



QUALITY and DEPENDABILITY

PROCEEDINGS
of the **11th International Conference**



Sinaia, Romania
September 24th - 26th, 2008

Dan STOICHIȚOIU Ioan BACIVAROV Abdessamad KOBİ
Editors

QUALITY and DEPENDABILITY

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of the

**11th International Conference
on Quality and Dependability**

**Sinaia, Romania
September 24th–26th, 2008**

SOCIETATEA ROMÂNĂ PENTRU ASIGURAREA CALITĂȚII
2008



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SOCIETATEA ROMÂNĂ PENTRU ASIGURAREA CALITĂȚII

Str. Theodor Burada, nr. 6, sector 1

010215 – București

Tel.: 021 – 313 63 35, 021 – 310 08 25

Fax: 021 – 313 23 80

E-mail: office@srac.ro

Site: www.srac.ro

Issue co-ordinator: Tatiana CHIROȘCA

DTP: Sanda STROESCU

Proof: Viorica BURCIU

Bun de tipar: 10.09.2008

ISSN 1842-3566

Printed ROMTRANS S.A.

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CCF 2008

THE 11th INTERNATIONAL CONFERENCE QUALITY AND DEPENDABILITY

Wednesday, 24 September 2008

PLENARY OPENING SESSION

Chairman: *Dan STOICHIȚOIU – President of The Romanian Society
for Quality Assurance*

Opening the debates of the Conference CCF 2008
*Dan STOICHIȚOIU – President of The Romanian Society for Quality Assurance, General
Chairman of CCF 2008*

Welcoming and greetings

SPECIAL SESSION: IN MEMORIAM J.M. JURAN (1904-2008)

Chairman: *Dan STOICHIȚOIU – President of The Romanian Society
for Quality Assurance*

The message from the President of the Juran Institute Inc. USA – Joseph A. DE FEO

Joseph M Juran – A Man for the Quality History
*Dan STOICHIȚOIU – The Romanian Society for Quality Assurance; Ioan C. BACIVAROV –
„Politehnica“ University of Bucharest – EUROQUALROM*

J.M. Juran – a life dedicated to quality
Film dedicated to the great American quality ‘guru’ of Romanian origin

PLENARY SESSION I: 20 YEARS ISO 9000: RETROSPECTIVE, EVOLUTIONS, PERSPECTIVES

Chairmen: *Ioan C. BACIVAROV – „Politehnica“ University of Bucharest
Abdessamad KOBI – Universite d’Angers, France*

ISO 9000 Standards– driver of the revolution in the quality field
Ioan C. BACIVAROV – “Politehnica“ University of Bucharest – EUROQUALROM

The evolution of ISO 9000 Standards. Certification and the credibility of certifications
Dan STOICHIȚOIU – The Romanian Society for Quality Assurance, Bucharest

The Audit– added value process
Cosmina Manuela BUȘUI – SRAC Auditor, Bucharest

From QMS Implementation towards Excellence
Irina SEVERIN, Monica Ileana CALOTĂ, Cristian POPESCU – National Agency for Community Programmes, Bucharest

The General Assembly CEN/CENELEC of 24 – 26 June 2008, Bucharest. Future Landscape of European Standardization
Mircea MARTIȘ – Romanian Standards Association (ASRO), Bucharest

PLENARY SESSION II: DEPENDABILITY

Chairmen: *Ioan C. BACIVAROV – „Politehnica“ University of Bucharest*
Ajit K. VERMA – Indian Institute of Technology Bombay, India

Mechanical Behaviour of Electroplated Copper deposited on Thin Polymer Substrates
Michel IGNAT – Polytechnic Institute of Grenoble, France, C. SEGUINEAU, X. LAFONTAN – Nova MEMS, Chouaf – Ecole Nationale Supérieure d’Electricité et Mécanique, Maroc, J.-M. DESMARRES – CNES, France

Bayesian Network for the Characterization of Faults in A Multivariate Process
Sylvain VERRON, Teodor ȚIPLICĂ, Abdessamad KOBİ – LASQUO/ISTIA, France

Emerging Concepts in Dependability and Resilience
Ioan C. BACIVAROV, Angelica BACIVAROV – „Politehnica“ University of Bucharest – EUROQUALROM

Risk Assessment for Critical Infrastructures
Ioan C. BACIVAROV – „Politehnica“ University of Bucharest – EUROQUALROM, Marian FIROIU, General Inspectorate of Romanian Police

About Nano-reliability
Marius BĂZU, Lucian GĂLĂȚEANU, Virgil ILIAN – National Institute for Research and Development in Microtechnologies, Bucharest

Nano-reliability: fault-tolerant architectures for nano-electronics
Virgil ILIAN, Marius BĂZU, Lucian GĂLĂȚEANU, V.L.M. ILIAN – National Institute for Research and Development in Microtechnologies, Bucharest

The Process Oriented Approach in Fault-tolerance Design
Ioana ARMAȘ –Hyperion University, Bucharest

RD-QOS: Resilience differentiated – quality of service
Constantin Alin COPACI – ANRCTI Bucharest, Luminița Dorina COPACI –Gorj Supreme Court

About the Necessity of Redefining the Time Quantum
Alexandru STAMATIU – Faculty of Building Services, UTCB Bucharest

Multi-sensor Data Fusion Using Fuzzy Logic for Wireless Sensor Networks
Ajit K. VERMA, A. SRIVIDYA, P. MANJUNATHA – Reliability Engineering Indian Institute of Technology Bombay, India

Reliability Modelling of a Complex System Considering Human Factor
Angelica BACIVAROV, G. PETRICA – „Politehnica“ University of Bucharest

Defect Diagnosis of Rolling Element Bearings using Morlet Wavelet Filter
A. SRIVIDYA, A. K. VERMA, B. SREEJITH – Indian Institute of Technology Bombay, Mumbai, India, S.V. LAKHA, Rotomech automation limited, Mumbai, India

Poster session: THE EVALUATION OF DEPENDABILITY OF SOCIO-TECHNICAL RESILIENT SYSTEMS*

Chairmen: *Angelica BACIVAROV – „Politehnica“ University of Bucharest*
Marius BĂZU, IMT Bucharest

An Interdisciplinary Research Project Regarding Dependability of Socio-Technical Resilient Systems
Angelica BACIVAROV, Ioan C. BACIVAROV – „Politehnica“ University of Bucharest

Classification of Human Risks with the Method Analytical Hierarchy Process
Dorra AYADI- ISGIS, Sfax –Tunis, Lotfi AZZABI – FSEGS, Sfax, Tunis, Abdessamad KOBI, Christian ROBLEDO – LASQUO/ISTIA, Angers-France, Habib CHABCHOUB ISGIS, Sfax – Tunis

Extending Health Considerations in Generation/Transmission Power System to Include Uncertainty Using Fuzzy Data
Ajit K. VERMA, A. SRIVIDYA – Indian Institute of Technology Bombay, Mumbai, India, M.V.BHATKAR – A.C.Patil College of Engineering, Navi Mumbai, India

Analysis of the Survivability of Information Systems
Ioan-Cosmin MIHAI – Police Academy, Bucharest, Ioan C. BACIVAROV – „Politehnica“ University of Bucharest

Decisional Strategies and Algorithms
Costel CIUCHI – General Directorate for IT, Government of Romania, Angelica BACIVAROV, Ioan C. BACIVAROV, G. PETRICA – „Politehnica“ University of Bucharest

Reliability of Optical Communication Systems. On Transmission Quality Evaluation
Ioan C. BACIVAROV, Angelica BACIVAROV – „Politehnica“ University of Bucharest – EUROQUALROM, Fabrice GUERIN – University of Angers – LASQUO, France

Micro-biosensors – new opportunities for the environmental and food safety management
Lucian GĂLĂȚEANU, Marius BĂZU, Virgil ILIAN – National Institute for Research and Development in Microtechnologies, , Jana PETRE – ECOIND, Bucharest

* The papers of this session will be introduced by brief presentations made by the authors/coordinators of the session.

An European Micro-systems Reliability Service Cluster
Marius BĂZU, Lucian GĂLĂȚEANU, Virgil ILIAN – National Institute for Research and Development in Microtechnologies, Bucharest

Ensuring the Resilience against Denial of Service Attacks in Ad-hoc Networks
Constantin Alin COPACI – ANRCTI Bucharest, Luminița Dorina COPACI –Gorj Supreme Court

Thursday, 25 September 2008

PLENARY SESSION III: BUSINESS MANAGEMENT

Chairmen: *Tony DI PALMA – IQNet, Switzerland*
Alex STOICHIȚOIU – SRAC, Bucharest

Social Accountability – the third pillar to sustainable success
Tony Di Palma – IQNet, Switzerland

Business Social Compliance Initiative (BSCI) – a new instrument for the ethical business management
Alex STOICHIȚOIU – SRAC, Bucharest

Integration of the Quality Management System with the Social Accountability Management System and the Occupational Health and Safety Management System according to the Requirements of ISO 9001, SA 8000 and OHSAS 18001
Romeo DENUNTZIO – SRAC, Bucharest

Corporate Social Responsibility in the Process of Europeanization and Globalization. Opportunities and Constraints for the Romanian Economy
Steluța NISIPEANU – National Research and Development Institute on Occupational Safety, Bucharest

Importance of the Evaluation of Customer Satisfaction Level
Andrei Octavian PARASCHIVESCU – “George Bacovia” University, Bacău

Implementation and Certification of the Information Security Management System – a must for success in any business
Ioan POPA – SRAC, Bucharest

Application of Six Sigma and Promethee Multi-criteria Method to Select the Product System
Lotfi AZZABI – Institut Supérieur de Gestion de Gabes, Tunisia, Dorra AYADI – Institut Supérieur de Gestion Industrielle de Sfax, Tunisia, Abdessamad KOBİ, Christian ROBLEDO – LASQUO/ ISTIA, France, Younes BOUJELBENE – Faculte des Sciences Economiques et Gestions de Sfax, Tunisia

Risk Management as A Catalyst for Integrated Management Systems
Liliana NIȚU – ARC, Bucharest, Lucian Daniel NIȚU – ROCERT, Bucharest, Gheorghe SOLOMON – „Politehnica” University, Bucharest

Marketing and Financial Knowledge
Constantin CODERIE, Mircea UDRESCU – University ARTIFEX, Bucharest

SECTION 1: MANAGEMENT SYSTEMS

Chairmen: *Mihai POPESCU –“Politehnica“ University of Bucharest*
Daniela MOLDOVAN –APA R.A. Company, Braşov

Integration of Management Systems

Firică POPA – SRAC, Bucharest

Quality – Environment – Occupational Health and Safety – Food Safety Integrated Systemic Approach for the Operators of Water Supply Services

Daniela MOLDOVAN –APA R.A. Company, Braşov

Integration of Total Productive Maintenance with Total Quality Management, Foundation for World-class Manufacturing

Constantin MILITARU, Daniel GEORGESCU –“Politehnica“ University, Bucharest

Statistical Methods used in Quality Management of the Electrical Energy

Petruţa MIHAI, Mihaela MATEI, Claudia L. POPESCU, Mihai O. POPESCU –“Politehnica“ University, Bucharest

Among the Main Processes regarding Quality Management System of Private Life (SMQVP)

George MANDICESCU – ASOQ Ploieşti, Victor VOEVODSCHI – SRAC, Bucharest

The Contribution of the BS OHSAS 18001:2007 to the Compliance with the EU Directives and National Legislation.

