საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY
ГРУЗИНСКИЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

ISSN 1512-3979

შ რ ო მ ე ბ ი

მართვის ავტომატიზებული სისტემები

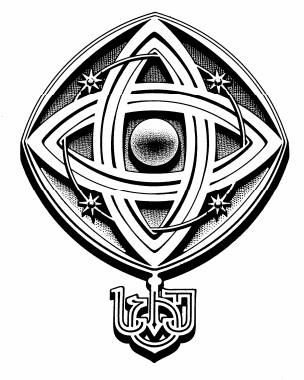
TRANSACTIONS

AUTOMATED CONTROL SYSTEMS

Т Р У Д Ы

АВТОМАТИЗИРОВАННЫЕ СИСТЕМЫ УПРАВЛЕНИЯ

№ 2(5)



თბილისი-TBILISI-ТБИЛИСИ
2008

ISSN 1512-3979

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Gogichaisvili Georg, Surguladze Gia, Turkia Ekaterine,
Topuria Nino
Georgian Technical University

Summary

Development and constructions of the Business-Project integrated Automation Management System on the basis of modern information technologies is considered. Questions of the composite use and maintenance of compatibility of different modern methods and Software tools for designing and automation of a control system by business - projects are offered . As an example, the models of business-project research under the basic typical factors is developed , that in systems Ms Excel, BPMN and XML are realized. The transformation of results are in systems MsSQL Server and Java NetBeans shown.

RESEARCH OF PROPERTIES D-AND A-OPTIMALITY CLOSE TO ROTATABLE TWELVPOINT DESIGNS OF THE THIRD ORDER FOR TWO VARIABLES AT PRESENCE OF ERRORS OF EXPERIMENT

Zedginidze Irakli, Beraya Nino
Georgian Technical University

Summary

In the given article the questions connected with studying of properties close to rotatable twelvpoint of designs of the third order for two variable in conditions of errors of experiment are considered. Researches were spent for various ranges of the errors most typical for measuring devices. Such widely known properties of designs connected with accuracy of an estimation of factors regression of model as D-and A-optimality are studied. In details on each of the investigated properties for two sizes of squares the minimal and maximal values of criteria, and also averages the arithmetic and standard deviations describing disorder are received. The degree of deterioration of properties of considered economic designs in errors of the third order is analysed at increase.

THE PROBLEM OF OPTIMAL DESIGNING OF NONLINEAR ELECTRONIC CIRCUITS FROM POINT OF VIEW OF MULTICRITERIA OPTIMIZATION

Jibladze Nodar, Gachechiladze L., Imedadze T., Kutsiava V.
Georgian Technical University

Summary

Based on technology of mathematic model working-out, the task of optimal designing of the concrete nonlinear electronic circuit is brought to a mathematical programming of multicriteria optimization. With the aim to find circuit's optimal parameters we, based on the sample of concrete nonlinear circuit, propose both mathematical and program software used for computations and results' analysis.

SOLUTION OF GEOMETRICAL PROGRAMMING PROBLEMS BY THE GRAVITATION CENTERS METHOD

Jibladze Nodar, Imedadze Teimuraz, Donadze Mikheil
Georgian Technical University,
Batumi State University

Summary

In the article the method of centres of gravity for solving complex optimization problems of geometrical programming is offered. The method allows to determine a global extremum for a multimodal multivariable function with the exactness acceptable in the engineering practice. The problem of optimal design of a heat-exchange apparatus of an atomic power station is solved.

IMAGE PREPROCESSING BY USING OF BACKGROUND STRUCTURES SUMMARY

Todua Tea
Georgian Technical University

Summary

The method of the image analysis by means of background structures on an example of the Georgian printed symbols is considered. In the work analysis with background structures is carried out at a stage of preliminary computer preprocessing. The first stage of the analysis of image by means of background structures is procedure of smoothing, which provides reduction of gradation for the given image at edges of a raster and distortion in the image; Background structures are considered as an informative part of image. Description of the image by means of background structures enables reception of standard descriptions in a minimum quantity.

FOR THE POIN OF CONSTRUCTIONS OF MONOTONOUS SYSTEM ON THE SET OF A PAIRS OF CONNECTIONS

Mgeladze A.P
Georgian Technical University

Summary

In the article is shown the identity of the formulation value of connections π nearing graph on the one hand and constructed in parallel the power of connections of monotonous systems on the set of a pairs of connections on the other.

