



# European Safety and Reliability Association

# Newsletter

<http://www.esrahomepage.org>

March 2015

## Editorial



*Terje Aven  
ESRA Chairman  
University of Stavanger,  
Norway*

Dear ESRA Colleagues,

It is a pleasure for me to address you in the opening of our newsletter in this March issue of the Newsletter.

The main activity this year is the ESREL 2015 conference in Zurich in September. The reports from the local organisers are overwhelming. Close to 800 abstracts were received, and many initiatives have been taken to realise special sessions on selected topics. Submission of full papers is coming now, and it will be exciting to see how many papers that we end up with at the conference. Our colleagues in Switzerland are working hard and I would use the opportunity to thank them for the big job they have already done and the big one ahead of them in the coming months. We can look forward to another great conference full of scientific/technical exchanges and social sharing.

We also this year have provided direct financial support to several initiatives proposed by our members in response to our annual call for project proposals in November 2014. These initiatives relate to activities ranging from a two-days expert workshop focused on

reliability issues in the field of structural engineering organised by the Technical University of Ostrava, Czech Republic; to a workshop on reliability technologies within the international conference on digital technologies in Slovakia; to the organisation of a Computational Reliability Engineering workshop for technical complex products by University of Wuppertal, Faculty of Safety Engineering, Germany; to the Advances in Risk and Reliability Conference (AR2TS) organised by the Safety and Reliability Society (SaRS) in the UK; to a training course on advanced methods for reliability, availability, maintenance, diagnostics and prognostics of industrial equipment at the Politecnico di Milano, Italy; and to an international conference and an international summer school on RAMS topics in Poland (SSARS). Congratulations to all and good luck with the activities. We look forward to read about these events in coming issues of the ESRA newsletter.

Medio January we got the good news that new bylaws of ESRA have been duly approved. This is a milestone for ESRA. Thanks again to our former ESRA Chairman Professor Enrico Zio who initiated and ran the first part of this process, and to our General Secretary, Coen van Gulijk, who have been leading the work in the latest stages.

Another action that we have been undertaking is the update of the memberships, and related payments. I hope that you have already ticked off for paid membership fee for 2015.

Terje Aven  
Chairman of ESRA

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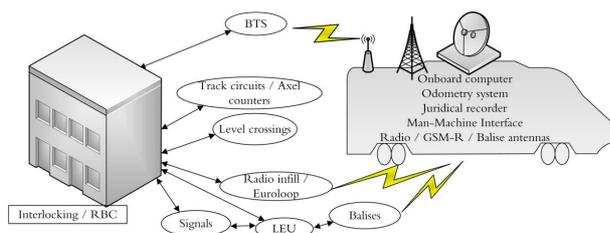
## Feature Articles

### Dependability and maintenance analysis of railway signalling systems



*Amparo Morant  
Division of Operation and  
Maintenance Engineering  
Luleå Railway Research  
Center (JVTC)  
Luleå University of Technology*

Railway signalling systems play an important role in the control, supervision and protection of rail traffic; they ensure the safe operation of the railway network, and their reliability and maintainability directly affect the capacity and availability of the railway network, in terms of both infrastructure and trains. Railway signalling systems take up a large part of the railway's overall corrective maintenance (when looking the corrective maintenance records it can be observed that a forth of them are related to signalling systems). The railway signalling divides the railway corridor into track sections (or blocks) where only one train is allowed at a given time. If there is a stoppage of operation caused by a failure on the signalling system of a track section, railway operation can still be possible on that section if the dispatcher allows the driver to circulate with caution in a degraded operational mode. They are composed of several different systems; each has its own purpose, but the main functionality of the overall system is determined by the interoperability between them (see Figure 1). Hence, the dependability of these systems directly affects the capacity of the network. Railway managers need to have a holistic view of all systems to optimise maintenance. Signalling systems are especially important, given the need for interoperability. Given their complexity, knowledge must be correctly managed to ensure proper performance in all phases of the life cycle. Enhancing information logistics would lead to considerable improvements in this area.



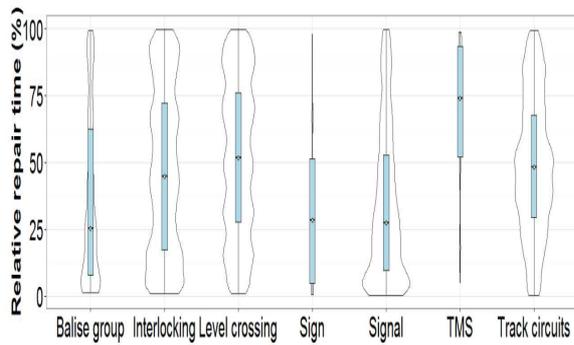
This research analyses the dependability and maintenance of railway signalling systems and proposes various approaches to improve maintenance performance. External factors affecting the reliability of

signalling systems are identified, such as their location. The signalling system is treated as a system of systems (SoS) because of its interoperability and because failures occurring on different systems can be associated with the same failure effect. Corrective maintenance records (WOs) obtained from Trafikverket (the Swedish infrastructure manager) from a specific railway corridor in the northern part of Sweden forms the basis of this research. Based on the analysis, the weakest points are identified. Different models and frameworks are proposed to improve the dependability of railway signalling systems.