Steluţa NISIPEANU, Raluca STEPA – National Research and Development Institute on Occupational Safety, Bucharest

Risk Management in Complex High Functional Importance Systems

Florentina LINCA, Angelica BACIVAROV, Ioan BACIVAROV – „Politehnica“ University, Bucharest – EUROQUALROM

Poster Session: MANAGEMENT SYSTEMS*

Chairman: *Constantin MILITARU – „Politehnica“ University, Bucharest*

The Improvement of Environmental Performances by Implementing Parallel Methods of Evaluation of the Impact Associated to Environmental Aspects

Daniela MOLDOVAN –APA R.A Company, Braşov

Quality Cost, Models and Use. Case study at the companies installed in the North-West of Morocco

Raouia EL AYADI, Amin LAGLAOUI, Said BARRIJAL –ABDELMALEK ESSAADI University, Maroc, Abdessamad KOBI, Christian ROBLEDO – ISTIA-LASQUO University of Angers, France

From an Employees' Concept of Satisfaction to the Construction of a Measurement

Remy GAUTIER, Stephanie IBANEZ, David OUAHNOUNA – ENSAM Paris, France

* The papers of this session will be introduced by brief presentations made by the authors/coordinators of the session.

Model for the Implementation of A Project Risk Analysis Method in Companies
Remy GAUTIER, Vanessa VERDOUX – ENSAM Paris, France

Service Quality Analysis of „E-ticketing“ Services by UK’s Low Cost Airlines
Michele CANO, Athanassios KOUROUKLIS, Gaurav KHURANA – University of Paisley, UK

SECTION 2: PARTICULARITIES IN THE APPLICATION OF MANAGEMENT SYSTEMS

Chairmen: *Maria ROTARU – Pitești City Hall*
Elena NECULA – SRAC, Bucharest

Process Innovation – organization improvement and performance increasing method. Case study: test process innovation in the test desks areas for electric equipments functional tests
Irina TIHAN – ICPE SAERP S.A., Bucharest

Project Management Applied to the Implementation of a Quality Management System in the Leather and Footwear Industry
Elena NECULA – SRAC, Bucharest

Addressing the Integrated Management System (IMS) non-conformities, identified within Pitești City Hall
Tudor PENDIUC, Iosiv CERBUREANU, Maria ROTARU – Pitești City Hall

Intelligent Measurement System for Water Supply and Waste Water Parameters for the Integrated Water Management – SIMPADA
Ecaterina POPESCU, Veronica CRAIU, Florentina BADEA – INCDMF, Bucharest

The Taguchi Method – Control Method in the Optimization of Quality Costs
Victor ANDREI – CCA TehnoREX S.R.L., Bucharest

Comparative Methods in Environmental Aspects’ Evaluation
Mădălina Silvia IGNATOV – SMART QUALITY CONSULTING S.R.L., Bucharest, Valeriu PANAITESCU – “Politehnica“ University, Bucharest

Poster Session: PARTICULARITIES IN THE APPLICATION OF MANAGEMENT SYSTEMS*

Chairman: *Ioana ARMAȘ – Universitatea Hyperion, Bucharest*

Improvement of Quality Management System Performances by Using the Statistical Techniques in Controlling the Quality of the Water Treatment Process for Free Residual Chlorine
Daniela MOLDOVAN – APA R.A. Company, Brașov

The Excellence Management and the Quality Culture within the Public Institutions
Andrei Octavian PARASCHIVESCU – „George Bacovia“ University, Bacău

* The papers of this session will be introduced by brief presentations made by the authors/coordinators of the session.

Comparative Multi-criteria Evaluation of the University Institutions – practices, methods, criteria, results, limits

Nicolae George DRĂGULĂNESCU – “Politehnica“ University, Bucharest

Environmental Performance into Thermo-electric Power Plants

Mădălina Silvia IGNATOV – SMART QUALITY CONSULTING S.R.L., Bucharest, Valeriu PANAITESCU – „Politehnica“ University, Bucharest

Competitive intelligence and benchmarking models in higher education

Maria Cristina MENDONÇA – University of Coimbra, Portugal

Quality Management in Australian Organizations. A Longitudinal Approach

Ton van der WIELE – Erasmus University of Rotterdam, Netherlands, Alan BROWN – Edith Cowan University, Perth, Australia

Friday, 26 September 2008

PLENARY SESSION IV: EVOLUTIONS AND TRENDS IN THE FIELD OF MANAGEMENT SYSTEMS

***Chairmen: Ioan C. BACIVAROV – „Politehnica“ University of Bucharest
Michel IGNAT – INP Grenoble, France***

The Role of IQNet in the Global Certification Market

René WASMER – IQNet, Switzerland

TQM Religion

Veronel ANTONESCU, Florin Teodor TĂNĂSESCU, Valerius Mihail STANCIU, Gheorghe ȘTEFĂNESCU, Leonida Brânduș STĂNOIU – Electro-technical Romanian Committee, Bucharest

Quality – Safety Management System in Maritime Companies

Raouia EL AYADI, Amin LAGLAOUI, Said BARRIJAL – ABDELMALEK ESSAADI University, Maroc, Abdelhak SOUAL – Compagnie Maritime Casablanca, Maroc, Abdelgheni CHERKAOUI – Ecole Mohammadia D’Ingenieur Rabat, Maroc, Abdessamad KOBİ – LASQUO/ISTIA, France

EMAS – Instrument for the Sustainable Development. SRAC – in support of EMAS registration

Felicia IOANA – Ministry of Environment and Sustainable Development, Bucharest, Elena ZINCA – SRAC, Bucharest

Book Release

„Reliability Management“ – Authors: Viorel Gh. VODĂ; Emil PETRESCU

Waste Management System into Thermal Power Plants

Ovidiu ȚUȚUIANU, Constantin MOLDOVEANU, Victor URSIANU, Aurelian VASILE – NOVA INDUSTRIAL S.A., Bucharest

ECOSENSE – A new approach in environmental modelling
*Mădălina Silvia IGNATOV – SMART QUALITY CONSULTING S.R.L., Bucharest, Valeriu
PANAITESCU – “Politehnica“ University, Bucharest*

**FESTIVE SESSION:
THE ROMANIAN SOCIETY FOR QUALITY ASSURANCE – 15 YEARS**

**INIMM SYMPOSIUM (The National Institute for SMEs) – the 7th Edition:
RESEARCH – DEVELOPMENT, DETERMINANT CONCEPT
FOR THE DEVELOPMENT OF THE SME SECTOR IN ROMANIA**

CLOSING THE CCF 2008 DEBATES

Welcome Message

On behalf of the **Organising Committee** and of the **International Scientific Committee** of **CCF2008**, we would like to address a warm welcome to all the participants in this major event for the community of specialists in quality and dependability.

The primary objective of the **11th International Conference on Quality and Dependability – CCF2008** is to provide an international forum for the dissemination of recent information and scientific results in these modern domains.

As traditionally, **CCF 2008** is organised by the **Romanian Society for Quality Assurance (SRAC)**, under the aegis of several important international organisations in the field, including **ITC – UNCTAD/WTO**, the joint technical cooperation agency of the **United Nations Conference on Trade and Development (UNCTAD)** and the **World Trade Organization (WTO)** and **Eurocer-building**. We are proud to mention that this edition of the conference has the scientific endorsement of the **Institute of Electrical and Electronics Engineers – IEEE**, the world's leading professional association for the advancement of technology, too.

The International Conference in Quality and Dependability – CCF is now a well established **brand of excellence** among the international scientific meetings in the interdisciplinary field of **quality and dependability**.

That's why, we consider useful to remember the main moments that marked the evolution of **CCF** – from a national scientific meeting to an important international conference in the field.

The first National Conference on Quality and Reliability – **CCF '87**, organised by the Central Reliability Group of MIEt, took place at the Hotel 'Teleferic' from Poiana Brasov, in 1987. It was then decided that this conference should become a traditional national scientific event in the field. Therefore, the second edition of the Conference, **CCF'88** took place at the premises of 'Minerva', 'Diana' and 'Afrodita' hotels from Baile Herculane, in 1988.

After the political changes of 1989,, **SRAC** took over this tradition, by organising the third edition of the Conference – **CCF'96** at the Hotel 'Roman' from Baile Herculane, in September 1996. The fourth edition of the conference – **CCF'97** was organised in Sinaia, on the 2nd – 3rd of October 1997, while the fifth edition – **CCF'98** was organised in Sinaia also, at the 'Holiday Inn' Hotel (28th – 30th of October 1998). **CCF'99**, the sixth edition of the conference took place at the Hotel 'Sport' from Poiana Brasov, during the period 22-24 October 1999.

The seventh edition of the conference – **CCF'2000** was organised, at the Hotel 'Palace' from Sinaia between 27th – 29th September 2000; it was a scientific meeting with a wide international participation and, as a consequence, it was decided that the further editions of **CCF** should be included in the circuit of the international conferences in quality and dependability and organised every two years.

The next CCF scientific meetings, namely the eighth edition of the Conference – **CCF 2002**, organized during the period 18th – 20th of September 2002, at Casino Sinaia as well as the ninth edition – **CCF 2004** – organized during the period 29th of September – 1st of October 2004, at Hotel Mara in Sinaia were unanimously considered as important international scientific events in the field of quality and dependability.

The 10th edition of the conference – **CCF2006** was a jubiliary one. More than 70 papers were presented by specialists in the field from 10 countries: Argentina, Australia, Belgium, France, Great Britain, Greece, Moldavia, the Netherlands, Switzerland and Romania, too. A special session of **CCF2006** marked the centenary of the **International Electrotechnical Commission (IEC)**. A round table dedicated to the problematic of innovation and improvement for a performant management was among the main moments of **CCF2006**.

As already mentioned, the **International Conferences in Quality and Dependability – CCF** conferences have a long tradition among the specialists of the field. The previous conferences in quality, reliability and maintainability organised in Romania in the last two decades have contributed to the promotion in our country of new ideas and methods in quality and dependability. We are sure that **CCF2008** will constitute a new qualitative step in this process.

Quality and dependability have become today undeniable strengths contributing to the development of companies, small businesses or large multinational groups. Their application in different organisations must be the result of research and partnership among industry, academia and business. This conference can contribute to the dialogue between the main actors of the quality and dependability world.

The points of view of well-known specialists in the field from Romania and several countries from Europe and Australia will allow to establish a realistic image of the national and international evolutions and of the perspectives of these modern fields.

The dynamic political and economic evolutions in Europe during the last decades increased the importance of **quality** now considered as a strategic tool and a determining factor for the development and enhancement of Europe's global competitiveness.

Several organisational, scientific, and educational initiatives and programs of leading European organisations, developed in the last years, which have contributed to the creation of a favourable framework for quality promotion in Europe, support this assertion.

Fourteen years ago, in 1994, an important initiative regarding the **European Policy for Quality Promotion** – was developed by the **European Commission (EC)**. The implementation of the **European Quality Promotion Program (EQPP)** was based on a strategy of unified and co-ordinated actions for various participants, both private and public, at community, national, and regional levels.

The need for a holistic approach to quality as a key to business excellence in a united Europe has created an appropriate climate for the European organisations in the field to cooperate and exploit synergies resulting from their individual specific strengths and primary target groups.

In signing in 1998 an „**European Quality Charter**“, representatives of the major European quality organisations have taken – 20 years ago – a step towards the harmonisation of their approaches to quality.

The document recognises that, in a global economy, **quality** is the key to competitiveness for European companies and makes it incumbent on signatories to work toward a common goal of promoting quality across the continent.

CCF2008 is the first great international conference in quality and dependability organized in Romania after the integration of Romania in the European Union on the 1st of January 2007.

Several debates of **CCF2008** will be dedicated to the evolutions in the European quality on the European scene during these last years , as well as to the national evolutions in this field. The **real** integration of Romanian economy in the unified European structures is an impossible endeavour unless the severe requirements on quality based on the EU's standards are met.

Several organisational, research and educational programs and initiatives in the quality field were developed in Romania in the last years, and they will be certainly analysed in the framework of this conference.

Different European programs and initiatives in the dependability (reliability, maintainability, safety and security) were developed in the last years, too.

The **European Commission** emphasised, in its **Fifth Research Framework Programme – FP5**, „...the emerging generic **dependability** requirements in the information society, stemming both from the ubiquity and volume of embedded and networked systems and services as well as from the global and complex nature of large-scale information and communication infrastructures, from citizens, administrations and business in terms of technologies, tools, systems, applications and services“.

