

The 14th International Conference on Quality and Dependability - CCF 2014

Ioan BACIVAROV

President of RAISA - Romanian Association for Information Security Assurance

The 14th edition of the International Conference on Quality and Dependability - CCF 2014 took place at Sinaia from 17th to 19th September 2014.

CCF 2014 was organized by the *Romanian Society for Quality Assurance (SRAC)*, under the aegis of two prestigious international organizations: *Institute of Electrical and Electronics Engineers - IEEE* (Romanian chapter) and *European Foundation for Quality Management - EFQM*.

As in the previous editions, the conference CCF 2014 was attended by personalities and well-known experts from Romania and abroad, representatives of business environment, the academia and scientific research field. Their points of view have been the subject of over 50 papers presented within the conference sections. Organized in six plenary sessions and a poster session, the conference was marked by the consistency and the originality of the presentations.

As 2015 will be the year of publication of new editions of the standards ISO 9001 and ISO 14001, the main changes in the drafts of these standards were presented by renowned experts such as **Alex Ezrakhovich** (Australia) and Professor **Vidosav Majstorović**, PhD (University of Belgrade, Serbia).



Plenary session photo - CCF 2014

This edition of CCF was marked by a jubilee - nine decades of **modern quality**. In his statement Professor **Ioan Bacivarov** made an exhaustive presentation of the main events that marked in a significant way the history of quality, based on the document that

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was the birth certificate of modern quality - the first diagram for statistical control of quality on production flow, proposed in 1924 by **Walter Shewhart**.

Certification of management systems - quality, environmental, food safety, information security, quality tools, reliability, security and risk management were other topics discussed extensively within the conference sessions.

Also was noted a special event in the first day of the conference: **EFQM Open Doors Day in Romania**, organized by **EFQM** in partnership with **SRAC**.



"**EFQM Open Doors Day in Romania**" forum, held on the first day of the conference, has occasioned intense debate with the participation of well-known experts in the field, including: Prof. **Ioan Bacivarov**, PhD - President of RAISA (Romanian Association for Information Security Assurance) and Scientific Chairman CCF 2014, **Marc Amblard**, PhD - Chief Executive Officer EFQM, **Karolina Sugar** - President of Hungarian Association for Excellence, **Dan Stoichitoiu**, PhD - President of SRAC and General Chairman of CCF 2014, **Mihaela Cristea** - Executive Director of SRAC (from right to left)

Dependability topic in CCF2014

According with the trend shown at other international scientific specialized events, *dependability* (and especially *reliability* and *security*) was well represented at the *14th International Conference on Quality and Dependability - CCF 2014*, through the papers included both in the plenary sessions and in the poster session.

Within **CCF 2014** conference were organized three plenary sessions with the topics: "*Reliability, risk, security*" (organized in cooperation with *RAISA - Romanian Association for Information Security Assurance* and coordinated by Professor **Ioan Bacivarov**, PhD - EUROQUALROM Laboratory, POLITEHNICA University of Bucharest, President of RAISA, and Lecturer **Ioan-Cosmin Mihai**, PhD from "Al. I. Cuza" Police Academy, Bucharest, vice-president of RAISA), "*Reliability of components and systems*" (coordinators: Professor **Angelica Bacivarov**, PhD - EUROQUALROM, UPB and **Marius Băzu**, PhD from the National Institute for Research and Development in Microtechnologies - IMT Bucharest) and "*Reliability - theories and models*" (coordinators: Professor **Alexandru Stamatiu**, PhD - UTCB and Professor **Adrian Paris**, PhD - UPB). A substantial number of papers on this topic were included in the poster session organized within **CCF 2014**.

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Below will be shown, in brief, the main contributions included in the CCF 2014 conference in the *security*, *reliability* and *maintainability* topics.

Information systems *security* issue has been the subject of a substantial group of papers. Thus, Prof. Ioan Bacivarov analyzed by comparison models to ensure cyber security, together with Lect. Ioan-Cosmin Mihai from "Al. I. Cuza" Police Academy, Bucharest and Gabriel Petrică (PhD student, EUROQUALROM - UPB), and IT&C systems vulnerabilities with Ionuț-Daniel Barbu (PhD student, EUROQUALROM - UPB).

Prof. Ștefan Prună, PhD and Lect. Ioan-Cosmin Mihai ("Al. I. Cuza" Police Academy, Bucharest) made an exciting cyber attacker profile analysis, while Steli Loznen, PhD (Israel) presented two papers on security and usability of medical equipment.

