

## ABSTRACTS

**Management Information System and Devices. 2009. N 148.**

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UDC 621.396.2 : 625.316.2

**Spectral analysis of combined linear prediction model for Non-Gaussian processes.** / V.A. Tykhonov, N.V. Kudryavceva // Management Information System and Devices. 2009. N 148. P.4-7.

A combined linear prediction model of a generic autoregression-moving average are synthesized in this paper. The expressions for parametric spectral estimations of combined models of non-Gaussian stochastic processes are found.

Fig. 2. Ref.: 5 items.

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UDC 621.38

**Synthesis of unitary binomial counters** / A.A. Borysenko, V.V. Petrov// Management Information System and Devices.2009. N 148. P.8-13.

In this paper analytical function of excitation of D-triggers of high speed n-digit unitary binomial counters is suggested. These counters have cellular architecture which gives preference when using EPLD.

Tab.4. Fig. 8. Ref.: 2 items.

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UDC 631.3.037.37

**Transformation of binary and factorial numbers based on counting devices/** A.E.Goryachev// Management Information System and Devices. 2009. N 148. P. 14-19.

One of the ways of getting factorial numbers based on the use of two counters is shown. This method also allows transforming factorial numbers to binary. The system realizing proposed algorithm is developed.

Tab.2. Fig. 7. Ref.: 4 items.

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UDC 681.518:004.93.1'

**Hierarchical algorithm of electronograms recognition** / A.S. Dovbysh, K.V. Altyunnikova // Management Information System and Devices. 2009. N 148. P. 20-25.

The article describes the method of recognition electronograms, gained in a microdiffraction mode, in context of information-extreme intellectual technology, which based on recognition system information capacity maximization in study and exam processes. Algorithm and software of recognition system were developed. The hierarchical structure for study and exam phases was build.

Fig. 5. Ref.: 7 items.

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UDC 681.326:519.613

**Testing and verification of HDL-models for SOC components. II** / V.I. Hahanov, E.I. Litvinova, I.O. Pobezhenko, Tieceura Yves, Ngene Christopher Umerah // Management Information System and Devices. 2009. N 148. P. 26-37.

The technological tools, focused to testable analysis and subsequent synthesis of software is proposed. It is applicable for testing and verification. The examples of testability analysis by determination the controllability and observability of the transaction and control graph to detect the critical points with subsequent solving of the problem detection and removal of faults in a real DSP project of Xilinx.

Fig. 7. Ref.: 8 items.

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UDC 004.652

**Project management model synthesis for developing complex technical systems in conditions of risk and uncertainty** / V. V. Evssev, Y. V. Shovkoplyas // *Avtomatizirovannii sistemi upravleniya i pribori avtomatiki*. 2009. N 148. P. 38-42.

The object of study is project management of developing of complex technical systems in conditions of risk and uncertainty. In the work, in connection with the high complexity of the facility study, formalization of simulation-based simulation approach. As the formal apparatus of the theory of probability selected networks. These methods implemented on a computer. The obtained experimental data confirm the feasibility and effectiveness of methods.

Tab. 2. Fig. 1. Ref.: 5 items.

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UDC 004.9

**The simulation system of heterogeneous microcontroller networks** / Yu.K. Apraksin, I.O. Turega // *Management information systems and devices*. 2009. N. 148. P. 43-47.

The structure and presentation of the network object model for building system design and development of microcontroller networks are considered. The modular structure of the system is proposed. The input and storage module, design module, simulation and analysis module are described. The models of the basic network objects and their properties are considered. Models of receivers and transmitters, presented in the form of conveyor structures in accordance with stack of protocols that was used, are described. The proposed structure and model of network objects allow building a tool for design and simulation of distributed technical systems.

Fig. 5. Ref.: 2 items.

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UDC 004

**Markov Model for web-site rating estimation** / Z.V. Dudar, M.V. Zbitneva // *Management information systems and devices*. 2009. N. 148. P.47-51.

There were proposed Markov models for displaying frequency and duration of visiting web-site. Intelligent Agents structure as part of criteria of estimation web-site rating was offered. It was considered general and typical web site structure, matrix of probability of transition. Modeling of combination of words in text for calculation of quality of web-content is related to perspective of future research.

Fig. 3. Ref.: 5 items.

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UDC 004.7; 004.8; 007.85

**Development and research of database and base of knowledges for making decision in informative system of maintenance of ATMs** / N.V.Goloviy // *Management information systems and devices*. 2009. N. 148. P.52-58.

The feature of the considered approach is an original method, in relation to drawing out of the hidden knowledges and knowledge informative system acquisition in the field of service of ATMS on the basis of neuronics which foresees the use of the special procedure of selection verifications of rules.

Fig. 1. Ref.: 8 items.

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UDC 004.421:548.55

**Forecast Regulator Synthesis for the Growth Process of Cz-Si Single Crystals for the Solar PED** / A.P. Oksanich, V.R. Petrenko, S.A. Volokhov // Management information systems and devices. 2009. N. 148. P. 59-70.

On the basis of Box-Jenkins's approach to synthesis of dynamic process stochastic linear models APMAX-model is developed of monocrystal ingot stretching process connecting variations of stretching speed with ingot diameter variations. The model produced is used for optimum predictive control regulator synthesis of the growth process on ingot cylindrical part stretching stage. The results of regulator operation modelling verified its serviceability.

Fig. 9. Ref.: 17 items.

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UDC 004.732

**RTCP Feedback models** / G.V. Babich, Murad Ali A. // Management information systems and devices. 2009. N. 148. P. 71-75.

RTCP feedback models have been considered. The usage of RTCP feedback models allows to solve problem of network load decreasing and broadcast traffic RTP/RTCP.balancing. Their features, advantages and shortcomings have been investigated. The enhancement for one of RTCP feedback model (summarising model), which allows to include into receiver reports the information about factors with the highest influence onto RTP session, has been proposed. The tasks for further realization of proposed RTCP enhancement have been formulated

Fig.6. Ref.: 7 items.

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UDC 681.326:519.613

**Verification and Testing Infrastructure for SoC** / E.I. Litvinova // Management information systems and devices. 2009. N. 148. P. 76-86.

Infrastructure IP for SoC, based on the SoC design standards and technologies from leading world companies, is proposed. The assertion engine and IEEE 1500 SECT allows increasing the productivity of simulation, diagnosis and repairing facilities, as well as decreasing the verification time for HDL-models and the testing time for hardware SoC components.

Tab. 2. Fig. 8. Ref.: 26 items.

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UDC 681.326:519.613

**Verification method for HDL-code based on transaction logic graph** / V.I. Hahanov, I.A. Pobezhenko, V.A. Vasilenko, S.V. Chumachenko // Management information systems and devices. 2009. N. 148. C. 87-101.

Verification method for system HDL-models, focused on considerable increasing of the SoC components' quality is proposed. The software redundancy in the form of assertion engine allows decreasing the time-to-market. The method provides the detection of errors and faults with a given resolution in the software HDL-code by means of adding an observer in critical points of the transaction model as assertion redundancy. Determination of critical points is realized by means of calculation the controllability and observability for software components to improve the testability when detection of semantic errors.

Tab.4. Fig. 10. Ref.: 23 items.