The new **EU's Framework Programme for Research and Technological Development – FP6** and the forthcoming one – **FP7**, can be considered as a major tools to support the creation of **the European Research Area (ERA)**. The main topics of **FP6** and **FP7** and some representative projects, especially those in quality and safety/security fields will be analysed in the frame of this conference.

The international scientific meetings, such as **CCF2008** is, could be a modest contribution to this objective, by reviewing the state of the art, experiences, and new trends in the relevant scientific and relevant areas.

We are honoured by the participation in the **11th International Conference on Quality and Dependability – CCF2008** of well-known specialists in the field – academics, managers, practitioners and researchers from **Australia, Belgium, France, Great Britain, Italy, India, Maroc, Moldavia, the Netherlands, Portugal, Switzerland, Tunisia, U.S.A. and Romania**, too. Their points of view, presented in about 60 papers will be of great interest to the participants in **CCF 2008**

The **11th International Conference in Quality and Dependability – CCF2008** covers major aspects of the field, including the following ones:

- ❑ *Systems of Management: developments, evolution, standardisation (ISO 9000, ISO 14000 ,ISO2200, ISO 27000, OHSAS 18001 a.o.);*
- ❑ *Quality management: ISO 9000 series after 2 decades;*
- ❑ *New approaches: social accountability management (SA8000, ISO 26000) and ethics management;*
- ❑ *Integrated Systems of Management;*
- ❑ *Service quality management (education, health care, tourism, banking system, etc.) and evaluation of customer satisfaction;*
- ❑ *TQM, Six Sigma, quality management tools;*
- ❑ *Accreditation (certification bodies, laboratories, personnel) and certification (quality systems, products and services);*
- ❑ *Voluntary product certification;*
- ❑ *Total Quality Management, Six Sigma, quality management tools;*
- ❑ *Modern control and conformity assessment techniques;*
- ❑ *Conformity assessment in the mandatory area;*
- ❑ *Modern approaches in dependability, resilience and evolvability;*

- ❑ *Reliability (mathematical tools; design; predictive, experimental and operational reliability; reliability of human factor);*
- ❑ *Maintainability (maintenance management, preventive and corrective maintenance techniques, RCM);*
- ❑ *Education and training in quality and dependability;*
- ❑ *Computer-aided study in quality and dependability;*
- ❑ *Quality, reliability and security in the IT&C industry;*
- ❑ *Legislation and standardization in quality and dependability;*
- ❑ *Social, juridical and economical implications of quality and dependability.*

*The special session „A homage to Joseph M. Juran (1904-2008)“ organized at the beginning of CCF2008 represents a tribute to the great guru of quality **Joseph M. Juran**, the „father“ of the modern day quality management who passed away at the beginning of 2008. Living through 104 years of profound changes and events, Dr. J.M. Juran, the famous quality „Guru“ of Romanian origin, has participated vigorously in and contributed extensively to the growth of industry, society and – perhaps most important to us – quality. During this session the exemplary life dedicated to quality and of his main contributions in the field of quality management will be presented. Dr. Juran’s longevity, persistence, leadership and profound knowledge are the epitome of quality leadership to which many aspire and for which much of the world is grateful.*

*A special session of **CCF2008** will mark the **two decades of the ISO 9000 family of standards for quality management systems**. Another special session will be dedicated to the **dependability of complex socio-technical systems**, a major topic for several European research projects and Networks of Excellence.*

*A **workshop** concerning the quality topic for SMM enterprises and a **round table** dedicated to the problem of **innovation and improvement for a performant management** will be also organised in the frame of **CCF2008**, too.*

*During the last day of the conference the evolutions and the perspectives regarding the management, engineering and certification of quality in Romania will be analysed as a part of the session that will mark the 15th anniversary of the **Romanian Society for Quality Assurance (SRAC)**, the main organiser of **CCF** conferences.*

*A wide selection of papers presented in the frame of **CCF2008** is included in the **Proceedings** of the conference, entitled „ **Quality and Dependability**“.*

Finally, we would like to thank all the authors who submitted their work, the presenters, the members of the organising committee, and all those who contributed to the Conference with their efforts and support.

*Special thanks to the members of the **International Scientific Committee of CCF2008**, prestigious personalities in the field from 10 countries, who made up an equilibrated and high-level scientific program for **CCF 2006**.*

*We hope that you will find the **11th International Conference in Quality and Dependability – CCF 2008**, organised in a beautiful area of the Carpathians Mountains – **Sinaia**, a both stimulating and enjoyable forum in which to share current results and trends in quality and dependability.*

We invite you to enjoy the presentations, panels, the technical and tourist visits over the three days of this conference and to participate to the fullest this international event gets underway.

Dr. Dan G. STOICHITOIU
General Chairman of CCF 2008

Prof. dr. Ioan C. BACIVAROV
Chairman of the International
Scientific Committee of CCF 2008

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JOSEPH M. JURAN - Un om pentru istoria calității

Dan G. STOICHIȚOIU, Ioan C. BACIVAROV

Președintele Societății Române pentru Asigurarea Calității, București, România; Directorul
Laboratorului "EUROQUALROM", Universitatea "Politehnica" București, România
dan.stoichituiu@srac.ro, bacivaro@euroqual.pub.ro

Abstract

This paper is a foreword to the special session of CCF2008 dedicated to the memory of Dr. J. M. Juran and represents a tribute to the great guru of quality Joseph M. Juran, the "father" of the modern day quality management who passed away at the beginning of 2008. Living through 104 years of profound changes and events, dr. J.M. Juran has participated vigorously in and contributed extensively to the growth of industry, society and - perhaps most important to us - quality. This paper contains a short presentation of Juran's exemplary life dedicated to quality and of his main contributions in the field of quality management. Dr. Juran's longevity, persistence, leadership and profound knowledge are the epitome of quality leadership to which many aspire and for which much of the world is grateful.

Keywords: Joseph Juran, quality management, quality history

Standardele ISO 9000, vector al revoluției în domeniul calității

Ioan C. BACIVAROV

Directorul Laboratorului "EUROQUALROM", Universitatea "Politehnica" București, România
bacivaro@euroqual.pub.ro

Abstract

At the anniversary of 20 years from the publishing of the first edition of the ISO 9000 family of standards, this paper presents the evolution of this successful family of standards. The ISO 9000 family of standards represents an international consensus on good quality management practices. It consists of standards and guidelines relating to quality management systems and related supporting standards. The family of standards ISO 9000 (together with the family of standards ISO 14000) has become thoroughly integrated with the world economy. ISO 9001:2000 is now firmly established as the globally accepted standard for providing assurance about the quality of goods and services in supplier-customer relations. The author demonstrates, in the first part of the paper, why the ISO 9000 standards could be considered as a vector of the quality revolution of the last two decades. The extraordinary success of ISO 9000 standards made possible the development of a real „industry” of certification and consultancy in quality management. In the second part of the paper, the author analyzes the results of a recent British study regarding the advantages of ISO 9001 certification, as well as its favorable impact among the consumers. He makes some proposals addressed to the Romanian business and educational system in order to assure their success under the new conditions of the European Union legislation.

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Audit Process - Process with Relevant Added Value

Cosmina BUȘUI

Inginer, SRAC Auditor, Arad, România
office@avantajq.ro

Abstract

Many organisations from Romania have major interest for Management Systems Conformity Certification. Some of them need conformity Certification against various International Standards as a result of market or customer requirements. Others want conformity certification as result of their system management performances. Because the audit is the main process used for conformity evaluations against International Standards, the papers intent to present few ideas by which audit process, performed by certification body auditors, become „adding value process” for audit clients. The papers are addressing both to the auditors and to personnel involved in implementation, maintenance and improvement of management systems from certified organisation; also, the papers intent to demonstrate that conformity certification has to be a profitable investment, not a big bureaucracy.

From QMS Implementation Towards Excellence

**Irina SEVERIN, Monica Ileana CALOTĂ, Cristian
POPESCU**

National Agency for Community Programmes in the Field of Education and Vocational Training,
Bucharest, Romania; National Agency for Community Programmes in the Field of Education and
Vocational Training, Bucharest, Romania; National Agency for Community Programmes in the
Field of Education and Vocational Training, Bucharest, Romania

irina.severin@anpcdefp.ro, monica.calota@anpcdefp.ro, cristian.popescu@anpcdefp.ro

Abstract

In the context of enlarging the activity field and the transition to a new generation of education, training and youth programmes, respectively Lifelong Learning and Youth in Action 2007-2013, the National Agency for Community Programmes in the Field of Education and Vocational Training (NACPFEVT) aims to present the practical approach of updating, maintaining and continuous improvement of the mature quality management system (QMS) set in place. The QMS certification, based on the ISO 9001:2000 standard, has been renewed by the RSQA (Romanian Society for Quality Assurance) in December 2007. The organisational evolution from the starting-up approach in 2004 to the now-a-days culture and perspectives is reviewed with emphasis on the system development strategy as a commitment towards the excellence in quality.

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Mechanical Behavior of Electroplated Copper Deposited on thin Polymer Substrates

**M. IGNAT, A.C. SEGUINEAU, CHOUAF, X. LAFONTAN,
J.-M. DESMARRES**

ENSEEG INPG, Saint-Martin-d'Hères, France; ENSEEG INPG, France; Ecole Nationale Supérieure d'Electricité et Mécanique. Casablanca, Maroc; Nova MEMS, Ramonville, France; CNES, DCT/AQ/LE, Toulouse, France
michel.ignat@inpg.fr

Abstract

Tensile tests were performed on specimens consisting in electroplated thin copper films and structures, deposited on polyimide type substrates. Two aspects of reliability issues have been addressed on this sort of film on substrate systems: -one corresponds to the degradation of a film on a substrate, when submitted to several cyclic mechanical solicitations; the other one, - corresponds to the effect produced by geometrical and material discontinuities at the interfaces, on the local stress fields. In our case at the contours of the copper structures in contact with their polyimide substrate.

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Bayesian Network for the Characterization of Faults in a Multivariate Process

Sylvain VERRON, Teodor ȚIPLICĂ, Abdessamad KOBI

LASQUO/ISTIA, Angers - France; LASQUO/ISTIA, Angers - France; LASQUO/ISTIA, Angers - France

sylvain.verron@univ-angers.fr, teodor.tiplica@univ-angers.fr, abdessamad.kobi@univ-angers.fr

Abstract

The main objective of this paper is to present a new method of detection and characterization with a bayesian network. For that, a combination of two original works is made. The first one is the work of Li et al. [1] who proposed a causal decomposition of the T^2 statistic. The second one is our previous work on the detection of fault with bayesian networks [2], [3], notably on the modelization of multivariate control charts in a bayesian network. Thus, in the context of multivariate processes, we propose an original network structure allowing deciding if a fault is appeared in the process. More, this structure permits the identification of the variables that are responsible (root causes) of the fault. A particular interest of the method is the fact that the detection and the identification can be made with a unique tool: a bayesian network.

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Managementul protecției infrastructurilor. Aspecte privind securitatea rețelelor de comunicații electronice

Ioan C. BACIVAROV, Marian FIROIU

Prof. univ. dr. ing., Universitatea „Politehnica” București, ETTI - EUROQUALROM; Drd. Ing.,
Inspectoratul General al Poliției Române
bacivaro@euroqual.pub.ro

Abstract

The authors analyse some problems related to the management of critical infrastructure protection, which could be considered as a part of the national safety and security of a state. Their researchers are devoted mainly to the problem of the security of the electronic communication networks. The aim of the security management of electronic communication networks is to save financial resource as well as to reduce the negative impact of undesirable security events. Risk management supposes technical and non-technical measures. The specialists must develop practical securities policies, rules and procedures in order to reduce risk impact. Finally, the practical security is rather a managerial and administration problem, than a technical one.

Keywords: Critical infrastructure, risk management, safety, security, electronic communication networks.