A new approach to risk management based on the convergence of security risks in physical security systems and IT infrastructure, as well as a critical analysis of risk management, viewed through ISO 31000:2009 standard was the subject of two papers presented by Prof. Ioan Bacivarov and Marian Firoiu (PhD student, EUROQUALROM - UPB).

The importance of mobile communications networks security has been the subject of two papers presented by Prof. Ioan Bacivarov and Laura Iancu (Huawei) and by Prof. Angelica Bacivarov and Cătălina Gherghina (PhD student, EUROQUALROM - UPB).

In the same context, Prof. Angelica Bacivarov, Prof. Ioan Bacivarov and Costel Ciuchi, PhD (SGG) analyzed complex information systems security and survivability issues, while Costel Ciuchi, Gabriel Petrică and Cătălina Gherghina investigated aspects of security management and interoperability of complex systems.

An important group of papers, included in two oral sessions and one poster session, have investigated reliability and maintainability issues for components and systems.

Professors N. J. Rajaram and A. K. Verma from the Indian Institute of Technology Mumbai (India) have analyzed the reliability specifications of the software applications, while Professor R. Gautier and M. Simba, PhD (ENSAM Paris, France) have proposed a methodology for testing and correction of software errors in complex systems.

The paper proposed by the reliability team from IMT Bucharest - formed by Virgil Ilian, Marius Băzu, Lucian Gălățeanu, Dragoș Vârșescu, Niculae Dumbrăvescu, Roxana Marinescu and Virgil Liviu Ilian - has investigated the reliability of electronic components based on the use of thermography. In the same context, Professor Titu Băjenescu (Switzerland) and Marius Băzu, PhD (IMT) have presented reliability issues related to electrolytic capacitors and have analyzed the failure risks for silicon and non-silicon transistors, and Professors Adrian Paris and Constantin Târcolea (UPB) have analyzed the correlations between systems performance degradation and their reliability.

Some issues related to reliability and security of robots used in the research field were investigated by Virgil L. Ilian, PhD and Prof. Ioan Bacivarov, while prof. Ioan Bacivarov, Sabina Axinte and Alice Alexandru (EUROQUALROM - UPB) have analyzed the QFD method used in studies related to quality and reliability management.

Professor Alexandru Stamatiu (UTCB) and Bogdan Ivan (PhD student, UTCB) have investigated in 3 interesting presentations how to use entropic models in reliability analysis of complex systems and using entropic risk criteria to optimize redundant structures.

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Issues related to the implementation of communication networks resilience have been the subject of a paper presented by Prof. Angelica Bacivarov and Luminița Copaci, PhD, while Prof. Ioan Bacivarov, Prof. Angelica Bacivarov and Eugen Cornel, PhD (EUROQUALROM - UPB) have proposed a method to analyze fault trees reliability based on the Java programming language.

In two papers from the industrial field, Alexandru Giurea and Mariana Vasile (from ALRO S.A.) have presented a methodology for investigating the types of failures in industrial processes and their causes, while Al. Giurea and P. Gagi (from ALRO S.A.) have highlighted the importance of metrology in Total Productive Maintenance approaches. Finally, Ovidiu Țuțuianu (Nova Industrial S.A. Bucharest) has presented environmental performance indicators into maintenance activity of industrial equipment.

To conclude, the papers presented in "Dependability, risk, security" plenary session of **CCF 2014** were able to highlight the fact that also in this interdisciplinary field of theoretical and applied research very important at European level (if we were to consider only networks of excellence and projects developed within the European research programs FP6 and FP7) exist indigenous collectives performing high-level research, that can successfully face the internationally challenges; can be highlighted in this regard, Doctoral School ETTI - UPB (Bucharest), EUROQUALROM Laboratory (ETTI - UPB), Police Academy and Reliability Laboratory of IMT Bucharest.



Participants at the International Conference CCF2014 in the traditional group photo

The International Conference "**Quality and Dependability**" - CCF organized by **SRAC** in the past three decades have earned a well-deserved international reputation among specialists in the field.

In the specialized literature, CCF is mentioned as the third longest-running international conference in the field, preceded by **RAMS** (Reliability and Maintainability Symposium) Conference from USA and **Lambda Mu** Conference (France). The current edition of the conference reconfirm that CCF has become a *brand of excellence* among international scientific conferences in the interdisciplinary field of quality and dependability.

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