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ESREL 2005

European Safety and Reliability Conference

June 27-30, 2005, Tri City (Gdynia-Sopot-Gdańsk), Poland

CONFERENCE PROGRAMME

Organisers

European Safety and Reliability Association (ESRA)
Polish Safety and Reliability Association (PSRA)

Local Organiser

Gdynia Maritime University
Department of Mathematics
81-225 Gdynia, ul. Morska 83
e-mail: katmatkk@am.gdynia.pl

Conference Centre

Faculty of Law and Administration
Gdańsk University
80-952 Gdańsk, ul. Bażyńskiego 6

Conference Chairman

Krzysztof Kołowrocki, Gdynia Maritime University, Poland.

Conference Co-Chairmen

Alfred Brandowski, Gdynia Maritime University, Poland;

Carlos Guedes Soares, Instituto Superior Tecnico, Portugal;

Enrico Zio, Politecnico di Milano, Italy.

Local Organising Committee

Agnieszka Blokus, Tymoteusz Budny, Adam Cichocki, Bożena Kwiatuszewska-Sarnecka, Beata Milczek, Joanna Soszyńska, Gdynia Maritime University, Poland.

Technical Programme Committee

Ronald Akselsson, Sweden; Julian Argirov, Bulgaria; Terje Aven, Norway; Tim Bedford, United Kingdom; Andreas Behr, Germany; Attila Bereith, Hungary; Heinz P. Berg, Germany; Dobiesław Bobrowski; Poland; Radim Bris, Czech Republic; Jan Celko, Slovakia; Marko Cepin, Slovenia; Palle Christensen, Denmark; Roger M. Cooke, Netherlands; Jurek Czujko, Norway; Richard Denning, United Kingdom; Balbir S. Dhillon, Canada; Jose C. Duarte, Portugal; Yves Dutuit, France; Mohamed Eid, France; Elie Fadier, France; Włodzimierz Filipowicz, Poland; Joseph R. Fragola, United States; Wiesław Galor, Poland, Peter van Gelder, Netherlands; Jerzy Girtler, Poland; Rudolf Goertz, Germany; Franciszek Grabski, Poland; Lucjan Gucma, Poland; Stanisław Gucma, Poland; Renkuan Guo, South Africa; Lars Harms-Ringdahl, Sweden; Napat Harnpornchai, Thailand; Kiyotada Hayashi, Japan; Per Hokstad, Norway; Milan Holicky, Czech Republic; Olgierd Hryniewicz, Poland; Jerzy Jaźwiński, Poland; Piotr Jędrzejowicz, Poland; Peter Kafka, Germany; Sun K. Kang, Korea; Mitsuhiro Kimura, Japan; Lech Kobylinski, Poland; Zbigniew Korczewski, Poland; Henrik Kortner, Norway; Kazimierz Kosmowski, PolandIgor Kozine, Denmark; Antanas Kudzys, Lithuania; Audronis K. Kvedaras, Lithuania; Bożena Kwiatuszewska-Sarnecka, Poland;Pierre E. Labeau, Belgium; Bernt J. Leira, Norway; Gregory Levitin, Israel; Nikolaos Limnios, France; Bo H. Lindqvist, Norway; Anatoly Lisnianski, Israel; Józef Lisowski, Poland; Artur V. Lubarski, Russia; Jana Markova, Czech Republic; Sebastian Martorell, Spain; Marino Mazzini, Italy; Beata Milczek, Poland; Martin Newby, United Kingdom; Nikitas Nikitakos, Greece; Tomasz Nowakowski, Poland; Luca Podofillini, Italy; Ioannis Papazoblou, Greece; Vytautas Paulauskas, Lithuania; Agapios Platis, Greece; Urho Pulkkinen, Finland; Rudgier Rackwitz, Germany; Uwe. K. Rakowsky, Germany; Maria F. Ramalhoto, Portugal; Veikko Rouhiainen, Finland; Vadim Seleznev, Russia; Jean P. Signoret, France; Roman Śmierzchalski, Poland; Cornelia Spitzer, Germany; Tadeusz Szopa, Poland; Janusz Szpytko, Poland; Wiesław Tarełko, Poland; Pia Tint, Estonia; Egidijus R. Vaidogas, Lithuania; Jin Wang, United Kingdom; Jussi Vaurio, Finland; Zdenek Vintr, Czech Republic; Ryszard Wawruch, Poland; Adam Weintrit, Poland; Min Xie, Singapore; Wojciech Zamojski, Poland; Józef Żurek, Poland.

Conference Rooms [Responsible Persons]

AULA – Ground & First Floor [Tymoteusz Budny, Małgorzata Tuzimek]
AUDITORIUM C - Second & Third Floor [Tymoteusz Budny, Małgorzata Tuzimek]
Room A - First Floor, Room No 2025 [Tymoteusz Budny, Małgorzata Tuzimek]
Room B – First Floor Floor, Room No 2026 [Agnieszka Blokus, Maria Bornowska]
Room C – Ground Floor, Room No 1039 [Joanna Soszyńska, Dorota Pałubicka]
Room D - Ground Floor, Room No 1033 [Sambor Guze, Wanda Zienkiewicz]
Room E - First Floor, Room No 2042 [Adam Cichocki]
Room F - Ground Floor, Room No 1057 [Bożena Kwiatuszewska-Sarnecka]
AUDITORIUM B – Ground & First Floor [CIOP]
Conference Desk – Ground Floor [Bożena Kwiatuszewska-Sarnecka, Anna Raczyńska, Karolina Żamojć]

CONFERENCE PROGRAMME

Sunday, June 26, 2005

Time	Conference Events
$16^{30} – 17^{00}$	**Bus Transportation from Conference Hotels to Conference Centre** Departure: 16.30
$17^{00} – 19^{00}$	**Registration** (Conference Centre Hall, Ground Floor)
$19^{00} – 21^{00}$	**Reception** (Conference Centre Hall, First Floor)
$21^{00} – 21^{30}$	**Bus Transportation from Conference Centre to Conference Hotels** Departure: 21.00