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About Nano-Reliability

Marius BĂZU, Lucian GĂLĂȚEANU, Virgil Emil ILIAN

Reliability Laboratory, National Institute for Microtechnologies, Bucharest, Romania
marius.bazu@imt.ro, lucian.galateanu@imt.ro, virgil.ilian@imt.ro

Abstract

The paper is aimed to identify the main issues linked to the nano-reliability (reliability at nano level) and to propose ways for solving this issues in order to achieve a reliable product. Because nano-technology is a new domain, first, the main concepts and technical terms will be introduced. Than, the main issues of the reliability of nano-structured materials will be described. Eventually, the failure physics for nanodevices will be introduced.

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Nano-Reliability: Fault-Tolerant Architectures for Nanoelectronics

V.E. ILIAN, M. BĂZU, L. GĂLĂȚEANU, V.L.M. ILIAN

Reliability Laboratory, National Institute for Microtechnologies, Bucharest, Romania; University
Politehnica of Bucharest, Faculty of Automatic Control and Computers
ilian_ve@yahoo.com, marius.bazu@imt.ro, lucian.galateanu@imt.ro

Abstract

The reliability of nanoelectronics systems, bring in attention many new problems, new failure mechanisms and different response to stress. The dimensions of components are very small and they are more susceptible to failure, imposing new rules for manufacturing and more costs. New design concepts need to be adopted in order to improve reliability. A solution for complex nanoelectronic devices is to develop and design fault tolerant architectures. The current paper overviews the implementation techniques fault tolerant architectures in nanoelectronics. The main ideas explored are the fault tolerance models suitable for nanoelectronics devices. After a classification of fault tolerant architectures, the main redundant structures are discussed and the advantages and the weak points are revealed.

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The Process Oriented Approach in Fault-Tolerance Design

Ioana ARMAȘ

Faculty of Electronics, Automatics and Applied Informatics, Hyperion University, Bucharest,
Romania
ioanaarm@yahoo.com

Abstract

The development of new and complex systems are constrained by security and safety requirements that impose a new framework of design by considering the corresponding problems from the first stages of the system design. Thus, the fault - tolerance design becomes an area integrated in the global design process of a system, that determines new functional and structural solutions specific to safety and security. Also, these problems must be extended from electronics and software to all other technical areas, especially to the heterogeneous ones, such as mechatronics, but also in manufacturing and industrial processes, construction, IT&C (Information Technology & Communications). The safety and security are problems specific to management processes also, such that corresponding fault - tolerance solutions should be developed. In this context becomes necessary to determine and develop a new general approach for fault - tolerance design both in technical and management systems. The present paper proposes and develops the integrated framework of the process oriented approach in the fault - tolerance design. The approach is based on the identification of the functional processes specific to the fault - tolerance concept.

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RD-QOS: Resilience Differentiated - Quality of Service

Dorina Luminița COPACI, Constantin Alin COPACI

Tribunalul Gorj, Târgu Jiu, România; ANRCTI, București, România
lcopaci@yahoo.com, acopaci@yahoo.com

Abstract

In the recent years two factors dominated the development of the transport network infrastructure. The first factor is the advance in optical transmission and optical network technology, which made its way from research labs and test fields to operating networks. The second trend is the continuing explosive growth of IP data traffic. The provisioning of QoS and resilience is a key requirement for today's and future IP-based networks. The current research centers on MPLS as a common platform to support both, QoS and resilience in IP-based networks.

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Asupra necesității redefinirii cuantei de timp. Implicații în modelarea fiabilității sistemelor

Alexandru STAMATIU

Universitatea Tehnică de Construcții București

Abstract

În anul 2002 am prezentat noua concepție asupra modelării entropice a proceselor din natură bazată pe evaluarea numerică a entropiei maxime și pe evoluția proceselor în pași temporali. În anul 2004 am prezentat trecerea de la conceptul de modelare entropică la cel de teorie entropică bazată pe axioma unică a valorii aproximative $1/e$ pentru entropia maximă și pe trecerea de la discretizarea la cuantificarea timpului, asociind pasului temporal și dimensiunea de cuantă de timp. În prezenta lucrare se prezintă trecerea de la conceptul de cuantă de timp ca denumire pentru pasul temporal la conceptul de cuantă de timp definită pe baza observațiilor noastre asupra evoluției fenomenelor din natură. Cu ajutorul noii definiții a cuantei de timp se prezintă o generalizare a modelelor matematice bazate pe entropia maximă rezultând modelul denumit „formă canonică a grafului entropic”. Noul model matematic este în acord cu teoria relativității deoarece înlocuiește timpul absolut cu timpul propriu fiecărui proces, iar graful entropic sub forma canonică nu este legat de niciun sistem de referință. Noul model matematic este în acord și cu principiile fizicii cuantice, nu numai prin introducerea și a cuantei de timp ci și cu principiul de nedeterminare deoarece, prin noua definiție a cuantei de timp, caracteristicile procesului rămân neschimbate sau nedeterminate pe durata acestuia.

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Proceedings of the 11th International Conference on Quality and Dependability

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Multisensor Data Fusion using Fuzzy Logic for Wireless Sensor Networks

A.K. VERMA, A. SRIVIDYA, P. MANJUNATHA

Reliability Engineering, Indian Institute of Technology Bombay, Mumbai, India
akv@ee.iitb.ac.in, asvidya@ee.iitb.ac.in, manjup@ee.iitb.ac.in

Abstract

Wireless sensor network (WSN) consists of a large number of sensor nodes which are limited in battery power and communication range. One of the most important applications of WSN is environment monitoring. In this paper, we propose a novel method to analyze the problem of improving reliability and accuracy of the event detection, using fuzzy logic. In our proposed method each sensor node is equipped with diverse sensors (temperature, humidity light, and Carbon Monoxide). The use of more than one sensor provides additional information on the environmental condition. The processing and fusion of these diverse sensor signals are carried out using proposed fuzzy rule based system. The multiple data fusion process improves the accuracy of the sensed information and thereby minimizes the false alarm rate. Finally our results show that the proposed method is effective in improving the event detection.

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Reliability Modeling of a Complex System Considering Human Factor

Angelica BACIVAROV, Gabriel PETRICĂ

Laboratorul EUROQUALROM, Universitatea Politehnica din București
angelica@euroqual.pub.ro, gabi@euroqual.pub.ro

Abstract

This paper analyse a problem to complex socio-technical systems reliability evaluation taking into consideration the hardware, software and human components of those systems. Two mathematical models for the reliability analysis of redundant systems in the presence of hardware failures and human errors are developed. Reliability, steady state availability, mean time to failure (MTTF) and variance of time to failure formulas are developed for both models. Markov techniques were used to obtain the resulting expressions.

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Defect Diagnosis of Rolling Element Bearings using Morlet Wavelet Filter

A. SRIVIDYA, A.K. VERMA, B. SREEJITH, S.V. LAKHA

Department of Civil Engineering, Indian Institute of Technology Bombay, Powai, Mumbai, India;
Department of Electrical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai,
India; Interdisciplinary Programme in Reliability Engineering, Indian Institute of Technology
Bombay, Powai, Mumbai, India; Rotomech automation limited, Kandivali(E), Mumbai, India
asvidya@ee.iitb.ac.in, akv@ee.iitb.ac.in, sreejithb1@iitb.ac.in, lakhasv@gmail.com

Abstract

Detection and diagnosis of rolling element bearing defects of rotating machinery is necessary to prevent their malfunctioning and failure during operation. The localized defect in a rolling element bearing generates periodic impulses with a time period corresponding to the characteristic defect frequency. These impulses having relatively low energy are spread across a wide frequency band, which may be modulated and masked by noise and low frequency effects in the measured vibration signal. Wavelet transform is a variable resolution time-frequency analysis method capable of revealing the presence of impulses submerged in the vibration signal. A method for optimization of Morlet wavelet filter (MWF) using kurtosis is presented in this paper. The optimized MWF can be used to detect localized bearing defects from vibration signals. The effectiveness of the proposed procedure is demonstrated using simulated vibration signal of bearing with a defect in rolling element. Denoising of signals from ball bearings with rolling element defect and inner race defect are also performed. These results obtained with optimized MWF and discrete wavelet transform (DWT) are then compared. The application of optimized MWF for diagnosis of bearing faults has been demonstrated using simulated and actual signals.

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An Interdisciplinary Research Project in the Field of Dependability of Socio-Technical Resilient Systems

Ioan BACIVAROV, Angelica BACIVAROV

Laboratorul EUROQUALROM, Universitatea "Politehnica" din București, România
bacivaro@euroqual.pub.ro, angelica@euroqual.pub.ro

Abstract

The interdisciplinary researches developed in the frame of the project SOREZ - "Socio-technical systems resilient to errors / faults" have as purpose to improve the dependability - and especially of its main components- reliability and safety/security - of socio-technical systems, mainly through the use of errors/fault tolerance. For high functional importance systems (especially the electronic/information, nuclear, aeronautic and military ones) the failures may have important social-economic consequences. That's why, for these systems must adopted, beginning with the design stage, structures/strategies to avoid dangerous states. The thematic area of the theme of this grant is an important research domain, at both national and international level, as results from the papers of important recent scientific journals and international conferences in the field. A study of Defense Communication Agency (DCA) from USA, as well as a recent report of the European Research Program DPCS (coordinated by LAAS, France, one of the main European research centers in dependability) mentioned the importance of the researches in dependability field (considered in the synergy of its components: reliability, maintainability, safety/security a.o.) for high functional importance systems; these studies mention as a priority development of research programs concerning the problematic of dependability of socio-technical systems. An important research direction having as goal the reliability growth for high functional importance systems is the use of fault tolerance, an architectural attribute of a system which makes possible its operation, even in the presence of one or several faults in its structure. Certainly, in the context of critical socio-technical systems it is necessary to extend the researches to the error tolerant systems. At the same time, the studies mention that the approaches based exclusively on the technical aspects could be un-efficient in the case of the high functional importance systems, for which the human component could play an important role in the assurance of dependability/ security. That's why, a peculiar attention is given in the international researches to the human factor in complex systems. DHE (Designing for Human Error) became during the last period a large used method for the designers of high functional importance systems critical from the point of view of security or missions. From here the greater importance given in the last years to the studies related to human factors/errors, as suggested from the name of several European research networks mentioned bellow. At the European level a peculiar attention was given during the last years to the problem of dependability, especially for high functional importance systems, and in this context to the researches concerning fault tolerance techniques (the majority of these researches being effectuated in universities, or having universities as partners). Among the research projects / networks developed during the last years in this field, we could mention the following ones: TRUST – Testing and Consequent Reliability Estimation for Real-Time Embedded Software CONCORDIA – Integrated Environment for Reliable Systems JESSI-AC6 – Test Generation and Design for Testability Support PDCS – Predictably Dependable Computing Systems