An exploratory analysis of the corrective maintenance data shows that different factors affect greatly the performance of signalling systems (e.g. the complexity of the system, accessibility and others related to the location). Measuring how much those factors affect signalling systems would allow better estimations of the dependability during operation. Corrective maintenance data can help to find areas of improvement on the maintenance performance. A data driven model for maintenance decision support is proposed by Morant et al. (2014), based on corrective maintenance work orders. The data driven model allows reviewing of the maintenance policies and permits continuous improvements based on the actual performance.

The results show that approximately 24% of the WOs were related to failures where no failure was found (NFF) and 27% of the WOs where it was not possible to define if the failure were related to signalling systems. NFFs require extra time in corrective maintenance because of the time taken to identify the failure, along with the repeated corrective actions to correct the same failure. Improving the maintainability and the maintenance supportability of the systems can reduce the time needed to identify the required corrective maintenance action and reducing the NFF WOs (e.g. reducing the identification time by an improved knowledge of the theory of failure on signalling systems, thus reducing the work orders and the time spent performing corrective actions related to them.). It was found a high variance between different track sections of the same railway corridor, even if they have the same configuration design.

When looking the relationship between the time to restore and the total time to maintain, it can be observed differences between the different signalling systems. Figure 2 visually summarizes the relative restoration time depending on the system asset affected by the failure. This figure shows the maximum and minimum times spent, along with the median and first and third quartiles. The density distribution is shown by the perimeter of the boxplots, and the thickness is given by the number of WOs associated with a failure of the system asset. Depending on the system asset, a number of different factors can influence the times to maintain and to restoration. These include failure mode identification



and specification of the needs required for restoring, distance to the failure location, human and /or material resources, etc. Analysing the factors that affect the maintenance performance in each system can help to decrease the time required for corrective maintenance and to improve the dependability of the system.

Morant et al. (2013) propose a model for configuration management, which simplifies the access and visibility of information. The model manages the change control process and ensures that configurations are updated in real-time. An enhancement of the configuration management has the potential to increase the efficacy of the maintenance actions in signalling systems by improving the accessibility of the information required to understand possible future failures. With increased accessible knowledge, the time needed to identify failures can be reduced, resulting in greater maintenance efficiency.

#### References

1. Morant A, Karim R, Tretten P and Larsson-Kråik P-O. Dependability improvement through configuration management – A study of railway signalling systems. *International Journal of COMADEM*, 2013, vol. 16, no. 4, pp. 31-40.
2. Morant A, Larsson-Kråik P-O and Kumar U. Data driven model for maintenance decision support - A case study of railway signalling systems. *Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit*, 2014.

## Towards new flood protection standards



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A major flood in the densely populated, low-lying Netherlands would have catastrophic consequences. Roughly two thirds of the country is protected from floods by flood defences. The area at risk is divided into over 50 major levee systems. Each levee system consists of a series of flood defences (dunes, levees, structures) and higher grounds. The flood defences have to comply with protection standards. If they fail to do so, they have to be upgraded. Each year, hundreds of millions of euros are spent on upgrading levees and structures, and on nourishing dunes.

A comprehensive review of the Dutch flood risk management policy that started a decade ago has almost reached its conclusion. The review was motivated by concerns over the sustainability of the present-day policy in the light of projected climate change impacts, the increase in potential damages due to economic and population growth, and changes in societal preferences and attitudes towards risk.

Within the context of the so-called Delta Programme, various alternatives for protecting the Netherlands from floods have been evaluated, such as strengthening existing flood defences, rerouting rivers and shifting focus towards land-use planning and crisis management. In general, continuing along the lines of the existing flood risk management strategy (i.e. maintaining a focus on prevention and maintaining the contours of the present-day levee systems) was found to be preferable over more radical alternatives for economic and political reasons. It was found, however, that the existing flood protection standards ought to be updated. A joint proposal for new flood protection standards was made by the national government, provincial and local governments and regional water authorities.

The proposed new flood protection standards rest on:

1. a maximum allowable individual risk of 10-5 per year.
2. the outcomes of a cost-benefit analysis
3. considerations related to the protection of vital infrastructures and aversion to large numbers of fatalities

The use of cost-benefit analysis for informing decisions pertaining to flood protection can be traced back to the work of the first Delta Committee that was installed after the Big Flood of 1953 (the country's last major flood). Proposals by the Technical Advisory Committee on Flood Defence for updating flood protection standards on the basis of individual and societal risk criteria date back to the late 1990s. These were never put into practice, however, until now.