Monday, June 27, 2005

Time	Conference Events
$8^{00} – 8^{30}$	**Bus Transportation from Conference Hotels to Conference Centre** Departure: 8.00
$8^{00} – 8^{30}$	**Registration** (Conference Centre Hall, Ground Floor)
$8^{30} – 9^{00}$	**Opening Ceremony** (AULA, Ground Floor) Welcome and Invitation to Tri City A song "Gaude Mater Polonia" by the Gdynia Maritime University Choir Message from Carlos Guedes Soares, the Chairman of European Safety and Reliability Association Message from Enrico Zio, the Vice-Chairman of European Safety and Reliability Association Message from Alfred Brandowski, the Chairman of Polish Safety and Reliability Association A song "Kaming Magmamani" by the Gdynia Maritime University Choir Technical Introduction to ESREL 2005 by Krzysztof Kołowrocki, the Conference Chairman A song "Anthem of Europe" by the Gdynia Maritime University Choir Chair: Krzysztof Kołowrocki, Poland
$9^{00} – 10^{00}$	**Plenary Lecture** (AULA, Ground Floor) Foundational Issues in Risk Analysis Speaker: Terje Aven, Norway Opponent: E. Zio, Italy Chairs: K. Kosmowski, Poland & C. Guedes Soares, Portugal
$10^{00} – 10^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)

Monday, June 27, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1 - Methods of Hazard and Risk Analysis* Chairs: J.F. Fragola, USA & S. Gucma, Poland	**Stream B** (Room B, No 2026) *B2 – Analytical Methods for System Safety and Reliability* Chairs: F. Grabski, Poland & M. Kimura, Japan	**Stream C** (Room C, No 1039) *B3 – Monte Carlo Methods in System Safety and Reliability* Chairs: P. Labeau, Belgium & J. Mazurkiewicz, Poland	**Stream D** (Room D, No 1033) *B8– Structural Reliability and Safety* Chairs: W. Galor, Poland & M. Holicky, Czech Republic
$10^{20} – 10^{40}$	Probabilistic model checking for dependability properties of stochastic systems N. Addouche, C. Antoine & J. Montmain, France	Reliability analysis of large systems with dependent components A. Blokus, Poland	Integration of analytical and Monte Carlo methods for dynamic system safety analysis R. Alzbutas & V. Janilionis, Lithuania	Reliability of load bearing steel plates subjected to localised heat loads P. Teixeira & C. Guedes Soares, Portugal
$10^{40} – 11^{00}$	Development of a causal model for air transport safety B.J.M. Ale, L.J. Bellamy, R.M. Cooke, L.H.J. Goossens, A.R. Hale, D. Kurowicka & A.L.C. Roelen, Netherlands & E. Smith, England	Preliminary reliability and availability estimates of an accelerator for an ADS system L. Burgazzi, Italy	Improved Parameter Estimation for the Process Oriented Simulation (POS) Model for Common Cause Failures H.-P. Berg, R. Görtz & E. Schimetschka, Germany	Bayesian bootstrap: use for estimating probabilities of accidental damage to structures E.R. Vaidogas, Lithuania
$11^{00} – 11^{20}$	A geostatistic approach to the Functional Analysis Space Technique: a case of study. G. Alfaro Degan, D. Lippiello & M.Pinzari, Italy	Evaluating and improvement of safety instruments in offshore industries using dependability analysis V. Ebrahimipour & K. Suzuki, Japan	A SIL quantification approach to complex systems for guided transportation J. Beugin, D. Renaux & L. Cauffriez, France	Quantitative analysis of the influence of fuzzy factors on fuzzy reliability of structures H.Z. Huang, China & M.J. Zuo, X. F. Fan & Z. Tian, Canada
$11^{20} – 11^{40}$	An innovating application of Bayesian networks: global environmental risk assessment of the cold source system of a nuclear power plant Dutfoy, S. Pierlot & G. Deleuze, France	Formal hazard analysis using multi-net semantic networks L. Filippidis, Germany	One computation algorithm for multiobjective maintenance optimization R. Briš, Czech Republic	Structural reliability criteria and dynamic positioning of marine vessels B.J. Leira, A. Sørensen, P.I.B. Berntsen & O.I. Aamo, Norway
$11^{40} – 12^{00}$	Securing new mobile technologies A. Fischer & H. Straumann, Switzerland	Reliability evaluation for the pump assembly using an accelerated test S.J. Park, S.D. Park & K.S. Kim, Korea	Cost-optimization model for the planning of the renewal, inspection, and maintenance of substation facilities in Belgian power transmission system O. Fouathia, J.C. Maun, P.E. Labeau & D. Wiot, Belgium	Gamma processes for time-dependent reliability of structures J.M. van Noortwijk & M.J. Kallen, Netherlands & M.D. Pandey, Canada
$12^{00} – 12^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)			