DARTS – Demonstration of Advanced Reliability Techniques for Safety-Related Computer Systems
SCOPE – Software Certification on Programs in Europe PATRICIA – Proving and Testability for Reliability Improvement of Complex Integrated Architectures EMPA - Nano Reliability Network
MONET- Network of Excellence in Model-Based and Qualitative Reasoning Systems AMETMAS-
NOE – Network of Excellence in Advanced Methodologies and Tools of Manufacturing Systems.
Terms as "dependability", "security" and "resilience" are among the key words for many research fields from FP5 and FP6, as well as under the new program FP7. At the same time, they are among the priority terms/thematics from national research programs done under the aegis of CNCSIS (risk management, dependability and security growth a.o.). We could mention the following PC6 research projects in the field: ReSIST - Resilience for Survivability in IST DESEREC - Dependability and Security by Enhanced Reconfigurability HIDENETS – Scenarios and Resilience Solutions ESFORS - European Security Forum for Web Services SERENITY - System Engineering for Security and Dependability HIDENETS - Highly DEpendable ip-based NETworks and Services DESEREC - Dependability and Security by En-hanced Reconfigurability WS-Diamond - Web Services - DIAgnosability, Monitoring and Diagnosis CI2RCO - Critical Information Infrastructure Re-search Co-ordination Project IRRIS - Integrated Risk Reduction of Information-based Infrastructure Systems SEINIT - Security Expert Initiative POSITIF - Policy-based Security Tools and Frame-work
The interdisciplinary researches developed in the frame of this grant are in connection with three important research fields: high functional importance systems dependability, fault tolerance and human reliability/safety. The term of dependability is complex notion which includes the topics such as reliability, availability, confidentiality, safety and security. The most important technique for reliability growth is fault tolerance technique which will be used in the frame of this grant. At the same time another important research direction is human reliability/security, the human factor playing an important role in the case of majority complex, high functional importance systems. The implementation of high functional importance systems is very important in Europe, as well as in other developed countries, including USA and Japan; the results of these researches is the object of specialized conferences (as IFIP Working Conferences on Dependable Computing for Critical Applications (DCCA) or IEEE/IFIP International Conference on Dependable Systems and Networks, of the special issue of important journals (for example, Reliability Engineering& System Safety) and of specialized European research networks. The research related to fault tolerance were developed as a special research field during the last 30 years, related to the implementation of computer systems and of other systems of high functional importance systems (see, for example IEEE Transactions on Computers, IEEE Transactions on Reliability and Proceedings International Symposium on Fault-Tolerant Computers etc). The aspect related to dependable systems could be analyzed in two complimentary modes: system fault avoidance and fault tolerance, respectively. System fault avoidance could be used from the design phase by using reliable components and derating of systems components. But the complexity of the components/systems and the wear-out of components could limitate the use of this technique. Fault tolerance of a system is an architectural attribute that make possible the system operation, even in the system structure occur one or more failures. Fault tolerance is realized through a supplement of hardware/software resources of the system, through failure masking, or through the failure masking and system reconfiguration. It is important to mention that, generally, until now the researches concerning the fault tolerance considered mainly the technical components of the systems and no the human components. The researches regarding human factors intensified during the last two decades, based on the statistics that demonstrate the human failure are responsible for 25...40% of the failures of complex systems. The researches regarding human component, are mainly oriented to the high functional importance systems from military, but also civil field, and their results are the object of several international conferences (for example IEEE Symposium on Human Factors), or of special issues of prestigious journals from IEEE series. A special attention is given to the methods for human reliability/safety analysis, having as objective the identification of the criticality of human actions, determination of the corresponding probabilities,

minimization of the dependence among human actions etc Another important research direction in the field takes into consideration the human errors. The human error may be defined as an action which exceeds the acceptance limits. Some researches take into consideration development of interfaces between systems which limit the error risk. It is important for these interfaces to be adapted to the characteristics and limits of human operators. It is important to take into consideration and to model the complex interactions of all the involved factors (human, technical and ambiental ones). It is important to mention in this case the limits of some models based on the usual black-box concept. As demonstrated recent researches in the field, it is important to consider the non-deterministic character of human activity. The second step of our activities will take into consideration the structuring of the global system and the optimization of tasks for each sub-system. The researches to be done in the frame of this grant will take in consideration a quantitative evaluation related to human error/reliability as well as a deep study of the interaction technical-human in the dependability evaluation of high functional importance socio-technical systems. To conclude, the interdisciplinary researches which will be developed in the frame of this grant have as main objective the improvement of the dependability of socio-technical systems, which have a technical component, as well as a human one. The main points of these researches will be both human component, and on the global dependability evaluation of socio-technical high functional importance systems. These techniques are important and actual in the context of the researches in this field done at both international and national level. The research team includes specialists from each of the research domains and has as aim to bring theoretical and practical contributions concerning the dependability of socio-technical high functional importance systems. Among the objectives of this grant we could mention the following ones: - Development of the concept of socio-technical high functional importance system (STHFIS); - Quantification and modeling of the human component dependability in socio-technical systems (STS); - Development of new methods and models for human error analysis; - Development of a method for safety assurance and risk avoidance in STHFIS; - Proposal of strategies for fault/error tolerance in STHFIS; - Modeling of dependability performance for socio-technical systems with fault/error structure using specific indices; - Development of global models for dependability analysis/implementation in STHFIS with distributed structure, based on dynamic modeling of man-machine interactions and modeling of technical solidarity. These interdisciplinary researches will contribute at the development of new concepts from technical and human dependability and of an integrator vision in this important research field. Through this research, new approaches in reliability theory will be developed.

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Classification of Human Risks with the Method Analytical Hierarchy Process

Dorra AYADI, Lotfi AZZABI, Abdessamad KOBI, Christian ROBLEDO, Habib CHABCHOUB

ISGIS, Sfax, Tunis; FSEGS, Sfax, Tunis; LASQUO/ISTIA, Angers, France; LASQUO/ISTIA, Angers, France; ISGIS, Sfax, Tunis

dorra_ayadi@yahoo.fr, lotfi_azzabi@yahoo.fr, abdessamad.kobi@univ-angers.fr, Christian.Robledo@univ-angers.fr, habib.chabchoub@fsegs.rnu.tn

Abstract

In their competitive nesses research, and facing an uncertain environment, the firms search more and more to attain again objective. For that, it is necessary to minimize risks and unforeseen in their systems give complexes by the analyses of security; this one has been envisaged a long time of the technical point of view, as a first tentative to minimize risks and accidents. Then, the adoption of the security analysis on the flat engineering only for the risks elimination endures to run out of him taken in account different demonstrated variability by the human operator. The human operator as the basic postulate of events appearance of catastrophes and failures. However , issuing finders of diverse currents have to apply different methods to minimize risks of human errors, some have used combined methods taking counts him personals factors and engineering, others himself are supported on estimations probabilities to calculate trials of workers. The objective of this communication is to analyze human risks by application of multicriteria method to help the decision AHP (Analytical Hierarchy Cases) for to minimize human errors and to make firm a level of improvement of the long-term security . The application of the method Analytica IHierarchy process for classification the risks and causes will be assiduous as a first practice in a tunisian industry in order to visualize his importance level.

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Extending Health Considerations in Generation/Transmission Power System to Include Uncertainty Using Fuzzy Data

A.K. VERMA, A. SRIVIDYA, M.V. BHATKAR

Indian Institute of Technology Bombay, Powai, Mumbai, India; Indian Institute of Technology
Bombay, Powai, Mumbai, India; A.C.Patil College of Engineering, Navi Mumbai, India
akv@ee.iitb.ac.in, asvidya@ee.iitb.ac.in, mvbhatkar@ee.iitb.ac.in

Abstract

The basic objective of a modern power system is to satisfy the system load requirements as economically as possible and with reasonable assurance of continuity and quality. The currently available reliability assessment techniques can be divided into two distinct categories of deterministic and probabilistic techniques. The reliability parameters such as failure and repair rates of components used in the probabilistic models, there is considerable data uncertainty that exists in these parameters. Forced outage rate, is affected by two uncertain factors mainly, in case of two state models, such as failure rate and repair rate, it is appropriate to apply fuzzy mathematics to solve this problem. The a-cut of fuzzy mathematics model is used by considering the membership grade in a fuzzy set. The coupling between the presumption level and the confidence interval will be a popular way to define the concept of uncertain data of fuzzy numbers. The concept of fuzzy number (FN) has led to the development of fuzzy mathematics, has the capability of dealing with uncertain data in normal calculation. In this paper a framework to evaluate health analysis of the generation/transmission system by incorporating the fuzzy approach is suggested. The mathematical models of different parameters based on fuzzy concept are developed. The proposed methodology is tested on composite power system, to demonstrate the effect contingencies and uncertainties on power System health indices. The analytical results can serve as operating guide to the system operator.

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Survivability Analysis of Informational Systems

Ioan C. BACIVAROV, Ioan-Cosmin MIHAI

Electronics, Telecommunications and Information Technology Faculty, University "Politehnica" of Bucharest, Romania; Faculty of Law, Police Academy, Bucharest, Romania
bacivaro@danube.euroqual.pub.ro, cosmin.mihai@yahoo.com

Abstract

Unlike the traditional security measures that require central control or administration, survivability is intended to address unbounded network environment. Survivability is the capability of a system to fulfil its mission in a timely manner despite intrusions, failures or accidents. In this paper we develop a model to evaluate the tradeoffs between the cost of defense mechanisms for informational systems and the resulting expected survivability after a network attack. By varying the level of defense in the simulation, we examine how this expected survivability changes with the defense level.

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Decisional Strategies and Algorithms

**Costel CIUCHI, Angelica BACIVAROV,
Ioan C. BACIVAROV, Gabriel PETRICĂ**

Guvernul României, Direcția de Informatică, București; Facultatea de Electronică, Telecomunicații
și Tehnologia Informației, UPB, București
costel.ciuchi@gov.ro, angelica@euroqual.pub.ro, bacivaro@euroqual.pub.ro,
gabi@euroqual.pub.ro

Abstract

The process of globalization and development of information technology as tools of modern society undertake the organizations/ public institutions to use information technology to streamline the business, but also to facilitate collaboration between institutions or teams working in various areas to increase institutional efficiency at the national level. The necessity of a collaborative environment within the central administration leads to the unification of resources and tools around Central Working Aparatus (Center of Government), to determine the increase of productivity and efficiency of decision-making, either by speeding up the process of decision-making and improving quality of the decision itself.

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Reliability of Optical Communication Systems. On Transmission Quality Evaluation

**Ioan C. BACIVAROV, Angelica BACIVAROV, Fabrice
GUERIN**

University Polytechnica Bucharest Electronics, Telecommunications & IT, Dept.
EUROQUALROM Laboratory, Bucharest, Romania; ISTIA, University of Angers, LASQUO
Laboratory, Angers, France
bacivaro@euroqual.pub.ro, angelica@euroqual.pub.ro, fabrice.guerin@istia.univ-angers.fr

Abstract

Based on a detailed analysis of optical fiber communications systems reliability evaluation, the authors demonstrate that due to the quantum noise and the detection processes at optical frequencies, it is necessary to introduce new reliability indices with a higher degree of complexity; these indices take into account the quantum aspects of optical communication parameters, as well as the noise sources influences. In this paper an unified model for transmission quality analysis, which take into account the different optical fiber communications systems parameters, as well as the noise sources influences is introduced. This model will be developed based on the relationship between the error probability (P_e) and the different noise sources.

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Microbiosenzorii - noi oportunități privind managementul mediului și al siguranței alimentelor

L. GĂLĂȚEANU, M. BĂZU, V. ILIAN, J. PETRE

Laborator Fiabilitate, Institutul National de Cercetare-Dezvoltare pentru Microtehnologie,
Bucuresti, Romania; Laborator Analize Instrumentale, Institutul National de Cercetare-Dezvoltare
pentru Ecologie Industrială, Bucuresti, Romania
lucian.galateanu@imt.ro

Abstract

Utilizarea largă a pesticidelor pentru controlul dăunătorilor a făcut ca aceste substanțe să devină o sursă majoră de poluare. Legislația la nivel mondial a stabilit limite maxim admise pentru pesticide, acestea fiind de ordinul micro și nanogramelor/l. Detectia unor substanțe la aceste nivele de concentrație se realizează în laborator, prin metodele cromatografice, care implică costuri ridicate și o durată mare a procesului de analiză. Studiile pentru utilizarea biosenzorilor au demonstrat capacitatea acestora de a detecta selectiv și specific substanțele toxice de interes, într-un mod simplu, rapid și cu posibilitatea de a genera o informație continuă. Sunt evidențiate avantajele aduse de cele mai recente și promitatoare dezvoltări în domeniul microbiosenzorilor, legate de utilizarea tranzistoarelor cu straturi subțiri organice (Organic Thin-Film Transistors, OTFTs). Utilizarea microbiosenzorilor oferă noi oportunități în managementul mediului și al siguranței alimentelor permițând monitorizarea "on-line" a gradului de poluare a acestora.

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An European Microsystems Reliability Service Cluster

Marius BĂZU, Lucian GĂLĂȚEANU, Virgil Emil ILIAN

Reliability Laboratory, National Institute for Microtechnologies, Bucharest, Romania
marius.bazu@imt.ro, lucian.galateanu@imt.ro, virgil.ilian@imt.ro

Abstract

The paper presents the characteristic features of EUMIREL, an European research structure opened for co-operation with universities, research and industry involved in MEMS activities. EUMIREL is a Service Cluster fully autonomous in establishing its own goals and strategies of development [1]. Being a continuation of the NoE Patent-DfMM (European project 2004-2008), EUMIREL will ensure some basic services that are detailed in the paper.

