

УДК 004:372.8

М. Янфай, У. Обінна, М. Ньярадзаї, Р. Золотий

(Тернопільський національний технічний університет імені Івана Пулюя, Україна)

МЕТОД ПОСЛІДОВНИХ ПОСТУПОК ДЛЯ ПОКРАЩЕННЯ РОБОТИ МЕРЕЖІ

UDC 004:372.8

M. Yanfai, U. Obinna, M. Niaradzai, R. Zoloty

CONSEQUENTIAL PROCEDURE FOR IMPROVING NETWORK OPERATION

Many decision-making tasks arising in the production, design of computer systems, economics and other areas of human activity can be reduced to building an appropriate mathematical model, calculating the objective function that evaluates the process of system operation, and finding its optimal (to determine can be considered the minimum) value.

As a rule, the constructed target functions are quite complex and can have a number of features, due to which their minimization is associated with significant computational difficulties. These features first of all include the property of multi-extremity.

Significant computational difficulties associated with minimization multi-extreme and other types of functions by standard methods, as well as the unconditional importance of these classes of problems for various practical applications (problems of optimal choice of technical, economic, environmental and other systems) makes very important the problem of creating an optimization method that can effectively solve these problems.

The most well-known methods for solving multicriteria optimization problems are:

- method of uniform optimization;
- the method of fair compromise;
- method of the main criterion;
- the method of successive actions;
- ideal point method;
- method of collapsing criteria.

Possible ways to solve the problems of multi-criteria optimization may be the use of different convolutions and methods of normalization. Also, one of the possible solutions to multicriteria optimization problems is to use evolutionary (genetic) algorithms.

Input testing from the literature was used when testing the subsystem. As a result, the structure of the studied network was optimized, which ensured its more efficient operation.

The structure of the subsystem for solving multicriteria optimization problems by the method of successive assignments has been developed, which includes the input data subsystem, the calculation subsystem, the data output subsystem and the interface.

A model for optimizing the structure of a computer network has been built, which may include such criteria as cost, reliability, bandwidth and failure rate with appropriate restrictions.

Література.

1. С.А.Исаев. Решение многокритериальных задач. Интернет-ресурс. <http://bspu.ab.ru/Docs/~saisa/ga/ideal.html>.
2. Розділ „Математика\Optimization Toolbox\l. Интернет-ресурс. <http://www.matlab.ru/optimiz/index.asp>.
3. Е.В. Никульчев. Разработка многокритериальных систем управления динамическими объектами. Интернет-ресурс <http://do.sssu.ru/ito2001/mater/mgapi.html>.