Monday, June 27, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1* - Methods of Hazard and Risk Analysis Chairs: L. Gucma, Poland & A. Kudzys, Lithuania	**Stream B** (Room B, No 2026) *B2 – Analytical Methods for System Safety and Reliability* Chairs: R. Guo, South Africa & W. Tarełko, Poland	**Stream C** (Room C, No 1039) *B3 – Monte Carlo Methods in System Safety and Reliability* Chairs: P. Labeau, Belgium & E. Zio, Italy	**Stream D** (Room D, No 1033) *B8 – Structural Reliability and Safety* *B9 – Software Reliability and Security* Chairs: B.J. Leira, Norway & A. P-J. Thunem, Norway
$12^{20} – 12^{40}$	Application of the ARAMIS Methodology to Small and Medium-Sized Enterprises A. Bernatik, R. Bris & S. Horehledova, Czech Republic	Reasoning about trust in IT infrastructures J. Górski, Poland/Italy & M. Zagórski, Poland	Monte Carlo simulation for automotive applications under real conditions J. Hauschild & A. Meyna, Germany	Random field of initial deflections and strength of thin plates Z. Sadovský, Slovakia & C. Guedes Soares & A.P. Teixeira, Portugal
$12^{40} – 13^{00}$	A proposal for a model to predict the effects of organizational change on safety: application in a maintenance establishment of SNCF O. Chery, E. Fadier & S. Duriez, France	Coupling of information-flow aggregation method and dynamical model for a more accurate evaluation of reliability K. Hamidi, France/Germany & O. Malassé & J.F. Aubry, France	Influence of the control strategy choice on the safety level of a distributed control system A. Mkhida, France/Marocco & P. Barger, J.M. Thiriet & J.F. Aubry, France	Use of Kriging to increase the predictive power of meta-models in structural reliability L. Schueremans & D. Van Gemert, Belgium
$13^{00} – 13^{20}$	Working towards an integrated approach for analyzing risks in process plants J.Cambon, E. Garbolino & F. Guarnieri, France	Probability of failure on demand (PFD)-the formulas of IEC 61508 with focus on the 1oo2D voting P. Hokstad, Norway	Modeling and simulation of the operational availability and costs of complex systems – a case study P. Pozsgai & B. Bertsche, Germany	Power systems performability analysis M. Dumitrescu, I.Voncila, T. Dumitriu, G. Gurguiatu, D. Floricau & A.P. Ulmeanu, Romania
$13^{20} – 13^{40}$	On the need of exact probabilistic quantification in FT/ET analysis G.G.M. Cojazzi, S. Contini & G. Renda, Italy	An approach for early reliability evaluation of mechatronic systems P. Jäger & B. Bertsche, Germany	A multistate based generalized path vector approach for multistate two-terminal reliability J. E. Ramirez-Marquez, D.W. Coit & M. Tortorella, USA	Assessing software reliability in the context of refactoring I.J. Jóźwiak, A.M. Piotrowicz & M.K. Kowalczyk, Poland
$13^{40} – 14^{00}$	New ways of applying the petri net formalism in risk analysis M. Diergardt & R. Mock, Switzerland	A simple method to derive minimal cut sets for a non-coherent fault tree T. Kohda, Japan	A multi-state Monte Carlo simulation model of a railway network system L. Podofillini, Italy/ Switzerland & E. Zio & M. Marella, Italy	Software vulnerability: definition, modeling, and practical evaluation M. Kimura, Japan
$14^{00} – 15^{20}$	**Lunch** (Conference Centre Halls, Second and Third Floors)			

Monday, June 27, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1 - Methods of Hazard and Risk Analysis* Chairs: J. Markova, Czech Republic & J. Wang, UK	**Stream B** (Room B, No 2026) *B2 – Analytical Methods for System Safety and Reliability* Chairs: D.P. Gaver, USA, & A. Lisnianski, Israel	**Stream C** (Room C, No 1039) *B3 – Monte Carlo Methods in System Safety and Reliability* *B17, B13, B18* Chairs: P. Hokstad, Norway & L. Podofillini, Italy/ Switzerland	**Stream D** (Room D, No 1033) *B9 – Software Reliability and Security* Chairs: W. Filipowicz, Poland & G. Levitin, Israel
$15^{20} – 15^{40}$	Analysis of accident scenarios of RoPax vessels P. Antão & C. Guedes Soares, Portugal	Computer aided functional safety assessment K.T. Kosmowski & M. Śliwiński, Poland	Reliability and functional analysis of discrete transport system with dispatcher T. Walkowiak & J. Mazurkiewicz, Poland	Optimizing the amount of free resources on a computer system using software rejuvenation V. Koutras & A. Platis, Greece
$15^{40} – 16^{00}$	A risk-cost model for assessing the impact of automation and mechanical failures in the preliminary design phase of high speed crafts A. Faravelli, M. Pedrali & A. Raffetti, Italy	Methodology for functional safety assessment K.T. Kosmowski & M. Śliwiński, Poland	A Monte Carlo simulation approach to the production availability evaluation of an offshore installation with operational loops E. Zio, P. Baraldi & E. Patelli, Italy	Software rejuvenation in maritime applications V. Koutras, A. Platis, V. Mennis & N. Nikitakos, Greece
$16^{00} – 16^{20}$	An integrated model of controllability for the preliminary design phase of high speed crafts Faravelli & M. Pedrali, Italy & F. Ghozlan, France & T. Koester, Denmark	On account of concurrent rectangular pulse actions in structural design A. Kudzys, Lithuania	Failure forecast in engineering systems by searching for the inner points of system of algebraic equalities and inequalities (*B17*) V.E. Seleznev, V.V. Kiselev & O.I. Zelenskaya, Russia	On using soft computing techniques in software reliability engineering H. Madsen & P. Thyregod, Denmark & B. Burtschy, France & F. Popentiu & G. Albeanu, Romania
$16^{20} – 16^{40}$	Risk estimation in systems where many various hazards are present and many various escalations / mitigations are possible M. Ferjencik, Czech Republic	Transformed conditional probabilities in cracking redundant bar system design A. Kudzys & R. Kliukas, Lithuania	Application of model-based risk analysis in a risk-informed man, technology and organisation model (*B13*) A.P-J Thunem, B. Axel Gran & A.B. Miberg Skjerve, Norway	An experience in validating train control systems by a grey-box testing approach G. De Nicola, P. di Tommaso, R. Esposito, F. Flammini, P. Marmo & A. Orazzo, Italy
$16^{40} – 17^{00}$	Rare events: natural hazards and major accident industries L. Fiorentini, V. Rossini, F. Colombo & A. Respighini, Italy	On limit reliability functions of series – "m_n out of k_n" systems B. Milczek, Poland	New approach to safety contour of electronic navigational chart (*B18*) A. Weintrit, P. Kopacz & K. Kołowrocki, Poland	
$17^{00} – 17^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)			