The proposed new flood protection standards have a different meaning from today's standards. While today's standards are essentially defined as design

loads, the proposed new standards are defined as maximum allowable probabilities of flooding. The use of design loads as safety standards has clear disadvantages as it leaves considerable room for discussion about appropriate partial safety factors for resistance parameters. The new standards will bring an end to this ambiguity. They will also allow for a closer link between the acceptable risk criteria and the reliability requirements that flood defences have to comply with.

Despite their advantages, the introduction of the proposed new standards will pose a significant challenge. It will cost well over ten billion euros to comply with the new standards as they are often more stringent. New design guidelines and instruments for reliability assessments will have to be developed. Engineers will have to familiarize themselves with a new set of rules. Legacy issues (i.e. projects that started under existing rules and regulations) will have to be dealt with. The transition will not be easy, not least from an organizational perspective. But the enormous potential gains from a smarter way to protect the Netherlands from floods justify the challenge that lies ahead.

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## Safety and Reliability Books

### Safety Science: Methods to Prevent Incidents and Worker Health Damage at the Workplace



*Eduardo Calixto*  
BQR Reliability Engineering Ltd

Occupational Risk management should be a continuous process and be in constant development. It is applied to the Organization's strategy and on the implementation of that strategy. It shall Examine methodically all the risks inherent in the past, present and in particular, in the future activities of an organization. The central point of a good risk management is the identification and treatment of risks. Its main objective is to add value in a sustained manner to all activities of the organization. It coordinates interpretation of the potential positive and negative aspects of all the factors that may affect the organization. It increases the likelihood of success and reduces both the probability of failure and the uncertainty of obtaining the overall objectives of the organization.

This book aims to discuss the main methods to prevent incident and employees' health on workplace. Despite a huge effort from different organizations all over the world is still a challenge to prevent incidents and health damages in the workplace. The challenge faced are related more to human rather than Technological issues. The organizational culture, leadership as well as organizational learning has an important hole in safety and occupational health effectiveness. Indeed, those factors are the safety Management pillars and also the main problem with most of the organization in different industry. Concerning the methods, different approaches are described in this book to prevent incidents and health damages like risk assessment, emergency response, incident analysis methods, human factor, safety standards, and safety management.

The first chapter seeks to introduce the reader into the context of occupational risk, focusing on the Physical, biological and chemical hazard aspects and also address the ergonomic factors, as a necessary knowledge to the understand the global environment of the organization. On the assumption that the study of the planning would be incomplete without a reference to the way to implement it, some chapters were added about techniques and tools in support of the decision-making process. Chapter two to seven present the main qualitative and quantitative tools in the context of risk management, while managerial and technical knowledge necessary, without, however, moving the central axis from the State-of-the-art risk management. In order to address the analysis of the human factors related to the culture of organizations and the "engaging" feature in the practice of risk management, a set of methodologies is presented in chapter seventh. It describes the techniques inherent to the Human Factor, among them: Technique for Human Error Rate Prediction (THERP), Operator Action Tree (OAT), Accident Sequence Evaluation Program (ASEP), Social technical Analysis of Human Reliability (STAHR), Standardized Plant Analysis Risk Human Reliability (SPAR-H), Human Error Assessment Reduction technique (HEART) and Bayesian Belief Network analysis (BBN). The main safety standard that supports the structure of current management systems throughout the World are presented in the eight chapters. Among these: OHSAS 18001, ISO 31000, a safety case applied to oil and gas industry, EN 51026 (risk management applied to railway industry), a safety case applied to the nuclear industry, a key program asset integrity, IEC 61508 (safety integrity level standard). The final chapter addresses Safety and Occupational Health Management. The final message from the author is that no event starts big. The assumption paradigm being proposed is that risk management should be a central element in the strategy management of any organization and should be regarded as the process through which organizations analyze methodically risks inherent to their activities, with the aim of achieving a sustained advantage in each individual activity and in the set of all activities

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## Past Safety and Reliability Events

This year, in 11-17th January, there was held the 43rd Winter School on Reliability in Szczyrk, Poland.

The conference has been organized since 1972 under the auspices of the Polish Academy of Sciences. Currently, it is organized by the Faculty of Transport in Warsaw University of Technology and the Chairman of the Conference Technical Program is Professor Tomasz Nowakowski from Wrocław University of Technology. The Winter School research topics include: theory of reliability, reliability engineering, facility maintenance, machines physical damage and degradation, diagnostics, operation and maintenance examination, and safety of machines and technical systems.

