SYNTHESIS TASK OF INFORMATION SYSTEM ARCHITECTURE DESCRIPTION

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The purpose of the article is the development of basic definitions and models that allow us formally to describe the task of the synthesis of the information system architecture description as a problem of finding the compromise between Providers and Users of IT-services during the initiation and planning IT project to create a new information system.

The article solves the problem of developing mathematical models describing the task of the rational synthesis of the information system functional structure.

The object of the study in this article are methodologies, architectural frameworks, and the information technology design of the information systems aimed at the analysis of the requirements to the information systems and the synthesis of the functional structures of these systems on this analysis.

The mathematical models, which describe the synthesis task of the information system architecture description, are the subject of the study in this article.

In this article, for the first time, were obtained the following results:

- the mathematical model synthesis of information system architecture description, optimal from the point of view of the User of IT-services. This model, unlike existing ones, takes into account the User's requirements and limits the IT project to the design of the system;

- the mathematical model synthesis of information system architecture description, which is optimal from the point of view of the Provider of IT-services. It, unlike existing ones, takes into account the Provider's requirements and limits IT project to the design of the system;

- the formal description of the interrelations of Provider and User of IT-services using a game-theoretic model.

The practical value of this article lies in defining the main features of the approach to automating the process of the synthesis task of architecture of the information system under the design with the help of a new information technology introduction.

All scientific and practical results are obtained by the author individually.

Using the game-theoretic models to address the task of the synthesis of the information system architecture description can provide significant benefits over existing approaches to solve this task. It is due to the use of mixed strategies by which the Provider offers the User IT-services instead of typical functional modules of the created information system, some IT-services that make up the functional modules of the system being fully adapted to the requirements of the User. Thus, it is possible to form at the formal level the information system architecture description as a set of artifacts that can then be used as the process specification and the automated database and software synthesis of the information system under the design.

Keywords – information system, architecture, requirement, IT-project, IT-accommodation.