Monday, June 27, 2005

Time	Conference Events			
	Sessions			
	Stream A (Room A, No 2025) *S1 – Multi-State and Continuous System Reliability* Chairs: D.W. Coit, USA & A. Lisnianski, Israel	**Stream B** (Room B, No 2026) S9 – *Non-Probabilistic Reliability Measures* Organiser: U.K. Rakowsky, Germany	**Stream C** (Room C, No 1039) S7 – *Modelling Maintenance Practice* Organisers: E. Zio, Italy & Ch. Berenguer, France	**Stream D** (Room D, No 1033) S8 – *Integrated Maintenance, Reliability and Quality Improvement Concepts* Organiser: M.F. Ramalhoto, Portugal
$17^{20} – 17^{40}$	Multistate component criticality analysis in multistate systems J. E. Ramirez-Marquez & D.W. Coit, USA	Some notes on probabilities and non-probabilistic reliability measures U.K. Rakowsky, Germany	A study towards the application of Markovian deterioration processes for bridge maintenance modelling in the Netherlands M.J. Kallen & J.M. van Noortwijk, Netherlands	Reliability growth through block upgrade D.P. Gaver, P.A. Jacobs & E.A. Seglie, USA & K.D. Glazebrook, UK
$17^{40} – 18^{00}$	Extended block diagram method for multi-state system reliability assessment A. Lisnianski, Israel	Neural generation of uncertainty reliability functions bounded by belief and plausibility frontiers R. Savić, Germany	Optimization of surveillance requirements at NPP considering time-dependent scheduling of tests and preventive maintenance S. Martorell, S. Carlos, J.F. Villanueva & A.I. Sanchez, Spain & M. Cepin, Slovenia	Reliability improvement of large parallel-series systems B. Kwiatuszewska-Sarnecka, Poland
$18^{00} – 18^{20}$	Reliability-redundancy allocation for multi-state series-parallel systems Z. Tian & M.J. Zuo, Canada & H. Huang, China	Avionics databus safety criteria and certification (*B16*) A. Kornecki & J. Zalewski, USA	Petri net modeling of production systems in consideration of system properties, maintenance and production processes M. Trost & B. Bertsche, Germany	Numerical analysis of fire risk at pipeline systems of industrial power facilities V.E. Seleznev & V.V. Aleshin, Russia
$18^{30} – 19^{00}$	**Bus Transportation from Conference Centre to Conference Hotels** Departure: 18.30			
$19^{30} – 20^{00}$	**Bus Transportation from Conference Hotels to "Wróblówka"** Departure: 19.30			
20^{00} - 24^{00}	**Picnic** ("Wróblówka" – a croft in the country)			
$24^{00} – 1^{00}$	**Bus Transportation from "Wróblówka" to Conference Hotels** Departure: 24.00			

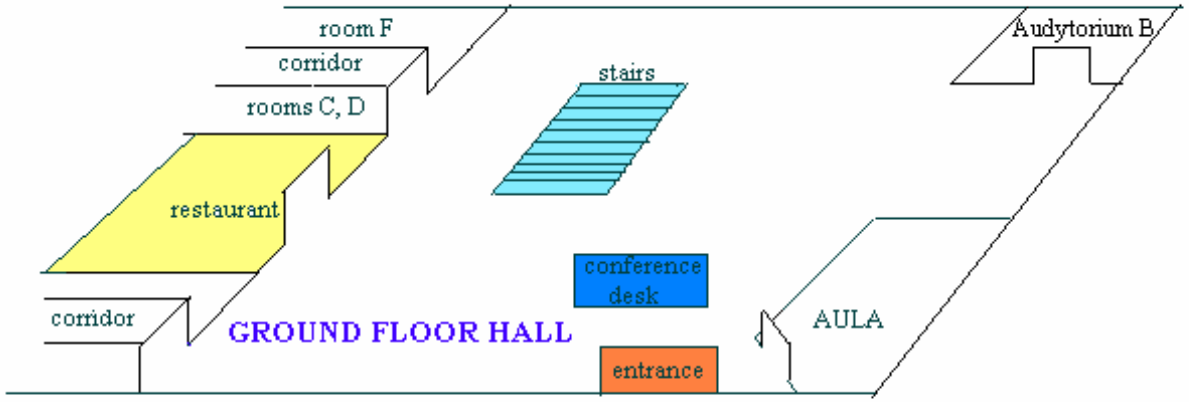
***PSRA* Management Board Meeting, Room No 1041, Time: 17.20 – 18.20**

Monday, June 27, 2005

Time	Conference Events
	Poster Sessions (Conference Centre Hall, First Floor)
$10^{20} – 12^{00}$	Optimum maintenance of systems under two types of failure, F.G Badía & M.D. Berrade, Spain Ways of perfection of hazardous goods' transportation technology, N. Batarlienė, Lithuania Probabilistic approach to risk analysis of chemical spills at sea, M. Bogalecka & K. Kołowrocki, Poland Probabilistic risk analysis of electric shock associated with exploitation of low voltage equipment, W. Korniluk & R.A. Sobolewski, Poland Reliability improvement of large multi-state series-parallel systems, B. Kwiatuszewska-Sarnecka, Poland
$12^{20} – 14^{00}$	Description and discussion of principles and methods for technology qualification, A. Hjorteland, Norway Ferry control area of entry on the intersection with a fairway, L. Kasyk, Poland Areas of dangerous approach to the ship defined with the aid of a domain, A. Łebkowski, M. Tobiasz, K. Dziedzicki, M. Tomera & R. Śmierzchalski, Poland The formal safety assessment and influence of human factor in application to chosen ship's type, M. Smajdor, Poland Reliability of large series-parallel system in variable operation conditions, J. Soszyńska, Poland Reliability of large parallel-series system in variable operation conditions, J. Soszyńska, Poland
$15^{20} – 17^{00}$	An introduction to the assessment of reliability of the heat supply systems, B. Babiarz, Poland Reliability and availability evaluation of large renewal systems, A. Blokus, Poland Coherent concurrent task scheduling and resource assignment in dependable system design, M. Drabowski & E. Wantuch, Poland Reliability and risk evaluation of complex systems in their operation processes, K. Kołowrocki, Poland The reliability analysis of continuous operating technical system, P. Pisarski, Poland

Tuesday, June 28, 2005

Time	Conference Events
$8^{00} - 8^{30}$	**Bus Transportation from Conference Hotels to Conference Centre** Departure: 8^{00}
$8^{30} - 9^{00}$	**Registration** (Conference Centre Hall, Ground Floor)
$9^{00} - 10^{00}$	**Plenary Lecture** (AULA, Ground Floor) Grey Repairable System Analysis Speakers: Renkuan Guo, South Africa & C.E. Love, Canada Opponents: Y.G. Dong, China & C.Y. Cheng, Taiwan Chairs: U. Rakowsky, Germany & W. Zamojski, Poland
$10^{00} - 10^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)