In 2015, the total number of registered conference Participants was about 90, from 31 universities and enterprises - Fig. 1.

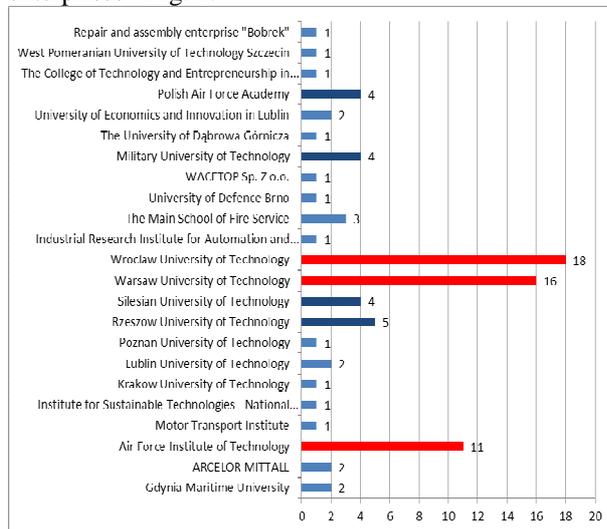


Fig 1. 43rd Winter School of Reliability Participants distribution by their affiliation (total 84).

The largest group of participants were graduate students and assistants - 36 people. The others are doctors - 35 people and professors.

The Winter School programme was organized in 8 thematic sessions held in the afternoon and evenings. There were also mornings meeting of the participants interested in the analysed research problems. A total of 45 papers were presented covering mainly the following issues:

Mathematical models – 3 papers,

System safety – 3 papers,

Railway transport operation and maintenance and dependability – 5 papers,

Air transport operation and maintenance and dependability – 8 papers,

Risk and operation and maintenance in sea transport – 2 papers,

Dependability and maintenance and operation problems in road transport – 6 papers,

Data communications systems dependability and operation and maintenance – 4 papers,

Dependability issues in logistics – 2 papers,

Water supply networks dependability and operation and maintenance issues – 4 papers.

During the opening session of the Winter School, there was presented the current state of knowledge about the reliability and safety:

Professor Marek Młynczak presented: State of knowledge about technical systems safety in view of PSAM 12 conference,

Professor Jan Magott presented: Relation from 10th FORMS/FORMAT 2014 symposium on formal methods for automation and safety in railway and automotive systems,

Professor Tomasz Nowakowski presented: State of knowledge on the reliability and safety in view of the European Safety and Reliability Conference ESREL 2014.

There was also selected the best paper developed by a doctoral student. This year, it is the work of MSc. Marta Woch (Air Force Institute of Technology, Warsaw) titled: Reliability at the checkpoints of aircraft structure. The prize is the publication of extended and supplemented text in one of the journals from the Journal Citation Reports base.

The Winter School articles are printed in the form of bilingual abstracts (in Polish and English) in Winter School of Reliability proceedings and the full texts are available on an electronic device (ISBN 978-83-7814-341-3). The Technical Program Committee recommends the selected texts for publication in chosen scientific journals (e.g. Journal of KONBiN, Journal of KONES or Archives of Transport).

We thank all the Participants for their substantive contribution and valuable comments that gives the opportunity to exchange the ideas in defined fields of research and applications. Moreover, we encourage all to visit the Winter School on Reliability web site: <http://www.zimowaszkolaniezawodnosci.edu.pl/>.

We also invite all for the next 44th Winter School on Reliability, which is going to be organized in the second week of January, 2016, in Szczyrk, Poland.

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## Calendar of Safety and Reliability Events

### 9<sup>th</sup> Summer Safety & Reliability Seminars - SSARS 2015

Gdańsk/Sopot, Poland

21–27 June 2015

The annual one-week *Summer Safety and Reliability Seminars* are organised to advance the methods for the safety and reliability analysis of complex systems and processes and to disseminate the newest achievements in the field. The subjects of the Seminars, different from year to year, are chosen by the Seminars Boards in an effort to dynamically represent the methodological advancements developed to meet the newly arising challenges in the field of safety and reliability. This year the emphasis is addressed to the following subjects: Reliability and Safety Improvement and Optimization Methods, Accident Consequences Modeling, Reliability of Complex Systems and Processes, Safety of Critical Infrastructures, Monte Carlo Simulation Methods in Safety and Reliability.

Contributions are in the form of 1-hour lectures on advanced methods (with corresponding full text of up to 12 pages) presented at Plenary Sessions and 20-minute papers (with corresponding full text of up to 8 pages) presented at Seminar Sessions. The written material of all accepted lectures and papers will be edited in the journal of Polish Safety and Reliability Association - JPSRA series (currently rated at 7 points on the Poland's Ministry of Science and Higher Education List of Scientific Journals and just sent to Thomson Reuters for evaluation and Impact Factor indexation) series which is distributed to the participants as reference textbook. Before the acceptance, the Members of JPSRA Editorial Board with the assistance of the Invited Professors will performed the evaluations of all contributions and as a results of this reviewing process the recommendations will be sent out to help the authors in improving their works.