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Insuring of the Resilience Against Denial of Service Attacks in Ad Hoc Networks

Constantin Alin COPACI, Dorina Luminița COPACI

ANRCTI, București, România; Tribunalul Gorj, Târgu Jiu, România
acopaci@yahoo.com, lcopaci@yahoo.com

Abstract

Resilience generally means the ability to recover from some shock, insult, or disturbance. However, it is used quite differently in different fields. In this paper, we will focus on studying resilience of ad hoc network. Thus, we will study DoS attacks in order to assess the damage that difficult-to-detect attackers can cause. The first attack we study, called the JellyFish attack, is targeted against closed-loop flows such as TCP. The second is the Black Hole attack, which has effects similar to the JellyFish, but on open-loop flows.

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Integration of the Quality Management System with the Social Accountability Management System and the Occupational Health and Safety Management System According to the Requirements of ISO/DIS 9001:2007, SA 8000:2008 and BS OHSAS 18001:2007

Romeo DENUNTZIO

Lead auditor, S.C. SRAC CERT S.R.L., Bucharest, Romania
denuntzio@yahoo.com

Abstract

The paper establishes a method of integration of the quality management system with the social accountability management system and with the occupational health and safety management system. For the integration of the three management systems the paper establish the table of correspondence between the requirements of the quality management system defined in ISO/DIS 9001:2007, the requirements of the social accountability management system defined in SA 8000:2008 and the requirements of the occupational health and safety management system defined in BS OHSAS 18001:2007. Finally the paper establish the structure of the integrated management system in the list of the requirements of the integrated management system quality-social responsibility- occupational health and safety.

Responsabilitatea socială corporatistă în condițiile europenizării și globalizării. Oportunități și constrângeri pentru economia românească

Steluța Elisabeta NISIPEANU

Secretar Stiințific, Institutul National de Cercetare-Dezvoltare pentru Protecția Muncii Alexandru
Darabont, București, România

Abstract

As an inspiring and strategically important development, corporate social responsibility (CSR) is becoming an increasingly important priority for companies of all sizes and types. Occupational safety and health (OSH) is an essential component of CSR and this presents managers and OSH professionals with a variety of opportunities and challenges. With increasing globalisation, greater environmental and social awareness and more efficient communication, the concept of companies' responsibilities beyond the purely legal or profit-related has gained new impetus. Businesses need to be seen acting responsibly towards 'people, planet and profit'.

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The Importance to Evaluate the Clients' Satisfaction Degree

Andrei Octavian PARASCHIVESCU

Faculty of Management, "George Bacovia" University, Bacău, Romania
adiparaschivescu@yahoo.com

Abstract

The complex and correct evaluation of the requests and of the clients' or beneficiaries' level of satisfaction provides important information to the organizations ,regarding both the extent in which the planned objectives have been attained, that is: the need of implementing some improving, preventive or corrective actions and information regarding the progress that has been made. This work focuses on a possible system of managing complaints and on underlying a strategy of improving quality with the help of the clients and of the other persons whom are interested in this.

Keywords: client, satisfaction clients, stakeholders, TPV Strategy

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Implementarea și certificarea SMSI - condiție necesară succesului unei afaceri

Ioan POPA

Departament SMSI, SRAC CERT, București, Romania
ioan.popa@srac.ro

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Application of Six Sigma and Promethee Multicriteria Method to Select the Product System

**Lotfi AZZABI, Dorra AYADI, Abdessamad KOBI, Christian
ROBLEDO, Younes BOUJELBENE**

Institut Supérieur de Gestion de Gabes, Tunisie; Institut Supérieur de Gestion Industrielle de Sfax,
Tunisie; LASQUO/ISTIA Angers-France; LASQUO/ISTIA Angers-France; Faculté des Sciences
Economiques et Gestions de Sfax, Tunisie

lotfi_azzabi@yahoo.fr, dorra_ayadi@yahoo.fr, kobi@istia.univ-angers.fr,
Christian.Robledo@univ-angers.fr, boujelbene.younes@yahoo.fr

Abstract

The present competitive market is focusing industrial efforts on producing high-quality products with the lowest possible cost. Currently and for a long time, quality is the centred of the concerns of the industrial organizations, which provide products intended to satisfy the customer requirements. The total performance of the process and the quality of its production depend on the one hand, of the characteristics of the intermediate products, and on the other hand, of the operation parameters of the manufacturing. To help accomplish this objective, various quality improvement philosophies have been put forward in recent years and of these Six Sigma has emerged as perhaps the most viable and efficient technique for process quality improvement. The objective of this paper is to propose a method that puts in obviousness the enforcement performances improvement Six Sigma to assure high level quality products and to make firm a level of improvement of the long-term performance. The application of the Six Sigma methods enforced with multicriteria approach especially the Promethee methods to permit classification the better's choices of a Tunisian industry in order to visualize his importance level.

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Risk Management as a Catalyst for Integrated Management Systems

Liliana NIȚU, Lucian Daniel NIȚU, Gheorghe SOLOMON

Secretary General, Romanian Association for Quality - ARC, Bucharest, Romania; General Manager, Romanian Society for Certification – ROCERT, Bucharest, Romania; Quality Manager, Politehnica University, Bucharest, Romania
liliana.nitu@quality.ro, lucian@rocert.ro, gheorghe.solomon@gmail.com

Abstract

The continual increase of the competition on the market leads to the need of organisations to achieve and maintain compliance to standards such ISO 9001, ISO 14001, OHSAS 18001, ISO 27001, ISO 22000 a.s.o. Having an effective and efficient management system is now more important than ever. That means improving information flow, and the level of knowledge in the organisation, with the same or even less administration effort. An organization can get a highest return on investment if will take advantage from the similarities between these standards, by integrating them into a single one system. There are very common processes involved so it is more reasonable to direct the effort towards developing one Integrated Management System, in order to facilitate the documentation and operation control and save money and time. More over, the Integrated Management System it is the first step to sustainable development of the organization, the future of business performance. One more reason to look in an integrated way the management systems is that these systems have a common goal: Risk Management. Risk Management, in general, is a process aiming at an efficient balance between realizing opportunities for gains while minimizing vulnerabilities and losses. It is an integral part of management practice. ISO 9001 helps management develop good products with minimal quality RISKS, ISO 14001 includes environmental RISK management and OHSAS is dealing with OH&S RISKS a.s.o. The nature of risks is different but the way to manage the risks is similar. The paper will examine the fields of risk management in relation with integrated management system and will try to answer to the following question: how risk management and integrated management system interferes each other, how risk management improves the integrated management system and vice-versa.

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Marketing and Financial Knowledge

Constantin CODERIE, Mircea UDRESCU

Dean of Management and Marketing Faculty, University ARTIFEX - Bucharest; Professor, Faculty
of Management and Marketing, University ARTIFEX - Bucharest

Abstract

Several division managers consider that financial analysis of all divisions depend on the competence of the specialists in the field and not of their responsibility. Some marketing managers do not distinguish as well between financial-accounting department of the activities they coordinate and general financial-accounting indicators of organizations. Further on we will sustain that each division activity, by exemplifying the marketing, has a financial-accounting component that must be led and require financial-accounting knowledge that influence the general financial-accounting company indicators.

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Quality – Environment – Occupational Health and Safety – Food Safety Integrated Systemic Approach for Water Supply Operators – Path Toward TQM

Daniela Simona MOLDOVAN

Compania Apa Braşov, Romania
danielamoldovan@apabrasov.ro

Abstract

The successful keeping of a performing water management in an integrated manner by quality – environment – occupational health and safety – food safety systemic approach allow the investigation of management system and leads to the objectives and targets fulfillment. The motivation to raise a management integrated system, with SMART features and objectives by reporting to standard requirements, has as support internal forces (manager vision) or external forces (requirements related to regulation). A quality – environment – occupational health and safety – food safety management integrated system to include issues regarding: satisfaction of clients' requirements, staff training, deal with claims, improvement of relationships with interested parts, control of environment issues, the risk factors for human occupational health and safety, the risks regarding the safety of drinking water should be a strategic decision of each operator from the field of water supply services. The paperwork shows the concept of integration, equivalence between the four management systems and the valuation issues in the management integrated system, as well as the opportunities to improve the operators of water supply services which adopt this systemic approach.

Keywords: quality, environment, occupational health and security, food safety, water supply services

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Integrarea Mentenanței Productive Totale (TPM) cu Managementul Total al Calității (TQM) fundament pentru excelența în fabricație

Constantin MILITARU, Daniel GEORGESCU

Facultatea Ingineria si Managementul Sistemelor Tehnologice, Universitatea POLITEHNICA din Bucuresti; doctorand, Facultatea Ingineria si Managementul Sistemelor Tehnologice, Universitatea POLITEHNICA din Bucuresti

Abstract

In this article are presented particular facts that must be considered to implement an TMP system in factories, importance of all 12 TQM's concepts, acumulated experiences and technics used.

Keywords: quality, quality management, Total Quality Management (TQM), maintenance, Total productive Maintenance (TPM)

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Statistical Methods Used in Quality Management of the Electrical Energy

**Petruța MIHAI, Mihaela MATEI, Claudia L. POPESCU,
Mihai O. POPESCU**

Dept. of Measurements Electrical, Apparatus and Static Converters, University "Politehnica" of Bucharest, Romania

mihaipetruta@yahoo.com, mateimichelle@yahoo.com, claudia@apel.par.pub.ro,
mo_popescu@rectorat.pub.ro

Abstract

As part of this paper, the main purpose is to present the elaboration methodology of some forecasts in the energy consumptions area, using few mathematical models. The forecast for energy consumptions is realised for a short period of time with a mathematical model, probabilist type, because the analysis is taken place from past to future and the independent variable is the time, and we consider that the prognosis is direct.

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The Contribution of the BS OHSAS 18001:2007 to the Compliance with EU Directives and National Legislation

Steluța NISIPEANU, Raluca STEPA

National Research Institute for Occupational Health and Safety Alexandru Darabont , Bucharest,
Romania

Abstract

The recent experience of Eastern countries shows that implementing an occupational management system made the process of adjusting to the newly harmonized legislation much easy. Many enterprises have implemented and certified an occupational safety management system achieving a performance that allowed them to comply with the national legislation and lay the basis for a real continual improvement. The new version of OHSAS 18001 represents an organizational instrument that helps to manage in organic and systematic way the safety and health in workplaces conditions. The parallel between the requirements of the new management systems referential and the provisions of the EU Directives help those who have a system to enforce the legal compliance while those that have not yet implemented one will use the harmonized legal requirements as a start for building a system.

Keywords: management systems, occupation safety, EU Directives

Risk Management in Complex High Functional Importance Systems

Florentina LINCĂ, Angelica BACIVAROV, Ioan BACIVAROV

EUROQUALROM Laboratory, University "Politehnica" of Bucharest, Romania
florentina@euroqual.pub.ro, angelica@euroqual.pub.ro, bacivaro@euroqual.pub.ro

Abstract

The authors present some problems concerning the risk evaluation in complex high functional importance systems. They present comparatively the methods that could be used in the process of risk analysis. A case study regarding the risk analysis of a nuclear reactor, based on the proposed methodology is included, also.

Keywords: Risk analysis, complex system, FMEA, HAZOP, ETA, FTA, PHA, ECCS

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The Improvement of Environmental Performances by Implementing Parallel Methods of Evaluation of the Impact Associated to Environmental Aspects

Daniela Simona MOLDOVAN

Compania Apa Braşov, Romania
danielamoldovan@apabrasov.ro

Abstract

Starting from the premise that there is no economic and/ or social activity without ecological implications, it is necessary for every organization to have management means, planning, organization and a strategic approach that is based on techniques and devices for environment protection, promoting the concept of continuous development. Understanding this concept, in compliance with respecting the environment, we will be able to maintain the legacy for the wellbeing of the future generations. The primordial role in implementing and maintaining the environment management system is the accurate identification of environmental aspects, and the evaluation of the last, present and possible environmental impacts, generated by the activities of an organization. The paper presents the process of identification of environment aspects, the evaluation of associated impacts, and also two evaluation methods that can be used in parallel by any organization that implements an environment management system, with the purpose of improving the performances in this field of activity.