Tuesday, June 28, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1 - Methods of Hazard and Risk Analysis* Chairs: Z. Korczewski, Poland & L. Podofillini, Italy	**Stream B** (Room B, No 2026) *B2 – Analytical Methods for System Safety and Reliability* Chairs: F. Grabski, Poland & T. Kohda, Japan	**Stream C** (Room C, No 1039) *B14 – Safety and Reliability Management and Decision Making* Chairs: Ch. Berenguer, France & R. Wawruch, Poland	**Stream D** (Room D, No 1033) *B5 – Dynamic Reliability* B23 – *Fault Identification and Diagnostics* Chairs: J.A.C. Duarte, Portugal & P. Labeau, Belgium
10^{20} – 10^{40}	Application of the Formal Safety Assessment to the reduction of turn around time in the high speed craft terminal of the port of Nice P. Antão & C. Guedes Soares, Portugal & M. Fracchia, Italy & F. Capoulade, France	Weighted voting systems: the decision making time aspect G. Levitin, Israel	The Process of Safety Management and Decision Making P. Kafka, Germany	Dynamic reliability analysis of the *k*-out-of-*n* multi-state system E. Zaitseva, V. Levashenko & K.Matiaško, Slovakia & S. Puuronen, Finland
10^{40} – 11^{00}	An assessment of ship impact on the ground during manoeuvring in a port water area W. Galor, Poland	Towards safer skies: a probabilistic approach to risk assessment of new aviation safety products J.T. Luxhøj & D.W. Coit, USA	New developments for socio-economically based risk acceptability criteria A. Lentz & R. Rackwitz, Germany	Software modeling framework for dynamic PRA D. Zhu, A. Mosleh & C. Smidts, USA
11^{00} – 11^{20}	Risk analysis for insurance of technical systems D. Gołębiewski & K.T. Kosmowski, Poland	Dynamic Bayesian networks for modeling advanced fault tree features in dependability analysis S. Montani, L. Portinale & A. Bobbio, Italy	Improved railway punctuality by effective maintenance – a case study B. Nyström & P. Söderholm, Sweden	Diagnostic discriminators of crack in large power turbo-set's rotating shaft S. Banaszek, Poland
11^{20} – 11^{40}	A Methodology for the integrated development of internal and external events in the probabilistic risk analysis for PBMR plant H. van Graan, D. Serbanescu & Y. Combrink, South Africa	Analytic solution of seismic probabilistic risk assessment O. Nusbaumer, Switzerland	A discussion of the IEC standards 61508 and 61511 in a risk management context W. Røed, J.E. Vinnem & T. Aven, Norway	Probabilistic design verification of offshore rock supports G.B. de Vries, Netherlands
11^{40} – 12^{00}	Importance measures in cause-consequence diagrams, calculation and applications D.J.K. Griffin, UK	Achieving better on-time-delivery performance with the help of internal dependencies J. Takala & P. Nieminen, Finland	Evaluation of cost-benefit analyses for analyzing safety and safety measures in investment projects E.B. Abrahamsen, F. Asche & T. Aven, Norway	Power network reliability analysis system (*B15*) V. Matuzas, D. Tarvydas, R. Krikstolaitis & N. Listopadskis, Lithuania
12^{00} – 12^{20}	**Coffee/Tea Time** (Conference Centre Hall, First Floor)			

Tuesday, June 28, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1 - Methods of Hazard and Risk Analysis* Chairs: R. Briš, Czech Republic & T. Nowakowski, Poland	**Stream B** (Room B, No 2026) *B7 – Reliability and Safety Data Collection and Analysis* Chairs: J. Fragola, USA & R. Wawruch, Poland	**Stream C** (Room C, No 1039) *B14 – Safety and Reliability Management and Decision Making* B15 – *Decision Support Systems and Software Tools for Safety and Reliability* Chairs: R. Bye, Norway & P. Kafka, Germany	**Stream D** (Room D, No 1033) *B4 – Bayesian Methods in System Safety and Reliability* *B5 – Dynamic Reliability* Chairs: T. Aven, Norway & M.S. Finkelstein, South Africa
$12^{20} – 12^{40}$	Methods for bridge safety assessments with respect to ship collisions L. Gucma, Poland	Comparison of parametric and nonparametric estimations of lifetime distributions from incomplete warranty data M. Delonga & B. Bertsche, Germany	Human factor in a vessel navigational decision support system Z. Pietrzykowski, Poland	Real time updating of risk assessments during a drilling operation M. Sandøy & T. Aven, Norway
$12^{40} – 13^{00}$	Risk assessment of road tunnels based on Bayesian network M. Holický & L. Šajtar, Czech Republic	Applying the Taylor approach for reliability estimation of drills C. Dietl, Germany	The safety case and the lessons learnt for the reliability and maintainability case. M. Revie, T. Bedford & L. Walls, UK	Solving dynamic reliability problems by means of ordinary and fluid stochastic petri nets D. Codetta-Raiteri & A. Bobbio, Italy
$13^{00} – 13^{20}$	The infrastructure of a probabilistic safety assessment I. Ingemarson & M. Knochenhauer, Sweden	An analysis of drag forces based on L-moments P.H.A.J.M. van Gelder, Netherlands & M.D. Pandey, Canada	Safety and reliability management system of hazard goods transportation J. Szpytko, Poland	Reliability model of the multi-stage operation F. Grabski, Poland
$13^{20} – 13^{40}$	Optimization of a procedure for emergency cooling and pressure relief for reactors with exothermal processes D.W. Jabłoński & U. Hauptmanns, Germany	Analysis of the barge repair ability basing on statistical data R. Iwańkowicz, R. Rutkowski, T. Urbański, T. Graczyk & T. Jastrzębski, Poland	Reducing encounters numbers in vessel traffic schemes W. Filipowicz & T. Neumann, Poland	The observational method in geotechnical engineering, a risk-based approach R.B. Jongejan, J.K. Vrijling & S. Van Baars, Netherlands
$13^{40} – 14^{00}$	Does deregulation of the railways increase safety in rail transportation? S.O. Johnsen & M. Tungland, Norway	Continuous monitoring of warranty costs Z. Vintr & M. Vintr, Czech Republic	Multicriteria decision support for vessels routing W. Filipowicz, M. Łącki & J. Szłapczyńska, Poland	Reliability optimization of a parallel system with redundant dependences H. Yu, C. Chu, F. Yalaoui & É. Châtelet, France
$14^{00} – 15^{20}$	**Lunch** (Conference Centre Halls, Second and Third Floor)			