Additionally, educational courses and workshops will be offered each year on selected safety and reliability topics.

Authors are requested to submit their lectures and papers electronically to the Secretariat using the following e-mail address: [ssars@am.gdynia.pl](mailto:ssars@am.gdynia.pl)

Only those contributions prepared according to the JPSRA Template available on the journal Website <http://jpsra.am.gdynia.pl> will be considered.

Conference Website: <http://ssars.am.gdynia.pl>

## **21<sup>st</sup> Advances in Risk and Reliability Technology Symposium - AR<sup>2</sup>TS 2015**

Leicestershire, United Kingdom  
23-25 June 2015

The Safety and Reliability Society has been organising national, regional and local conferences and meetings for over thirty years. Following discussions with the organisers the Society is pleased to announce that it will now organise the bi-annual Advances in Risk and Reliability Technology Symposium (AR<sup>2</sup>TS) in 2015 and going forward.

The symposium will be an international forum for presenting and discussing recent advances made in the general area of reliability, risk, availability and maintainability. Contributions will be provided from both the university sector and from industry. It will be of benefit to both practitioners and academics involved in this field who want to keep in touch with the latest developments and perhaps through discussion, influence the future direction of work.

The AR<sup>2</sup>TS event, now in its 21<sup>st</sup> session, will take place on the 23<sup>rd</sup> – 25<sup>th</sup> June 2015 at Burleigh Court, Loughborough University. An initial call for papers has taken place but if you feel you have a paper or a poster to offer please contact the society via the contact details below.

Safety and Reliability Society's Chief Executive Officer Jacqueline Christodoulou said, 'This is a major opportunity for everyone involved in risk and reliability to come together at an international conference where cutting edge research meets industry innovation.'

### Contacts:

Phone: 0161 918 6663

Mail: [info@sars.org.uk](mailto:info@sars.org.uk)

Conference Website: <http://www.ar2ts.org.uk>

## **3<sup>rd</sup> International Conference on Transportation Information and Safety - ICTIS 2015**

Wuhan, China  
26-28 June 2015

The 3rd International Conference on Transportation Information and Safety (ICTIS 2015) will be held from June 25th to June 28th 2015 in Wuhan, China. The theme of ICTIS 2015 is "Transportation Information and Safety in the Age of Big Data". Experts, scholars and practicing engineers of transportation systems are invited to the conference to discuss a broad range of topics related to the theories, technologies and applications of transportation information and safety technology. The conference will showcase international experiences in the research of multimodal transportation (including road, railway, navigation, and aviation) and development, and provide a platform for both domestic and overseas scholars and practicing engineers to exchange successful stories and share lessons learned in research and practice. The conference organizing committee sincerely invites transportation professionals and experts worldwide to submit papers and attend the conference in the beautiful River City – Wuhan, China.

Conference Website: <http://ictis.whut.edu.cn/>

# **Information and Digital Technologies 2015 – IDT'2015**

Zilina, Slovakia  
7-9 July 2015

The International Conference on Information and Digital technologies (IDT'2015) is next Conference after the International Conference on Digital Technologies that was held in Zilina traditionally. The aim of the conference is to bring together researchers, developers, teachers from academy as well as industry working in all areas of information technologies. Young researchers and postgraduate PhD students are greatly welcome to participate in this event. Beside the scientific field, several cultural and social events are planned for the enjoyment of conference attendees. The proceedings of DT 2013 and DT 2014 were indexed by IEEE Xplore and Scopus.

## **Special events**

The two Workshops in framework of the conference will be organized:

- International Workshop on Biomedical Technologies
- International Workshop on Reliability Technologies

## **Topics**

The conference makes is focused on a wide range of applications of computer systems. Topics of interest include, but are not limited to:

- Circuit theory and its applications
- Digital signal processing
- Multimedia
- Communication and control systems and networks
- Measurement systems and instrumentations
- Hardware and software solutions
- Innovative eHealth, Applications and Products
- Electronic Health Records and Medical Databases
- Medical Image Analysis and Biomedical Visualization
- Computer-Aided Diagnosis
- Telemedicine, Telehealth and Remote Monitoring
- Reliability analysis and risk estimation
- Testing and fault-tolerant systems
- Accident and incident investigation
- Human factor
- Risk and hazard analysis
- Software reliability
- Data mining and Knowledge discovery
- Education, e-learning

## **Important dates**

Paper acceptance notification - **5 May, 2015**

Camera-ready papers - **25 May, 2015**

Final program - **2 June, 2015**

## **Submission of papers**

Prospective authors are requested to send a paper (maximum 12 pages including figures, tables and references) for review by the Scientific Program

Committee. All submissions must be written in English, starting with a succinct statement of the problem, the results achieved, their significance and comparison with previous works (if any), as well as a list of references. The submissions should also include: title of the proposed paper, authors names, affiliations, addresses, name of an author to contact for correspondence, e-mail address of the contact author, topics which best describe the paper. Paper should be submitted electronically.

