

2009 4th International Conference on Dependability of Computer Systems

(DepCos-RELCOMEX 2009)

**Brunow, Poland
30 June – 2 July 2009**



**IEEE Catalog Number: CFP0944A-PRT
ISBN: 978-1-4244-4322-2**

2009 Fourth International Conference on Dependability of Computer Systems

DepCoS-RELCOMEX 2009

Table of Contents

Preface
Program Committee
Organizing Committee
Reviewers

Section 1: Methodology and Tools

Ontology-Based Security Problem Definition and Solution for the Common Criteria Compliant Development Process	3
<i>Andrzej Bialas</i>	
UML 2 Interaction Overview Diagram Validation	11
<i>Thouraya Bouabana-Tebibel</i>	
Minimal Büchi Automata for Certain Classes of LTL Formulas	17
<i>Jacek Cichon, Adam Czubak, and Andrzej Jasinski</i>	
Extended Dependability Analysis of Information and Control Systems by FME(C)A-technique: Models, Procedures, Application	25
<i>Iraj Elyasi Komari, Vyacheslav Kharchenko, Eugene Babeshko, Anatoliy Gorbenko, and Alexander Siora</i>	
Languages of CTL and RTCTL Calculi in Real-Time Analysis of a System Described by a Fault Tree with Time Dependencies	33
<i>Pawel Gluchowski</i>	
Dependability of Safety-Critical Computer Systems through Component-Based Evolution	42
<i>Vyacheslav Kharchenko, Vladimir Sklyar, and Alexandr Siora</i>	
UML-Based Reliability Modeling of Network Services, a UDP Echo Service Case Study	50
<i>Zbigniew Lipinski</i>	

Section 2: Software Security and Reliability

Separating Users' Views in a Development Process for Agile Methods	61
<i>Ammar Bessam, Mohamed Tahar Kimour, and Ali Melit</i>	
Dataflow Approach to Testing Java Programs	69
<i>Ilona Bluemke and Artur Rembiszewski</i>	
Design and Implementation of a Java Fault Injector for Exhaustif® SWIFI Tool	77
<i>Antonio Da Silva, Alberto Gonzalez-Calero, José Fernán Martínez, Lourdes López, Ana Belen García, and Vicente Hernández</i>	
A Concept of a Web Application Blending Thin and Fat Client Architectures	84
<i>Hugo Dworak</i>	
The Design and Implementation of a Documentation Generator for the PRISM Language	91
<i>Hugo Dworak</i>	
Software Rejuvenation for Higher Levels of VoIP Availability and Mean Time to Failure	99
<i>Vasilis P. Koutras, Christoforos-Panagiotis S. Salagaras, and Agapios N. Platis</i>	
A Model Based Framework for Specifying and Executing Fault Injection Experiments	107
<i>János Oláh and István Majzik</i>	
A Comparison of Structural Testing Strategies Based on Subdomain Testing and Random Testing	115
<i>Kazimierz Worwa</i>	
Siphon-Based Verification of Component Compatibility	123
<i>Wlodek M. Zuberek</i>	

Section 3: Dependability of Computer Networks

Applying Queuing Models for Assessing Network Services Dependability Parameters in Modern Information Systems	135
<i>Łukasz Bagrij, Katarzyna Michalska, and Marek Woda</i>	
Ontology Oriented Threat Detection System (OOTDS)	144
<i>Karol Bańczyk and Henryk Krawczyk</i>	
Inconsistent State Analysis of a Network Receiver with Colored Petri Nets	152
<i>Mohamed Bouali, Pavol Barger, and Walter Schon</i>	
Dependability of Large Reconfigurable Information Systems	160
<i>Dariusz Caban</i>	
Node Evaluation in the Chord P2P Systems	168
<i>Jacek Cichon, Krzysztof Cichon, and Przemysław Kobylanski</i>	
Relational Approach Towards Feasibility Performance for Routing Algorithms in Wireless Sensor Network	176
<i>Jan Nikodem</i>	

Efficiency Analysis in Communication Networks Topology Design	184
<i>Ewa Szlachcic and Jacek Mlynek</i>	
Detecting Botnets in Computer Networks Using Multi-agent Technology	192
<i>Mirosław Szymczyk</i>	
Job and Application-Level Scheduling: An Integrated Approach for Achieving Quality of Service in Distributed Computing	202
<i>Victor V. Toporkov, Anna Toporkova, Alexey Tselishchev, and Dmitry Yemelyanov</i>	
Data Mining Techniques for Semi-automatic Signature Generation	210
<i>Wojciech Tylman</i>	
Information Systems Performance Analysis Using Task-Level Simulator	218
<i>Tomasz Walkowiak</i>	
Section 4: Applications	
Model-Based Diagnostic Using Model Checking	229
<i>Mustapha Bourahla</i>	
On the Use of Dynamic Binary Instrumentation to Perform Faults Injection in Transaction Level Models	237
<i>Antonio da Silva Fariña and Sebastián Sánchez Prieto</i>	
Fault-Masking Capabilities of Basic Circuit Structures	245
<i>Bernhard Fechner</i>	
A Tool for Dependable and Distributable Presentations	254
<i>Bernhard Fechner and Oliver Körber</i>	
On Hardware and Software Implementation of Arithmetic in Finite Fields of Characteristic 7 for Calculation of Pairings	261
<i>Sergei Gashkov, Anatoli Bolotov, Alexej Burtzev, Alexander Frolov, and Sergei Zhebet</i>	
A Consistency Model for Distributed Virtual Reality Systems	271
<i>Vasily Y. Kharitonov</i>	
On Complexity of Coordination of Parallel Graph Transformations in GRADIS Framework	279
<i>Leszek Kotulski and Adam Sedziwy</i>	
Application of Computations with Calculation Error Exclusion for Computation Geometry Algorithms	290
<i>Dmitry Orlov</i>	
Analysis of Possibilities and Effectiveness of Combine Rough Sets and Neighborhood Theories for Solving Dynamic Scheduling Problem	296
<i>Henryk Piech</i>	
The Use of Heuristics in Creating Speculation Strategy	304
<i>Henryk Piech and Urszula Górnik</i>	

Section 5: Dependability of Technical Systems

Selection of Tripping Times for Distance Protection Using Probabilistic Fault Trees with Time Dependencies	315
<i>Tomasz Babczynski, Mirosław Lukowicz, and Jan Magott</i>	
A Domain Specific Language in Dependability Analysis	324
<i>Marcin Kowalski and Kazimierz Wilkosz</i>	
Reliability Centered Maintenance of Repairable Equipment	332
<i>Henryk Maciejewski</i>	
Operational Availability of Railway Dispatch Communication System	340
<i>Mirosław Siergiejczyk</i>	
Modifying Markov Models of Ageing Equipment for Modeling Changes in Maintenance Policies	348
<i>Jarosław Sugier and George J. Anders</i>	
Spectral Graph Theory and Network Dependability	356
<i>Alvaro Torres and George Anders</i>	
Analysis of Critical Situations in Discrete Transport Systems	364
<i>Tomasz Walkowiak and Jacek Mazurkiewicz</i>	

Author Index