Tuesday, June 28, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1 - Methods of Hazard and Risk Analysis* Chairs: L. Gucma, Poland & B. Leira, Norway	**Stream B** (Room B, No 2026) *B7 – Reliability and Safety Data Collection and Analysis* Chairs: P.H.A.J.M. van Gelder, Netherlands & A. Weintrit, Poland	**Stream C** (Room C, No 1039) *B15 – Decision Support Systems and Software Tools for Safety and Reliability* Chairs: W. Filipowicz, Poland & Z. Vintr, Czech Republic	**Stream D** (Room D, No 1033) *B9 – Software Reliability and Security* *B4 – Bayesian Methods in System Safety and Reliability* Chairs: M. Kimura, Japan & W. Zamojski, Poland
$15^{20} – 15^{40}$	Identification and reduction of risks in remote operations of offshore oil and gas installations. S.O. Johnsen, M.A. Lundteigen, H. Fartum & J. Monsen, Norway	Flood forecast using Bayesian approach J.Simaityte Volskiene, J. Augutis, E. Uspuras & I. Zutautaite, Lithuania	Hazard identification in process plant through CAD, CAE and PDM systems F. Giannini, M. Monti, S. Ansaldi & P. Bragatto, Italy	A PKI security reliability assessment methodology C. Lambrinoudakis, A. Platis & A. Leros, Greece
$15^{40} – 16^{00}$	Challenges in remote control and remote co-operation of offshore oil and gas installations in the North Sea S.O. Johnsen, A. Askildsen & K. Hunnes, Norway	Simplified reliability data collection and analysis in the power system M. Stojkov, R. Kovacevic & S. Nikolovski, Croatia	Optimal visualization of navigational situation in pilot support systems with use of safety criteria M. Gucma, Poland	Testing interval investigation using Bayesian approach R. Alzbutas, J. Augutis, V. Matuzas & I. Zutautaite, Lithuania
$16^{00} – 16^{20}$	BDD complexity reduction by component fault trees B. Kaiser & A. Zocher, Germany	A reliability study for the evaluation of file transfer protocol requests P. Tsopelas, Greece	The safety of manoeuvring in confined areas as a function of navigation coordinates systems S. Gucma, Poland	Statistical probability assessment of the technological transportation process A. Baublys, Lithuania
$16^{20} – 16^{40}$	Uncertainty analysis performed for the review of a large scale probabilistic seismic hazard analysis J.-U. Klügel, Switzerland & F. Groen, USA	Mapping up and down common cause failure rates and impact weights J.K. Vaurio, Finland	Information portal of the Gdynia Maritime Administration Office as a tool for managing maritime safety and environment protection I. Jagniszczak & P. Jędrzejowicz, Poland	An approach to determine uncertainties of prior information – the transformation factor T. Hitziger & B. Bertsche, Germany
$16^{40} – 17^{00}$	Critical assessment of the organisational learning system of the fire service in response to fatal accidents to firemen F. Koornneef, A.R. Hale & W. van Dijk, Netherlands	Fast reliability prediction in the medical equipment industry R.A. Ion, S. Roelsma, P. Sonnemans & A. Brombacher, Netherlands & M.J. Newby, Netherlands/UK	Development of an integrated software for reliability analysis and PSA, SAREX H. Seok, D.K. Kim, H.K. Lim & S.K. Kang, Korea	On how to use expert judgments in regularity analyses to obtain good predictions A. Hjorteland & T. Aven, Norway
$17^{00} – 17^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)			

Tuesday, June 28, 2005

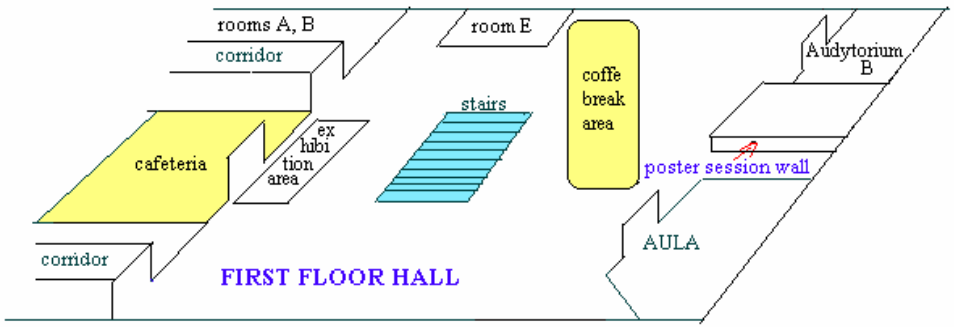
Time	Conference Events			
	Sessions			
	Stream A (Room A, No 2025) *Workshop 2 – Functional Safety* Organizer: K. Kosmowski, Poland	**Stream B** (Room B, No 2026) *ESRA General Assembly Meeting* Chairs: ESRA Management Board	**Stream C** (Room C, No 1039) *S6 – Genetic Algorithms in Reliability Optimisation* Chairs: D.W. Coit, USA & G. Levitin, Israel	**Stream D** (Room D, No 1033) S8 – *Integrated Maintenance, Reliability and Quality Improvement Concepts* Organiser: M.F. Ramalhoto, Portugal
17^{20} – 17^{40}	Issues: ■ Activities of Committee for Functional Safety within Polish Safety and reliability Association	Agenda: (*under completing*)	Solution of stochastic multi-objective system reliability design problems using genetic algorithms D.W. Coit & F. Baheranwala, USA	Modelling Quality and Reliability Relations I. Pabst, P.C. Müller & C. Dietl, Germany
17^{40} – 18^{00}	■ Introduction to Functional Safety in a context of a generic standard IEC 61508 ■ Functional Safety in the Process Industry in the context of IEC 61511 (examples and challenges) ■ Current problems of Functional Safety in life cycle		Genetic algorithm in optimization of fault-tolerant software G. Levitin & H. Ben-Haim, Israel	An innovative strategy to put integrated maintenance, reliability and quality improvement concepts into action M. F. Ramalhoto, Portugal & R. Göb, Germany
18^{00} – 18^{20}	■ Concluding remarks and research directions		Determination of point of maximum likelihood in failure domain using genetic algorithms A.S. Obadage & N. Harnpornchai, Thailand	
18^{30} – 19^{00}	**Bus Transportation from Conference Centre to Conference Hotels** Departure: 18^{30}			
19^{30} – 20^{00}	**Walking from Conference Hotels to Bohaterów Monte Cassino Street in Sopot** Departure: 19^{30}			
20^{00} -	**Sopot at/by Night** Start: Dinner at the restaurant with the name marked at a special ticket			