Accepted papers will be published in conference proceedings (CD-version under an ISBN reference). All submitted papers will be reviewed by Program Committee members.

## **Secretariat Address for Contacts**

IDT'2015 Organizing Committee  
Department of Informatics / University of Zilina  
Univerzitna 1, 01026, Zilina, Slovakia  
[dt@fri.uniza.sk](mailto:dt@fri.uniza.sk) <http://dt.fri.uniza.sk>

## **9th International Symposium on Imprecise Probability: Theories and Applications – ISIPTA '15**

Pescara, Italy  
20-24 July 2015

ISIPTA is the primary international forum to present and discuss new results related to imprecise probability.

We welcome both theoretical and applied original contributions. In this edition, we especially welcome papers connecting imprecise probabilities with related research in fields such as economics, philosophy, sociology, and engineering. There will be no parallel sessions. Each paper that is accepted is presented both

(i) in a plenary session, meant for a short introduction and a sketch of the context and relevance;

(ii) in a poster session, where ample time is given for in-depth explanation and discussion.

The poster-only track provides a second, free format presentation option. It is also open for preliminary results, challenges, etc.

## **Non-proceedings papers**

To adapt to different publication cultures in different fields, we introduce a new option: the non-proceeding papers. Authors may request that their contribution is not published in the proceedings in case this precludes later publication of an expanded journal version. The PC Board will decide on a case-by-case basis. If accepted, a one-page abstract will be published in the proceedings, and the paper must be freely available on-line (e.g., as a working paper).

### Invited Speakers

Massimo Marinacci - Department of Decision Sciences, Bocconi University, Milan, Italy  
Itzhak Gilboa - Eitan Berglas School of Economics, Tel-Aviv University, Israel & HEC, Paris, France  
Peter M. Williams - Department of Informatics, University of Sussex, Brighton, UK & BW Mining, Brighton, UK

### Steering Committee

T. Augustin (LMU München, Germany) + PC Board  
G. de Cooman (Ghent University, Belgium)  
S. Doria (University G. d'Annunzio, Italy) + Local Organization  
E. Miranda (University of Oviedo, Spain) + PC Board  
E. Quaeghebeur (CWI, Amsterdam, Netherlands) + PC Board  
T. Seidenfeld (Carnegie Mellon University, USA)

### Important Dates

**31 Mar** - Conference hotel pre-reservation deadline  
**08 Apr** - Paper notification  
**17 Apr** - Poster-only abstracts due  
**06 May** - Poster-only notification  
**29 May** - Early-bird registration deadline (€350 full; €200 student)

After the conference, a special issue with a selection of the accepted papers will be published in an expanded version in the International Journal of Approximate Reasoning.

### Contacts:

Scientific program: [isipta15@easychair.org](mailto:isipta15@easychair.org)  
Local organization: [isipta15@unich.it](mailto:isipta15@unich.it)

Conference Website: <http://www.sipta.org/isipta15>

## 5<sup>th</sup> International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering - QR2MSE 2015

Beijing, China  
21-24 July 2015

Following the success of QR2MSE 2011, 2012, 2013, and 2014 which were held in Xi'an, Chengdu, Emeishan, and Dalian respectively, QR2MSE 2015 to be held in Beijing is the 5th of this conference series. The conference will be technically sponsored by European Safety and Reliability Association, European Federation of National Maintenance Societies, International Society of Engineering Asset Management, Korean Reliability Society, Reliability Engineering Association of Japan, Polish Safety and Reliability Association, The Maintenance Professional Committee of China Ordnance Society, Equipment Support Commission of China Ordnance Society, Reliability Committee of

Chinese Operations Research Society, IEEE Chengdu Section, National Natural Science Foundation of China, and Institute of Reliability Engineering at University of Electronic Science and Technology of China.

### Important dates

**10.03.2015** - Paper submission  
**10.04.2015** - Full Paper Acceptance Notification  
**30.04.2015** - Camera Ready Papers Due

### Secretariat

International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering (QR2MSE 2015)

Tel: +86-(0)28-61830204

Fax: +86-(0)28-61830227

Email: [icqrms@uestc.edu.cn](mailto:icqrms@uestc.edu.cn)

Conference Website: <http://www.qr2mse.org/>

## 25<sup>th</sup> European Safety and Reliability Conference – ESREL 2015

Zürich, Switzerland  
7 - 10 September 2015

The 25th edition of the European Safety and Reliability Conference, ESREL 2015, will be held at the Swiss Federal Institute of Technology Zürich (ETH), 7 - 10 of September.