Keywords: environment management system, performance, environmental aspect, environmental impact

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From an Employees' Concept of Satisfaction to the Construction of a Measurement

Rémy GAUTIER, Stéphanie IBANEZ, David OUAHNOUNA

Maître de Conférence, HDR, LCPI, ENSAM Paris; Doctorante, LCPI, ENSAM, Paris; Docteur, thèse soutenue en 2004, LCPI, ENSAM, Paris

Abstract

Because employees' satisfaction is as critical for the development of a company as is the satisfaction of the shareholders and customers, it is essential to take the temperature of the social body and follow its evolution. The BSI is a monthly enquiry, connected to the EFQM, to the PFQ and to the 2000 version of ISO 9000, carried out by persons specialised in human resources, on a representative sampling of the personnel and realised over a number of years. This paper analyses the use of BSI, which is a modular and proven tool, easy and fast to put into place which favours observation, measurement and prospecting. It permits an employees' satisfaction measurement to be made in numerous companies in the field of Quality or Total Quality Management where this aspect is today often missing. Constructed with scientific rigour, respecting sociological rules, it reflects in an objective and precise way, the opinions of the personnel, and especially it quantifies these opinions on the basis of a human science methodology. Management can thus use the results to establish a system of hierarchy among the problems and determine which of them must be solved first. It also offers the possibility of developing a social benchmarking permitting a comparison to be made with respect to other units of the group and other companies. The BSI expresses management's wish to promote social dialogue in order to optimise performance. It is a means of listening to the voice of the employees, of better understanding their motivations and relationships with the management, to verify their comprehension and their sharing of the stakes in order to work more efficiently. It valorises and permits the development of their involvement and contribution. Its follow up over a period of time constitutes a true data base and facilitates the piloting of the social and managerial indicators in the field of employees' satisfaction. Using Engager the BSI, means functioning with a completely novel approach.

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Proceedings of the 11th International Conference on Quality and Dependability
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Model for the Implementation of a Project Risk Analysis Method in Companies

Rémy GAUTIER, Vanessa VERDOUX

ENSAM - Product Design and Innovation Laboratory
remy.gautier@paris.ensam.fr, vanessa.verdoux@paris.ensam.fr

Abstract

Companies that choose innovation as a development strategy have to deal with management of the risks inherent in their projects. Risk analysis, which was long confined to the control of product and process risks, is progressively gaining ground in project management. In this context, we elaborated an original method called PIFA (Project Information Failure Analysis), which has undergone several research trials. During our experimentation on industrial projects, we identified two parameters that contribute to its success: the validity of the method and the efficiency of the means of its implementation. In this paper, we examine this second parameter, based on the elaboration of a model for the implementation of this method. This model comprises the methodology for the definition of a PIFA Manager, support tools and guidelines for the integration of product and process risk analyses into project risk analysis. In this publication, we present this model, the experimentation conducted in the context of risk analyses in new product Design, and process design projects in the research and development centre of a major industrial group.

Keywords: Project risks, innovation, design, new method, tools, risk managers, software, product/process reliability

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Service Quality Analysis of “E-ticketing” Services by UK’s Low Cost Airlines

**Michele CANO, Athanassios KOUROUKLIS, Gaurav
KHURANA**

MSc BEng (Hons), University of Paisley; PhD, BSc (Hons), University of Paisley; MSc, University
of Paisley

michele.cano@paisley.ac.uk, kour-em0@paisley.ac.uk, gk031954@student.paisley.ac.uk

Abstract

Book, pay and fly! That’s what almost all low cost airlines are offering their customers today. But is the whole process of “e-ticketing” so easy and are these low cost airlines able to provide customers with quality “e-ticketing” services? There is a clear need to develop better understanding of how consumers evaluate these “e-ticketing” services and whether these services meet customer expectations. This paper presents an e-ticketing service offering model that was developed from an empirical study of “e-ticketing” services, coupled to extant theories about service quality, customer satisfaction and loyalty. Additionally, this paper highlights managerial implications and makes recommendations, which suggest avenues for improving service quality of “e-ticketing”, service offerings and, as a corollary, enhancing consumer experiences and perceptions.

Keywords: Service Quality, “e-ticketing”, Low Cost Airlines

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Proceedings of the 11th International Conference on Quality and Dependability

Sinaia, Romania, September 24th-26th, 2008

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Process Innovation – Organization Improvement and Performance Increasing Method. Case Study: Test Process Innovation in the Test Desks Areas for Electric Equipments Functional Tests

Irina TIHAN

Quality Management Department, S.C. ICPE SAERP S.A, Bucharest, Romania
irinatihana@yahoo.com

Abstract

The paper was elaborated as a result of ICPE SAERP and SRAC cooperation in PIM project (Improving innovation in business processes management of Eastern Europe SMEs by using Qualified Process Innovation Managers), and participation in INNOVATION programme with a same project proposal. Innovation represents one of the Europe Union economic rising way and, in the same time, one of the Romanian economy performance rising way, and for SMEs. In accordance with COM 688/1995 (European Commission Communication), „innovation” consists of : a) Introduction of new products families, new services and associated markets, the extension of them. b) Establishing new product method, purchasing and distribution. c) Introduction of management changes, work organization, work conditions and personnel training. A process innovation is the implementation of a new or significantly improved production process, distribution method, or support activity for the enterprise goods or services. The innovation (new or improved) must be new to the enterprise, but it does not need to be new to the sector or market. The paper is an identification study of the test process innovation (improvement), innovation impact evaluation and the base creation for the management systems development in the organization. It starts from the classic ways, mentioned in SRENISO 9001: 2001, for QMS efficacy continuous improvement and analyses the test process as a part (sub-process) of the service, complains solving process, modernizing, general revision process.

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Project Management Applied to the Implementation of a Quality Management System in Leather and Footwear Industry

Elena NECULA, Viorel PETRESCU

Quality & Environmental Department, Eurosmart Systems, Bucharest, Romania; Faculty of
Commerce, Economical Studies Academy (ASE), Bucharest, Romania

Abstract

We are living hard times regarding the answers which we are supposed to give to the questions about the consequences of the integration into the European Union. We try to identify the criteria for the presence on the EU market, which is permanently changing or is rather struggling to adjust itself to the globalized market. Therefore, the leather and footwear industry faces many difficulties and searches solutions for improving its activities, for entering and remaining on the EU markets. Applying the project management to the implementation of the Quality Management System (QMS) in leather and footwear industry would be a solution? The association of the two concepts - management and project - provides the necessary framework for continuous improvement - the main goal of each organization. This way, Management represents the state of mind, the mentality, the culture, the belief that everything is perfectible and has to be continuously improved by each member of an organization, while Project indicates a systematic way of implementing these improvements, seen as a process and acting as a process by adding value.

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Intelligent System Used for Measuring Parameters for Water Supply and Discharges in Order to Obtain Integrated Water Management

**Tudor Cătălin APOSTOLESCU, Despina DUMINICĂ,
Constantin UDREA, Nicolae ALEXANDRESCU, Silvia MIU,
Ecaterina POPESCU, Doru Dumitru PALADE, Veronica
CRAIU, Florentina BADEA, Constantin PLOEȘTEANU**

CCDM-UPB, Bucharest, Romania; CCDM-UPB, Bucharest, Romania; CCDM-UPB, Bucharest,
Romania; CCDM-UPB, Bucharest, Romania; CCDM-UPB, Bucharest, Romania; INCDMF,
Bucharest, Romania; INCDMF, Bucharest, Romania; SC TECHNOVOLT SRL, Buchares, Romania

Abstract

The efficient water resources management represents a prime issue both on the national as well as in the international agenda. In order to do this, the entities that activate in the field need efficient tools and methods for real time measuring of the physical and chemical parameters and disposed and recovered water quantities. Debt, level and parameter measuring for the water in rivers, streams, channels and disposal pipes represents a critical issue, very hard to solve with the aid of current means. Public and private companies that are responsible for water disposal have limited budgets and can not support the implementation of water debits and parameters with available measuring means. By using online qualitative and quantitative information, a proper action can be taken in time in order to prevent and limit both ecological accident and logging effects. The efficient management of the water resources is conditioned by the development of an regional integrated equipment and qualitative and quantitative water characterization method network accessible through Internet and helping to the implementation of the Directive no. 90/313/EC of the Council on the free access to environmental information and the privind accesul liber la 137/1995 Law on the preservation of the environment, modified and re-published 2000 and the completion of integrated water management. The entry data, as well as the outcomes will be available for use in the Environmental Information and Observation European Network (EIONET) reports and will stand at the basis of the environmental strategies implemented at European level. Measuring water debits and other important parameters and granting access to organizations acting in this field to this data constitutes a premise for the efficient natural resources management activities or for the hazards prevention and prognosis actions (especially water pollution and floods).

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Metoda Taguchi - metodă de control în optimizarea costurilor calității

Victor ANDREI

S.C. Victor Prodinvest S.R.L., București
victorprod@gmail.com

Abstract

Strategia adoptată de Taguchi constă în combinarea tehnicilor de inginerie cu cele de statistică pentru a obține ameliorarea rapidă a costurilor calității. Taguchi a stabilit relația care există între funcția de pierdere a calității și raportul Semnal/Zgomot care permite stabilirea începutului dezvoltării unui produs în timp util și totodată a ameliorării rezonabile a costurilor. Strategia adoptată de Taguchi caută să limiteze influența factorilor considerați paraziți, cum sunt factorii zgomot, căutând să limiteze sau să minimizeze impactul acestora. Concret, această metodă caută să identifice combinațiile de parametri care reduc efectele acestor cauze, fără ca acestea să fie atacate în mod direct. Strategia lui Taguchi precizează că se câștigă mai mult măbind numărul de factori controlați, deci se pot tolera eventualele interacțiuni. Din acest punct de vedere este mai bine să se contureze problemele decât să fie abordate din plin. Pentru a face acest lucru demersul trebuie să fie eficace, adică să se înceapă printr-un experiment de selectare, și dacă este necesar să se continue studiul prin una sau mai multe experimentări pentru afirmarea acestor răspunsuri.

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Comparative Methods for Environmental Aspects' Evaluation

Mădălina Silvia IGNATOV, Valeriu PANAITESCU

Auditors Development Centre, Faculty of Engineers and Technology Management, Polytechnic University of Bucharest, Romania; Hydraulics and Hydraulic Machines Department, Faculty of Energetic, Polytechnic University of Bucharest, Bucharest, Romania
ignatov.madalina@rdslink.ro, valp@hydrop.pub.ro

Abstract

To follow an environmental policy, to establish coherent environmental targets any aspiring organization in applying an Environmental Management System (EMS) must assure itself that its significant environmental aspects are taken in consideration. More than this, to establish and measure year by year the environmental performance of a certain organization (in our case, the environmental performance of the thermo electrical power plants - TEPP) we must identify the environmental aspects relating with power producers' raw materials, wastes and activities and to evaluate them. In spite of these, doesn't exist a standard method for environmental aspects quantitative accounting, in most cases the used methods are qualitative. In this paper we propose ourselves to discuss some quantitative methods for environmental aspects accounting and compare them.

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Improvement of QMS Performances by Using the Statistics Techniques in Control of Quality in the Process of Water Treatment for Free Residual Chlorine

Daniela Simona MOLDOVAN

Compania Apa Braşov, Romania
danielamoldovan@apabrasov.ro

Abstract

One of the priority tasks in quality management is to find the most appropriate procedures to describe and to then to influence the progress of processes which are directly address to their quality and capability. For this purpose were developed the concept of control sheets as fundamental tool for statistic control of process quality. The control sheets provide a simple graphic method to asses is the process had reach or not “the statistic control status” or if it is maintained. The assessment is performed by comparison of values or methods of one or more statistics calculated on a ordered series of samples or sub-groups with control limits. There is a variety of typical control sheets, each drafted for the types of decisions that should be made, nature of dates and the type of used statistics. The paperwork describes an experimental study regarding the capability of drinking water treatment process for the content of free residual chlorine, using the control sheets for the individual values and mobile amplitude, for two points of drinking water sampling: at the entrance in drinking water supply network of Brasov City and towards the end of supply network.