Tuesday, June 28, 2005

Time	Conference Events
	Poster Sessions (Conference Centre Hall, First Floor)
$10^{20} – 12^{00}$	The neural methods in expert judgment processing, A. Brandowski, W. Frackowiak & H. Nguyen, Poland Co-narrative training as a method of safety education, R. Bye & A. Solem, Norway Innovations in power network enterprises increasing effectiveness of the processes ensuring continuity and quality of electric energy supplies, G. Dąbrowska-Kauf, Poland Identification of hazard zones for operators in ship power plants, A. Podsiadło & W. Tarełko, Poland Modelling a decision-making process of hazard zone identification in ship power plants, A. Podsiadlo & W. Tarelko, Poland Estimating warranty costs in the initial stages of product life, M. Vintr, Czech Republic
$12^{20} – 14^{00}$	Analysis of causes of crude oil tankers' disasters, H. Bugłacki & P. Gande-Milewska, Poland Validation of decompression schedules for the polish navy, R. Kłos, Poland Logistic regression as a model for the assessment of decompression risks, R. Kłos, Poland Dynamic games methods in navigator decision support system for safety navigation, J. Lisowski, Poland Investigation of influence of organic polymer on TML value of the mineral concentrates, M. Popek, Poland
$15^{20} – 17^{00}$	Active safety in operation of electric locomotives, M. Cygan, Poland A feature selection approach based on principal component analysis and synaptic weights for mechanical faults diagnosis, B. Kilundu, Congo & P. Dehombreux, Belgium The system of safe ship steering at sea, A. Łebkowski, M. Tobiasz, K. Dziedzicki, M. Tomera & R. Śmierzchalski, Poland Problems associated with evacuation from the ship in case the emergency situation, D.H. Łozowicka, Poland Risk assessment in textile and wood processing industry, P.Tint, K.Reinhold & G.Kiivet, Estonia

Wednesday, June 29, 2005

Time	Conference Events
$8^{00} – 8^{30}$	**Bus Transportation from Conference Hotels to Conference Centre** Departure: 8^{00}
$8^{30} – 9^{00}$	**Registration** (Conference Centre Hall, Ground Floor)
$9^{00} – 10^{00}$	**Plenary Lecture** (AULA, Ground Floor) Methods of Probability Assessment of Ships' Accidents on Restricted Water Areas Speaker: Lucjan Gucma, Poland Opponents: P.H.A.J.M. van Gelder, Netherlands & C. Guedes Soares, Portugal Chairs: J. Wang, UK & A. Weintrit, Poland
$10^{00} – 10^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)



Wednesday, June 29, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1 - Methods of Hazard and Risk Analysis* Chairs: I. Papazoglou, Greece & V. Rouhiainen, Finland	**Stream B** (Room B, No 2026) *B7 – Reliability and Safety Data Collection and Analysis* Chairs: T. Bedford, UK & P. Jędrzejowicz, Poland	**Stream C** (Room C, No 1039) *B13 – Human and Organizational Factors in Safety and Reliability* Chairs: W. Filipowicz, Poland & M.F. Ramalhoto, Portugal	**Stream D** (Room D, No 1033) B22 – *Risk Perception and Communication* *B21, B24* Chairs: M. Aggarwal, India & A. Podsiadło, Poland
10^{20} – 10^{40}	Time series – the tool for traffic safety analysis R. Krystek & J. Żukowska, Poland	Evaluation of reliability using shadowed sets and fuzzy lifetime data O. Hryniewicz, Poland	Bayesian parameter estimation in human reliability analysis X. He, J. Tong & X. Huang, China	Organizational culture and risk perception R. Bye & G.M. Lamvik, Norway
10^{40} – 11^{00}	Rank reliability assessment of the technical object at early design stage with limited operational data. Case study. M. Młyńczak & T. Nowakowski, Poland	Analysis of reliability model of combined transportation system T. Nowakowski & M. Zając, Poland	Integrating human factors into process hazard analysis S.G. Kariuki & K. Löwe, Germany	An acceptable risk? Medias portrayal of the process leading to a decision on whether or not to allow year-round petroleum activities in the Barents Sea S. Gjøse & T. Aven, Norway
11^{00} – 11^{20}	A methodology of risk assessment for operation and maintenance tasks A. Nagasaka, M. Ebisu, T. Aikawa, K. Hayase & K. Takano, Japan	Estimation of high consequence low frequency events through empirical Bayes procedures J. Quigley, T. Bedford & L. Walls, UK	Methodological and practical aspects of maintenance planning in hazardous systems K.T. Kosmowski & J.M. Piesik, Poland	What does safety culture mean to the shop floor in the nuclear industry? J. Harvey, G. Erdos, H. Bolam & D. Gregory UK
11^{20} – 11^{40}	Risk analysis; a tool to support decision making. But, who cares about the decisions? O. Njå & T.E. Nøkland, Norway	Component reliability data in argentinean research reactors: collection and processing S.S. Rivera, J.E. Núñez Mc Leod, J.H. Barón, N. Rico & A. Cataldi, Argentina	Models of behavior and human error S. Massaiu, Norway	A method for the estimation of loss of life caused by floods (*B21*) S.N. Jonkman & J.K. Vrijling, Netherlands
11^{40} – 12^{00}	Safety management coping with complexity in air traffic management E. Perrin & J. Spouge, Norway	Collection of reliability and maintenance data - development of an international standard H. A. Sandtorv, R. Østebø & H. Kortner, Norway	Reliability forecast of automotive systems based on soft computing techniques P. Citti, M. Delogu, V. Fontana & M. Ammaturo, Italy	Safety aspects of ammonia as a fuel in fuel-cell-powered vehicles (*B24*) N.J. Duijm, J.L. Paulsen & F. Markert, Denmark
12^{00} – 12^{20}	**Coffee/Tea Time** (Conference Centre Hall, First Floor)			

