MODERN INFORMATIZATION PROBLEMS
IN THE TECHNOLOGICAL AND
TELECOMMUNICATION SYSTEMS
ANALYSIS AND SYNTHESIS

Proceedings of the XVIII-th
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Collected papers summarizing the results of the XVIII-th International Open Science Conference "Modern informatization problems in the technological and telecommunication systems analysis and synthesis", held in November 2012 - January 2013. It contains information within the following areas: analysis and synthesis of complex systems; telecommunication systems and applications; automatic and computer-aided design of power grids, electro-mechanical and technological systems; information systems and their applications.

Data gathered within collected papers may be useful to researchers and engineering technicians, whose work involves various aspects of modern society informatization, as well as to postgraduates and students studying subjects related to informatics and computer engineering.

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Preface

Dear Colleagues!

Present proceedings were published to summarize the results of the XVIII International Open Conference "Modern informatization problems". The conference was held through the joint efforts of Science Book Publishing House (USA), Voronezh State Technical University, Baku State University (Azerbaijan), Vologda State Technical University, Lipetsk State Technical University, Don State Technical University (Rostov-on-Don), and the Academy of Federal Security Guard Service of the Russian Federation (Orel), in November 2012 – January 2013.

It was decided to hold three thematically differentiated conferences within the main one - «Modern informatization problems in economics and safety», «Modern informatization problems in modeling and social technologies», «Modern informatization problems in the technological and telecommunication systems analysis and synthesis».

The conference was held to encourage exchange of experience between leading experts in utilization of information technologies in various spheres of science, engineering, and education. The conference followed the traditions established by its predecessors.

Representatives of leading research centers and educational institutions from some countries introduced the audience to the results of their research, which are available not only in this collected works, but on http://www.sbook.ru/spi.

Present book contain conference proceedings within the following areas:

- analysis and synthesis of complex systems;
- telecommunication systems and applications;
- automatic and computer-aided design of power grids, electromechanical and technological systems; information systems and their applications.

Organizing Committee Chair,
Editor in Chief
Dr. Sci., Prof. O.Ya. Kravets
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THE COMPLEXITY of modern telecommunication systems is rapidly increasing. A wide variety of services has to be transported and elaborate network management is needed. Such complex systems require a combination of hardware and embedded software components in order to deliver the required functionalities at the desired performance level. Application studies and detailed problem and sensitivity analysis have guided the definition and ordering of the individual phases in the flow. Several steps in our methodology are supported by prototype tools which are not elaborated in this paper however (see [3], [4], [15], and [22]). This paper only deals with the dynamic memory management and physical memory management in network applications. Synthesis of the time optimal linear control system based on the maximum principle is a widely accepted problem in the modern control theory. However, the procedure of synergistic synthesis does not have such formalization.

17. Zakovorotny, V.L., Vinokurova, I.A. Mathematical modeling of the dynamic cutting system taking into account the irreversible transformation in the area of cutting. Modern informatization problems in the technological and telecommunication systems analysis and synthesis Proceedings of the XXII-th International Open Science Conference.