Keywords: performant, quality management, capability, control sheets, water treatment

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The Excellence Management and the Quality Culture within the Public Institutions

Andrei Octavian PARASCHIVESCU

Department of Management, University "George Bacovia", Bacau, Romania
adiparaschivescu@yahoo.com

Abstract

The predominant conception within the last few years when formulating a philosophy dealing with quality is to attain excellence, respectively realizing products, processes and services having superior characteristics to those offered by the competition, over-passing the standards. The excellence is the attained performance at a certain moment within a competition based upon exigent and complex criteria. The path to the excellence of a public institution is based upon the principle of a permanent improvement, upon the quality cult, upon adapting to change, diversity and competition, upon the excellence management. The quality cult becomes a complementary element for the economic activity; it should be transmitted to all the participants involved in economic and social processes engaged in order to obtain value. An immense role in the process of cultivating the inclination towards quality is giving to education, but also to the management. The quality culture starts from the managerial culture! The management can be changed without costs - the wrong product/non-adequate service can not be replaced! At this point, the quality strategic management can interfere. The quality strategic management (QSM) represents a new culture at highest levels of the organization. In order to introduce QSM there is a need for initiative and change from the part of the senior managers and of personal implication, and of a management of excellence. Excellence is permanent competition. Further more, by applying the Deming's principle, PEVA (Plan - Execute - Verify - Act), over the spiral of quality we can have an image of the path towards excellence. Excellence is the record obtained in a competition at a certain moment in time (T1 time). It follows a new competition. The battle for quality continues. A new record may be obtained (T2 time) and then another and another. The paper aims to make a comparative analysis, an illustration of the way in which excellence sustains the improvement of quality or how the permanent improvement of quality leads to excellence. The conclusion is that both models have as a base the excellence of the individual, the excellence of the team, the excellence of the management. The analysis is useful in any organization, more over, within the public institutions where the human factor is decisive.

Keywords: quality, excellence, excellence management, permanent improvement

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Evaluarea criterială comparativă a instituțiilor de învățământ superior - practici, metode, criterii, rezultate, limite

Nicolae George DRĂGULĂNESCU

Universitatea Politehnica din București, Visiting Professor – Chung Ang University of Seoul, South
Korea, Secretar general - Fundația Română pentru Promovarea Calității
nicudrag@artelecom.net

Abstract

Ranking of different products/ services/ organizations according to their basic characteristics is – for their customers/ beneficiaries - a very valuable, useful and necessary information source. Ranking usefulness can be achieved by so-called “multi-criteria comparative assessment” and by largely and freely disseminating of its provided data and information. This “multi-criteria comparative assessment” is a free-market self-regulatory tool based on very basic customer right to be informed before taking the decision to acquire and on customer behavior to acquire only products/ services providing highest/ best quality-price ratio. Disseminated rankings are freely consulted by prospective customers of these products/ services and may significantly affect their selection decision process as well as, consecutively, some basic business results of their providers. This paper introduces the today’s most important national, regional and international rankings existing around the world in higher education, high lightening their actual basic practices, methods, criteria, results and limits. Rankings in higher education may include academic institutions (or only some of their departments) as well as academic programs, etc. being based on a predefined set of criteria, indicators and weights. Their input data may be either some specific statistical data, and/ or results of surveys (of educators, of prospective and existing students – undergraduates - of graduates, scholars, employers, etc.) and/ or results of dedicated third-party external assessments. The credibility of provided higher education rankings vary significantly because they may be conducted either by mass media’s publishing houses, by profit or no-profit organizations, by first, second or third party organizations (including academic practitioners) and so on. Thus, in some situations, their manipulating character may become obviously.... The paper conclusions are including some hints and necessary measures to be adopted by Romanian universities and educational authorities in order to comply with international practices of higher education rankings.

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Environmental Performance into Thermoelectric Power Plants

Mădălina Silvia IGNATOV, Valeriu PANAITESCU

Auditors Development Centre, Faculty of Engineers and Technology Management, Polytechnic University of Bucharest, Romania; Hydraulics and Hydraulic Machines Department, Faculty of Energetic, Polytechnic University of Bucharest, Bucharest, Romania
ignatov.madalina@rdslink.ro, valp@hydropub.ro

Abstract

One of the progressive concepts – Environmental performance - is going to occupy quite a high profile in the challenge to de-link economic growth, sustained by energy production, from environmental degradation and to become one of those areas where research at both – the theoretical and corporate level positively flourishes. In this paper we try to present some environmental performance indicators and methods and their applying into Thermo- electrical Power Plants. The results obtained were used to set operating performance indicators and environmental condition indicators based on the ISO 14031 standard and accomplish the Environmental Performance Evaluation.

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Competitive Intelligence and Benchmarking Models in Higher Education

Maria Cristina MENDONÇA
IPCDVS – Universidade de Coimbra, Portugal

Abstract

Competitive Intelligence CI is a systematic and ethical program for gathering, analyzing, and managing external information that can affect the company's plans, decisions and operations. It is a crucial part of the emerging knowledge economy. By analyzing rival's moves, CI allows companies to anticipate market developments rather than merely react to them. Within this framework, benchmarking can involve ten steps: identify what's to be compared; identify comparative companies; determine data collection method and collect data; determine performance "gaps"; define future performance levels; communicate benchmark findings to the organization; establish goals to be attained; develop plan; implement and monitor progress; and recalibrate benchmarks. We propose to discuss several models of benchmarking in the scope of competitive intelligence in Higher Education.

Keywords: Competitive Intelligence, Benchmarking Models, Higher Education

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Quality Management in Australian Organisations. A Longitudinal Approach

Ton van der WIELE, Alan BROWN

Professor ,Erasmus University Rotterdam, Rotterdam, The Netherlands; Professor, Edith Cowan University, Perth, Australia

Abstract

Quality management activities in five large Australian organisations have been monitored over a decade and present the basis for an insight into the factors which impact on the sustainability and direction of quality management over the longer term. Using a longitudinal research approach, the quality management strategies and activities in these organisations have been examined through periodic interviews with quality managers along with examination of relevant company documents. Findings identify a number of factors which impact on the continuity of quality management over the longer term. These include: the tenure of the CEO and the executive board; the quality foundations which have been created through quality initiatives in the past; the driving force behind the quality management journey; the management system and the extent to which quality is integrated into the system. Other factors include the role of audits and assessments, the role of quality frameworks, customer orientation and information systems. Even dramatic downsizing within an organisation does not necessarily curtail the attention given to quality management issues, although in all cases it forces it to create stronger linkages between the business plan and quality management activities.

Keywords: Case studies, TQM, Sustainable development

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Quality - Safety Management System in Maritime Companies

**Raouia EL AYADI, Amin LAGLAOUI, Abdelhak SOUAL,
Abdelgheni CHERKAOUI, Said BARRIJAL, Abdessamad
KOBİ**

Universite Abdelmalek Essaadi, Faculté des Sciences et Techniques de Tanger, Maroc; Compagnie Maritime Casablanca, Maroc; Ecole Mohammadia d'ingénieur /Génie Industrie, Rabat, Maroc; LASQUO/ISTIA/ Université d'Angers, France
raouia81@yahoo.fr, laglaouiamin@yahoo.fr, soual@comanav.co.ma, cherkaoui@emi.ac.ma, barrijal@yahoo.fr, kobi@istia.univ-angers.fr

Abstract

Everywhere competition makes rage. It is synonymous with progress and plays part of a filter eliminating the companies which are not able to adapt and which cannot produce under competitive conditions. The notion of the quality and the satisfaction of the customer pass then in the foreground and become a need and not a choice. We cannot be satisfied any more with obligatory certifications [ISM, ISPS.], it is necessary to operate with rationalization while respecting the final objective which is the customer. A non-protected environment is often at the origin of a bad environment within the company and predisposes the bad quality and increasing the accident risks. So the installation of a system of management of quality can make a success of the safety approach. A quality management system is inseparable of work conditions, safety and environment. Our communication relates to the study of the requirements of standards ISM and ISO 9001. We detailed the requirements in order to show the points of resemblance which can facilitate to us the introduction of system of management quality in the presence of a system of management safety without deteriorating the structure of this last.

Keywords: ISM code, ISO 9001 v 2000, maritime safety, quality management

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Sinaia, Romania, September 24th-26th, 2008

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EMAS – instrument al dezvoltării durabile. SRAC – în sprijinul înregistrării EMAS a organizațiilor

Felicia IOANA, Elena ZINCA

Consilier superior – Directia Controlul Poluarii si Managementul Riscului, MMDD; Director tehnic
– SRAC, Romania

felicia.ioana@mmediu.ro, elena.zinca@gmail.com

Abstract

EMAS, cel mai eficient instrument al dezvoltării durabile înseamnă PERFORMANTA – EMAS este schema voluntară de management de mediu și audit, cu obiective de îmbunătățire a performanței de mediu a organizațiilor prin angajamente proprii de evaluare și reducere a impactului asupra mediului, CREDIBILITATE – prin natura externă a înregistrării și a procesului de verificare, precum și prin publicarea informațiilor din declarația de mediu validată, EMAS asigură credibilitatea și încrederea publică. TRANSPARENȚA – unul din principalele obiective ale EMAS este informarea publică prin intermediul declarației de mediu. Aceasta oferă publicului informații asupra impactului de mediu, asupra performanței de mediu și asupra modului în care organizația se implică activ, prin angajatii săi, în implementarea EMAS.

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Waste Management System into the Thermal Power Plants

**Ovidiu ȚUȚUIANU, Constantin MOLDOVEANU, Victor
URSIANU, Aurelian VASILE**

SC Nova Industrial SA, Bucharest, Romania
office@novaindustrialisa.ro

Abstract

The work shows a Waste Management System (WMS) for Thermal Power Plants (named NOVA – WMS), which had been drafted in accordance with the Environmental Management System recommended by the international standard ISO 14001:2004. For the WMS implementation into Braila Thermal Power Plant (having an installed capacity of 647 MWe), authors have elaborated: - a Waste Management Manual; - an Operational Procedure for non-hazardous wastes; - an Operational Procedure for hazardous wastes; - an application of the software application associated to the WMS. NOVA – WMS and its associated software application (named NOVA–Thermal Power Waste Manager) assure, for any Thermal Power Plant (having different type or capacity), the growths of economic efficiency and the mitigation of negative environmental impacts during the operation and maintenance activities. These things are possible by using a rigorous waste monitoring (from physical, economical and informatical points of view) on the entire flow, from generation up to elimination.

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Ecosense. A New Approach in Environmental Modelling

Mădălina Silvia IGNATOV, Valeriu PANAITESCU

Auditors Development Centre, Faculty of Engineers and Technology Management, Polytechnic University of Bucharest, Romania; Hydraulics and Hydraulic Machines Department, Faculty of Energetic, Polytechnic University of Bucharest, Bucharest, Romania
ignatov.madalina@rdslink.ro, valp@hydrop.pub.ro

Abstract

EcoSense is an integrated model for impact pathway assessment and has been successfully used by numerous studies on air pollution impacts. Various databases, including data on emissions, meteorology and population distribution, are linked to the program system. These are used together with air quality models for the estimation of impacts from air pollution (including the pollution generated by power plants). The impacts to be considered are human health effects (from SO₂, CO, O₃ and particles), impacts on crops (from O₃, SO₂, Nitrogen and Sulphur deposition) and impacts on buildings (from SO₂, wet acid deposition, and particles). This work will provide a broader basis for impact pathway assessment than used in former calculations and will be used to analyse the changes in environmental impacts and their attribution to the power plants activities.

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