieval systems that prepare the relevant documents on demand, and others. Use of AIS as part of a high-level management system. The generated output data is also used in the operation of other elements of the system. Examples of such AISs are, for example, information-training systems, automated design systems, automated control systems. The Documentary Information Retrieval System (DISS) stores and processes documented data. An example is the automated system of library activities.

The fact graphic information retrieval system (FIRS) is used to store and process digital and textual data. The main part of the established AIS is an example of a system of the FIRS type. According to the method of data processing, AISs are divided into two parts: the information reference system (IRS) and the automated data processing system (ADPS).

### *Principles of organization of ecological information processing database*

Environmental information is a set of modified and processed data that reflects the status and course of environmental processes.

The diversity of information requirements, the growing range of issues, and so on, place a number of demands on modern IS.

Such requirements include:

Accuracy of ecological information processing database. It is known that the database forms an information model of the relevant industry. For this reason, the information stored in the DB should fully and accurately express the status, characteristics of the objects and the relationships between them. Otherwise, an established DB can be dangerous and damaging.



Speed and productivity. The speed of the system is determined by the response time to the set requirement. It is necessary to take into account not only the speed of the computer, but also the location of data, search methods, the complexity of the demand and other scientists. The efficiency of the system is determined by the amount of requirements fulfilled per unit of time.

Simplicity and ease of use of the database. This requirement is set by all users of the system. That's why it's important to create easy, simple, and convenient ways to use the database.

Data protection. The system must ensure the protection of information and programs stored in the database from external influences, external users [15].

### **Conclusion**

This study is a set of technical, software and organizational measures aimed at automating information processes in environmental information systems. The automated information system of data processing in the process of research activity involves the introduction of certain information technologies. The aim of the study is to create an integrated information system based on the use of modern information technologies to improve the efficiency and quality of environmental activities of the system of preparation, reception, processing, transmission and registration of environmental information.

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