PROBLEM OF SYNCHRONIZATION AND PRESERVATION LAWS

Sesadze Valida, Kekenadze Vladimer, Tshikadze Gela, Maglakelidze Nana
Georgian Technical University

Summary

There is considered the problem of synchronisation on the basis of symmetry principles in the article. For the decision of this problem E.Neter's known theorem according to which defined Symmetry systems correspond certain laws of preservation is used. The Problem is reduced to the decision of a principle of the Maximum by symmetry principles.

PARETO-OPTIMAL ASPECTS OF EFFICIENT CONTROL INDUSTRIAL-COOPERATIVE SYSTEMS

Narimanashvili Nodar, Labadze Lali, Chaxidze Tamta
Georgian Technical University

Summary

In the article the issues of an urgency and prospect of application of methods multi-objective optimization in different areas of economy and techniques are considered. Also pareto-optimal aspects of control industrial-cooperative systems and the analysis of the problems connected to it is bead.

ABOUT ONE MODEL OF MANAGEMENT OF PROCESSES OF MARKETING ON THE BASIS OF COLURED PETRI NETS

Surguladze Gia, Turkia Ekaterina, Okhanashvili Maia, Surguladze Giorgi
Georgian Technical University

Summary

Questions of modelling and research marketing business-processes, in particular for definition of requirement of production, operational planning of manufacture, process of manufacture and realization of finished goods, on the basis of time coloured Petri nets (CPN) are stated. The cores of functions and opportunities of the CPN-tool for simulation dynamic business-processes are considered. The example of one CPN-model of marketing for a product company with the concept "Market-Manufacture-Realization" is offered.

DISTRIBUTED MACRONET OF KNOWLEDGE BASE'S

Samkharadze Roman, Kurdadze Marina, Gachechiladze L.
Georgian Technical University

Summary

The distributed complex network on the basis of which essentially new structure of the knowledge base is constructed is offered. It's essence presents macrotops of a network the database and the machine of a logic conclusion settles down, and on arches connecting properties settle down. Such structure excludes transitions from the machine of a logic conclusion in a database. So it is possible to execute effective processing of the information, modelling of complex processes and etc.

DIALOGUE SYSTEM OF OPTIMUM DESIGNING OF ELECTRONIC SCHEMES

Jibladze Nodar - Georgian Technical University
Donadze Mikheil - Batumi State University

Summary

In the article the architecture of the software of dialogue system of optimum designing of electronic schemes which is developed on the basis of general system to principles of creation of systems of the automated designing is considered. The specified dialogue system of optimum designing of electronic schemes is one of making subsystems of the automated designing products of electronic technics.

COMPUTER MEANS FOR SUPPORT OF AUDIO AND VIDEO OF TECHNOLOGIES

Gabedava Omar
Georgian Technical University

Summary

Use of multimedia systems of computer means providing sound and videotechnologies is considered. The list of the basic means by means of which there is a realization of the specified technologies is given. Use of the above-stated technologies actually at designing modern management information systems.

MAIN PRINCIPLES OF SECURITY INFORMATIONAL SAFETY OF BANK SYSTEM

Shonia Otar, Shonia Akaki, Odisharia Korneli, Tsomaia Nino
Georgian Technical University

Summary

The article concerns to all levels of danger sources of bank system information structures, basic needs of protection against them and formulated conception of complex safety for the bank objects as well. Here is done the analysis of an existing situation of the information safety in the Georgian bank system nowadays.

MODEL OF INFORMATION SAFETY OF AUTOMATED BANK SYSTEM

Shonia Otar, Shonia Mamuka, Tsinaridze Giorgi
Technical University of Georgia

Summary

The article concerns to the possibility of information safety of automated bank system under the limited terms. The article represents the model of information safety resisting the growth of risk of important information distortion under the conditions of given (limited) resources.

THE METHODS OF AUTOMATIC REGULATE PULSATE OF COMPUTER TRAFIC

Natroshvili Otar, Natroshvili Nino
Georgian Technical University

Summary

The article considers optimal methods of control computer trafic. Propose new approachs for priority control of trafic. The article scheme of form manage row of pakets.

