СЕКЦІЯ 1. ІНФОРМАЦІЙНІ ТА УПРАВЛЯЮЧІ СИСТЕМИ

RESEARCH AND DEVELOPMENT OF MATHEMATICAL AND SOFTWARE SOLUTIONS OF THE INFORMATION SYSTEM OF SITUATIONAL ENTERPRISE MANAGEMENT

Drach T.O., Goloskokov O.E.
National Technical University
«Kharkiv Polytechnic Institute»,
Kharkiv

In the work as an object of research is considered an IT-enterprise, which represents the domestic software industry in the world market.

The first stage is reduced to the transformation of the detailed information into aggregates of data that allows to analyze the IT-enterprise in terms of a small number of relevant aggregate variables that include profit, costs, orders, the number of employees in the corporation, the amount of investment, the amount of technical support, under conditions for which the initial data are known with varying degrees of detail.

The second stage is the identification of the state of the IT-enterprise. It consists in determining from the input and output values of such a situation from a particular class of situations, in which the real system under investigation is equivalent. In accordance with this, it is necessary to define a class of situations models, among which the most suitable (current) model of the situation will be chosen [1]. That is, it is necessary to conduct a comprehensive study of the state of the object, which allows to get a full understanding of the estimated IT-enterprise not only at the time of the assessment, but also in the retrospective and forecast periods.

It has been established that the most effective approach to the management of an IT-enterprise that has an established, established large-scale production is a situational fuzzy approach.

Since it is necessary to process a large amount of information, it is suggested to use the k-means clustering algorithm in order to distribute fuzzy situations.

Data aggregation is performed. Namely, information was converted into data aggregates, which allowed the IT-enterprise to be analyzed in terms of a small number of relevant aggregate variables.

The state of the IT-enterprise was identified. Namely, it is determined by the input and output values of such situations from a certain class of situations, in which the real system under investigation is equivalent. An example has been calculated with which you can conduct a comprehensive study of the state of the object, which allows you to get a full understanding of the estimated IT-enterprise not only at the time of the assessment, but also in the retrospective and forecast periods.

Then, using the results obtained, we propose the solution of the control problem.

References:
1 Поспелов Д.А. Принятие решений при нечетких основаниях. Универсальная шкала / Д.А.Поспелов. – М. : Изд. АН СССР. Техн. кибернетика. – 1977. – 132 с.