Our ambition for ESREL 2015 is to advance in the understanding, modeling, and managing the risk, safety and reliability of systems in our increasingly complex world. We will set up a multidisciplinary platform to address the multiple aspects characterizing these fields of research and applications. With the support of the ETH Risk Center (<http://www.riskcenter.ethz.ch/>), we engage in broadening the scope of risk, safety and reliability analyses from the technical to natural, financial and social complex systems, focusing on interdependencies of functions and cascading failures. To better emphasize these topics, we will introduce new special areas, along with the traditional methodology and application areas of ESREL:

- Understanding Complexity in Socio-Technical-Economic Systems
- Modelling Interdependencies and Cascades
- Risk Approaches in Insurance and Finance Sectors

We also encourage the organization of other special technical sessions addressing the current hot topics of our fields.

#### Important dates

**15.01.2015** - Abstract submission

**15.04.2015** - Paper submission

**31.05.2015** - Early registration

Conference Website: <http://www.esrel2015.org>

## **24<sup>th</sup> International Conference Nuclear Energy for New Europe** Portorož, Slovenia, 14-17 September, 2015

Coordinator: Igor Jencic

The conference is a traditional annual meeting of professionals from nuclear research and educational institutions, nuclear vendors, utilities and regulatory bodies. It attracts around 200 participants from more than 20 countries. The topics discussed are general and include reactor physics, thermal hydraulics, probabilistic safety assessment, severe accidents, nuclear fusion, nuclear power plant operation, nuclear materials, waste management and new reactor designs. The language of the conference is English.

The conference will take place in **GH Bernardin**, Portorož, Slovenia. GH Bernardin is the first and the largest convention hotel in Slovenia.

#### Important dates

**April 30, 2015** - Abstract Submission

**June 21, 2015** - Abstract Acceptance

**August, 2015** – Submission of Full-Length paper

Conference Website: <http://www.nss.si/nene2015>

## **8<sup>th</sup> Safety and Reliability Conference - KONBiN 2015** Uniejów, Poland 06-09 October 2015

The International Conferences on Safety and Reliability KONBiN are cyclic events that focus on issues of providing safety and reliability for any complex human being – engineering system – environment' system. The Conference is addressed to universities and research institutes, to scientists, industry and transport employees, government and municipal authorities, safety and reliability experts and consultant, and other persons interested in the Conference topics.

#### Important dates

**February 28, 2015** - Submission of Abstracts

**March 15, 2015** - Submission of Registration Forms

**March 31, 2015** - Submission of Full Papers

**April 15, 2015** - Remittance of Conference Fee

#### Secretariat

Instytut Techniczny Wojsk Lotniczych  
(Air Force Institute of Technology)  
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tel. +48 22 6851 310, fax: +48 22 6851 410  
e-mail: [konbin2015@itwl.pl](mailto:konbin2015@itwl.pl)

Conference Website: <http://www.konbin2015.itwl.pl>

## **13<sup>th</sup> International Probabilistic Workshop (IPW2015)** Liverpool, United Kingdom 4th - 6th November 2015

The conference is intended for civil and structural engineers and other professionals concerned with structures, systems or facilities that require the assessment of safety, risk and reliability. Participants could therefore be consultants, contractors, suppliers, owners, operators, insurance experts, authorities and those involved in research and teaching.

**Key topics:** Safety, Risk, Probabilistic Computation, Reliability, Structural Safety

**Conference Language:** English

#### **Conference Chairs:**

Edoardo Patelli, Institute for Risk & Uncertainty, UK  
Ioannis Kougoumtzoglou, Columbia University, USA

#### **Conference co-Chairs:**

Michael Beer, Institute for Risk & Uncertainty, UK  
Ivan S.K. Au, Institute for Risk & Uncertainty, UK  
Dirk Proske, University of Natural Resources and Life Sciences, Vienna, Austria

#### Secretariat

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Conference Website: <http://www.ipw2015.org>

## **2<sup>nd</sup> International Symposium on Stochastic Models in Reliability Engineering, Life Science and Operations Management - SMRLO'16** Beer Sheva, Israel 15-18 February 2016

Symposium Chairs: Dr. Ilia Frenkel and Dr. Anatoly Lisnianski

The Second International Symposium on Stochastic Models in Reliability Engineering, Life Science and Operations Management (SMRLO'16), will be held on February 15-18, 2016 at the SCE - Shamoon College of Engineering, Beer Sheva, Israel. This will be a continuous and enlarged symposium following the International Symposium on Stochastic Models in Reliability Engineering, Life Science and Operations Management (SMRLO'10) held in 2010.