CLASSIFICATION OF CORPORATIVE INFORMATION SYSTEMS

Tevdoradze Medea, Gedevanishvili Marina, Gogoladze Sophiko
Georgian Technical University

Summary

In the give article is discussed question of classification of corporative information systems. In this connection there are characterizes levels of management corporation, information systems, which are used for management in corporation, and their purpose. There is given classification in which are mark out Executive Support Systems (ESS) for strategic level; Management Information Systems (MIS) and Decision Support Systems (DSS) for managerial level; Knowledge Work Systems (KWS) and Office Automation Systems (OAS) for knowledge level; Transaction Processing Systems (TPS) – for exploitation level.

IMPLEMENTATION OF STRATEGY OF INFORMATION TECHNOLOGIES' DEVELOPMENT IN BANKING

Tevdoradze Medea, Gedevanishvili Marina, Gogoladze Sophiko,
Buchukuri Mariam
Georgian Technical University

Summary

There are discussed questions of strategy information technologies (IT) implementation and development in bank. In this connection it is given definition of IT in bank, it is discussed relation between IT' and banking strategies and their common tendencies. There is characterized essence of strategy of IT implementation into banking business. Are described main basic components of informatization process. Main tendencies of IT development are given. Economical aspect of IT are discusses, among of them: management of investments into IT, planning of budget, distribution of expenses, comparative, structural, trend analysis of expenses and management of valuable of IT.

MODEL OF MANAGEMENT OF THE BANK STAFF AND CREDIT ORGANISATION STAFF

Shonia Otar, Nareshelashvili Gulbaat, Arkhosashvili Zviad,
Turashvili Irakli, Dzneladze Giorgi
Georgian Technical University

Summary

The article concerns that efficiency of functioning of the credit and any other organizations depends on the management of its governing body as well as its staff. Here is represented the conception of motivated management of the staff in modern environment on the basis of information safety requirements as well.

GRAPHICAL PROBLEMS OF ENGINEERING GEOMETRY AND THEIR SOLUTION BY THE USE OF COMPUTER

Shavgulidze Anzor, Shengelia Giorgi, Kvinikadze Zurab
Georgian Technikal University

Summary

One of the most actual topic of graphic tasks of engineering geometry is the simplification of its solution or in other words reduction of volume of graphic operations. Besides today it is very important to decline the use of old and rutine means (ruler, divider etc.) for solution of this task and to insert computer means in this process. Last consideration is successfully realized in practice and as an example we can name AutoCAD – the powerful system of automatized projecting. It is known that one command of "AutoCAD" units simultaneously several graphic operations and construction task takes into account fixation of diven data and result. Our aim is exactly the restoration of existing process between given data and result and respectively the considerable execution of every operation. Our aim is the filling of theoretically disemboweled task with the description of the process from given data to the result. Of course we take into account the unlimited possibilities of AutoCAD program support, but we think that differentiation of integrated operations is the indispensable condition of the penetration into task contest and denial of this fact is inadmissible. Given work is devoted to the solving of this problem.

PROBLEMS OF SHADOW'S CONSTRUCTION ON THE MONGE PLOT AND IN AXONOMETRY AND THEIR SOLUTION BY USING THE COMPUTER

Shavgulidze Anzor, Shengelia George, Kvinikadze Zurab
Georgian Technikal University

Summary

Consideration of methodological questions of solution of engineering geometry problems, when the leading role in the solution of these tasks is given to the use of computer technique, was started by us in the article: "Graphical problems of engineering geometry and their solution by the using the computer" (A. Shavgulidze, G. Shengelia, Z. Kvinikadze – Journal "Mas", N2(5), Tbilisi, 2008). This article is the continuation of above mentioned article. While general tasks of engineering geometry are not considered in it, but examples of spreading of our idea by the architectural drawings of specific field are shown here. In particular, now the attention is paid to methodology of shadow's construction on the Monge plot and in axonometry.