This SCE symposium will constitute a forum for discussing different issues of Stochastic Models in Reliability Engineering, Life Science and Operations Management with respect to their applications. The symposium objective is to assemble researchers and practitioners from universities, institutions and industries from around the world, involved in these fields, and to encourage mutual exchange.

Common methods and models will be considered from a general point of view; theoretical modeling, computational and case studies will range from academic considerations to industrial approaches, as well as emphasizing topics on cooperation between industries and research institutions. The cooperation that will contribute to the advancement of research and solutions to engineering issues is of utmost importance.

The proceedings of **SMRLO'16** will be published by IEEE CPS and will be available in the *IEEE Xplore Digital Library*.

#### Important dates

**May 1, 2015** - Proposals of Invited Sessions

**May 15, 2015** - Announcement for Invited Session proposals acceptance

**June 15, 2015** - Abstracts submission

**June 30, 2015** - Abstracts acceptance

**September 30, 2015** - Deadline of papers submission

**September 30, 2015** - Deadline for early payment

**October 1, 2015** - 20% augmentation of fee registration

**February 15-18, 2016** - Presentation of invited and contributed papers

Conference Website: <http://info.sce.ac.il/smrlo16/>

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## ESRA Information

### 1 ESRA Membership

#### 1.1 National Chapters

- French Chapter
- German Chapter
- Italian Chapter
- Polish Chapter
- Portuguese Chapter
- Spanish Chapter
- UK Chapter

#### 1.2 Professional Associations

- The Safety and Reliability Society, UK
- Danish Society of Risk Assessment, Denmark

- SRE Scandinavia Reliability Engineers, Denmark
- ESReDA, France
- French Institute for Mastering Risk (IMdR-SdF), France
- VDI-Verein Deutscher Ingenieure (ESRA Germany), Germany
- The Netherlands Society for Risk Analysis and Reliability (NVRB), The Netherlands
- Polish Safety & Reliability Association, Poland
- Asociación Española para la Calidad, Spain

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- TAMROCK Voest Alpine, Austria
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- VTT Industrial Systems, Finland
- Bureau Veritas, France
- INRS, France
- Total, France
- Commissariat à l'Energie Atomique, France
- DNV, France
- Eurocopter Deutschland GmbH, Germany
- GRS, Germany
- SICURO, Greece
- VEIKI Inst. Electric Power Res. Co., Hungary
- Autostrade, S.p.A, Italy
- D'Appolonia, S.p.A, Italy
- IB Informatica, Italy
- RINA, Italy
- TECSA, SpA, Italy
- TNO Defence Research, The Netherlands
- Dovre Safetec Nordic AS, Norway
- PRIO, Norway
- SINTEF Industrial Management, Norway
- Central Mining Institute, Poland
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- Cia. Portuguesa de Produção Electrica, Portugal
- Siemens SA Power, Portugal
- ESM Res. Inst. Safety & Human Factors, Spain
- IDEKO Technology Centre, Spain
- TECNUN, Spain
- TEKNIKER, Spain
- CSIC, Spain
- HSE - Health & Safety Executive, UK
- Atkins Rails, UK
- W.S. Atkins, UK
- Railway Safety, UK
- Vega Systems, UK

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- University of Innsbruck, Austria
- University of Natural Resources & Applied Life Sciences, Austria
- AIT Austrian Institute of Techn. GmbH, Austria
- Université Libre de Bruxelles, Belgium
- University of Mining and Geology, Bulgaria
- Czech Technical Univ. in Prague, Czech Republic
- Technical University of Ostrava, Czech Republic
- University of Defence, Czech Republic
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ESRA Newsletter March 2015

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## 3 Standing Committees

### 3.1 Conference Standing Committee

Chairman: A. Grall, University of Tech. of Troyes, France

The aim of this committee is to establish the general policy and format for the ESREL Conferences, building on the experience of past conferences, and to support the preparation of ongoing conferences. The members are one leading organiser in each of the ESREL Conferences.

### 3.2 Publications Standing Committee

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This committee has the responsibility of interfacing with Publishers for the publication of Conference and Workshop proceedings, of interfacing with Reliability Engineering and System Safety, the ESRA Technical Journal, and of producing the ESRA Newsletter.

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ESRA is a non-profit international organization for the advance and application of safety and reliability technology in all areas of human endeavour. It is an “umbrella” organization with a membership consisting of national societies, industrial organizations and higher education institutions. The common interest is safety and reliability.

For more information about ESRA, visit our web page at <http://www.esrahomepage.org>.

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