AUTOMATED SYSTEM OF CITY GARBAGE DISPOSING MANAGMENT

Chachanidze Guram, Nanobashvili Ketevan, Takashvili Valeri
Georgian Technical University

Summary

Managing municipal services of any city is gradually becoming rather problematic owing to the difficulty of different kinds of the service processes currently happeed in the field. Obviously, for the municipal services to function properly it is necessary to implement the newest methods of management not imaginable without information and computer technologies. The basic circle of the city municipal service is public services and amenities, the sphere which is gradually becoming the main resource of the city economy. The great share of the income (50%-70%) are gained from the expenses of these income resources as the taxes on water supply, disposing of trash, heating and energy supplies, business areas, etc are concentrated here. Therefore, the problem of increasing the efficiency of the management of the city public services and amenities appears to be the first in a row. Thus, the attention should be focused on this direction to elaborate the methodology of the complex analyses of the city population living level. The basic goal of the work is to create the automated system to deal with the landfills originated owing to the garbage coming from the city residents and the industrial waste coming from the city offices, this is one of the functions of Tbilisi public services and amenities. The system is based on the statistic analyses and the adequate mathematic model.The mathematic model helps us to distinguish the kind and amount of trash stored in the landfills: plastic, paper, carton, cloth, mixed stuff, biological waste, etc. and gives the topographic picture of its location. Then the automated system in the interactive regime gives us recommendations on either burning the trash or recycling it: construction materials, paper, steel, gas, etc.

EFFECTIVE MANAGEMENT OF BUSINESS IN THE CREDIT ORGANIZATIONS

Petriashvili Lili, Kotrikadze Kakhaber
Georgian Technical University

Summary

In clause on an example, TBC Bank financial planning and management of establishments in the automated mode is presented. It is applied BPM (Business Performance Management) model of efficient control by business therefore to the head of the organization is enabled, according to the received results, effectively to operate the business-object and to prevent expected risk.

PROBLEM OF OPTIMUM CONTROL OF ACTIVES OF COMMERCIAL BANK

Narimanashvili Nodar, Labadze Lali, Chaxidze Tamta
Georgian Technical University

Summary

There is described an urgency and prospect of some creterial optimal methods in economic and thchnival spheres . It is developed model of optimum control by actives commercial bank, and also the mathematical model of a problem some creterial optimization, structure of actives commercial bank is developed. The algorithm of program realizations of a method variouscriteria optimization of structure of actives of commercial bank on the basis of interactive process corelations between PGD and developed programms to means optimization modeling is developed.

THE ORIGINALITY OF INFLATIONAL PROCESSES IN GEORGIA

Katsiashvili Tsitsino
Georgian Technical University

Summary

This work is dedicated to the originality of inflation processes research. There is stated the issue of what is the inflation and what are the directions of overcoming it. In this reserch are summarized the practical and the theoritical tools of solving this problem. Today Georgia is in the process of working out the antyinflation politics which is caused, by the transitional economic peculiarities. Is going on the improvement perfection of antyinflation forms and investigation of the newest methods. In the conditions of the present situation in Georgia the moderate (simple) inflation is achievable. It is necessary for the creation of investments and establishing profitable business environment.

ABOUT SOME METHODS OF OPTIMIZATION OF ECONOMIC-MATHEMATICAL MODELS

Sesadze Neli
Georgian Technical University

Summary

In article it is considered methods of optimization of real economic processes with using of modern achievements in sphere of mathematics: statistical dynamic methods of optimization and the theory of games. The using of these methods provides development of economy, and raises its competitiveness.

DEVELOPMENT OF INFORMATION TECHNOLOGY IN GEORGIA

Sesadze Neli
Georgian Technical University

Summary

There is considered tendencies of development of information technology in Georgia, that is the factor of growth of economy and its export potential.

MAGNETIC PROPERTIES OF DEFECTIVE CRYSTALS OF TELLURIDE OF CADMIUM

Mamisashvili Nana, Darchiashvili Lalita, Chachkhiani Zurab
Georgian Technical University

Summary

By means of Method of Faraday in the field of temperatures (5–300)K studies temperature dependences of a magnetic susceptibility of crystals CdTe, CdTe:In and CdTe:CI. Results of experiments do not contradict the offer on the contribution distinct from zero in a magnetic susceptibility lanjevenovskava and Van-Flekovekova paramagnetism of complexes an impurity? Own dot defect. The opportunity of formation in volume CdTe of new diamagnetic complexes is discussed.

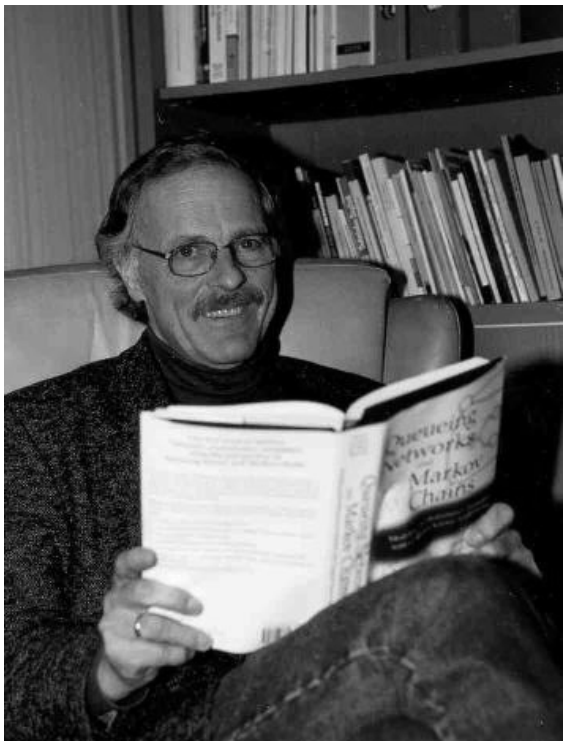
ARCHITECTURE OF INFORMATION SYSTEM SAP AND BUSINESS-DECISION IN ENTERPRISE RESOURCE PLANNING

Zhvania Taliko, Kapanadze David
Georgian Technical University

Summary

Basic principles of application of information technologies in business are presented in the article. Nowadays it is almost impossible to find a large company which does not use powerful information system for management of resources the enterprise, documents circulation and group work. Return of investments and conduct of business considerably depends on a correct choice of such system. In this article architecture SAP, (one of leaders of EPR systems) its basic components and means of realization business-decision on the basis of SAP in enterprise resource planning are considered.

In Memory of Dr. Gunter Bolch



Gunter Bolch was born on December 26, 1940 and raised in the Swabian town of Westhausen-Reichenbach near Aalen. He then moved to Karlsruhe and Berlin to study telecommunications engineering, specializing in information processing. Holding a position as a research assistant at the University of Karlsruhe at the institute of process control, he received his PhD in 1973 for his dissertation "Identifikation linearer Systeme durch Anwendung von Momentenmethoden" in the field of control theory. In the same year, his career took him to the Friedrich-Alexander University in Erlangen as Akademischer Rat at the Department of Operating Systems, which had been founded only eight months earlier by Prof. em. Dr. Fridolin Hofmann. In 1982, Gunter Bolch assumed leadership of the research group for performance evaluation and process control, which under his guidance attained international recognition during the following years. He retired in 2006 as Akademischer Direktor, but continued to maintain close connections to the department.

Over the years, Gunter Bolch's teaching and research activities in computer science took him to numerous scientific institutions all over the world. He was a guest professor at the Catholic University in Rio de Janeiro (PUC) for two years. In the course of his research, he also spent time in the US, Hungary, the former USSR, and Berlin - the city that was particularly close to his heart. The research resulted in more than 130 publications and seven books.

His activities at PUC were not limited to purely scientific aspects. Gunter Bolch learned to love Brazil and its people, which was reflected in his life-long commitment to Brasilienhilfe e. V. It was this commitment that made him such a special person and is just one example of his willingness to help others. In times when for many people life seems to be too stressful and superficial, people like Gunter Bolch are needed more than ever. He always remained calm, even in difficult situations, and was modest about his achievements. He drew the necessary strength from his family, his large circle of friends, and, last but not least, from Jazz music.

Gunter Bolch died on May 29, 2008 in Erlangen, after a serious illness. Sadly, he was not able to enjoy his retirement for very long. He was highly respected by his superiors, colleagues, staff, and students not only for his competence, but also for his friendly nature. We will always remember him, and our sympathies are with his family at this time.

In the name of the department staff,

Prof. Dr. Wolfgang Schroeder-Preikschat
Prof. em. Dr. Fridolin Hofmann