Wednesday, June 29, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1 - Methods of Hazard and Risk Analysis* Chairs: M. Młyńczak, Poland *&* J.K. Vaurio, Finland	**Stream B** (Room B, No 2026) *B14 – Safety and Reliability Management and Decision Making* M. Cepin, Slovenia & J. Luxhoj, USA	**Stream C** (Room C, No 1039) *B13 – Human and Organizational Factors in Safety and Reliability* Chairs: T. Jastrzębski, Poland & V.M. Trbojevic, UK	**Stream D** (Room D, No 1033) *B24 – Integrated Safety and Reliability Concepts* B19 – *Occupational Safety* Chairs: J.H. Cha, Korea & I. Pabst, Germany
$12^{20} – 12^{40}$	Quantified risk assessment for plants producing and storing explosives I.A. Papazoglou, P. Saravanos, J. Giakoumatos & O.N. Aneziris, Greece	On the use of bubble diagrams in project risk management, with application to safety E.B. Abrahamsen & T. Aven, Norway	Attitudes to different energy sources J. Harvey, S. Joyce & P. Norman, UK	Deterministic and non-deterministic methods for analyzing and improving equipment performance in offshore industry based on dependability V. Ebrahimipour & K. Suzuki, Japan
$12^{40} – 13^{00}$	Ships navigational risk assessment in port areas V. Paulauskas, Lithuania	Conception of the national sea safety management and monitoring system R. Wawruch, Poland	Accidents, safety and crew interaction in the maritime domain R. Pyne, UK & T. Koester, Denmark	An improvement of industrial and technological safety based upon the nuclear safety concept of "Defense in Depth" E. Garbolino, F. Guarnieri & J. Cambon, France
$13^{00} – 13^{20}$	An approach to carry out a boiler plant hazard assessment V. Rouhiainen, M. Reunanen, J. Sarsama & J. Schabel, Finland	Perspectives on risk acceptance criteria and management for offshore installations – application to a development project T. Aven, J.E. Vinnem & F. Vollen, Norway	Managing human and organizational factors in the construction and marine industries M. Shammas, Norway/UK & O.T. Gudmestad, Norway	Environmental indicators for agricultural management: the problem of integration K. Hayashi, Japan
$13^{20} – 13^{40}$	Operational risk reduction of turbines by optimization of its start-ups A. M. Rusin & M. J. Lipka, Poland	A population-based algorithm for the hazardous materials routing problem D. Barbucha, Poland	Safety as an organizational value: improving safety practices and learning from accidents S. Silva & M.L. Lima, Portugal	Optimisation of OSH-related management processes in enterprises M. Pęciłło, Poland
$13^{40} – 14^{00}$	Reliability analysis based on cost of failure M.T. Todinov, UK	Multicriterial optimization of semi-Markov processes with discount K.P. Bernaciak, Poland	Developing risk management through specific safety psychological training M. Specht, C. Denis-Rémis, F.-R. Chevreau, J.-L. Wybo, Luc Guerillot, V. Guinet & W. Rangamie, France	Dynamic safety margin in fault diagnosis and isolation (*B23*) M. Abdel-Geliel & E. Badreddin, Germany
$14^{00} – 15^{20}$	**Lunch** (Conference Centre Halls, Second and Third Floors)			

Wednesday, June 29, 2005

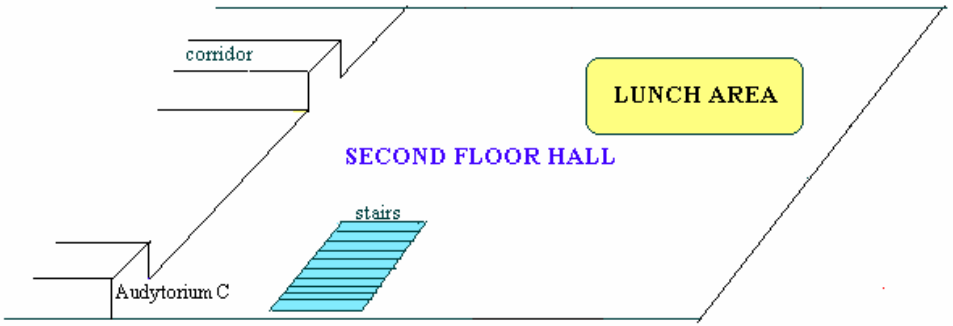
Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B1* - Methods of Hazard and Risk Analysis Chairs: I.A. Papazoglou, Geece & J. Żukowska, Poland	**Stream B** (Room B, No 2026) *B14 – Safety and Reliability Management and Decision Making* Chairs: G. Albeanu, Romania & L. Schueremans, Belgium	**Stream C** (Room C, No 1039) *B18 – Accident and Incident Investigation* Chairs: K. Hayashi, Japan & J. Markova, Czech Republic	**Stream D** (Room D, No 1033) S2 – *Reliability-Adaptive Systems* Organiser: U.K. Rakowsky, *Germany*
$15^{20} – 15^{40}$	Level 2 PSA approach for Ignalina RBMK-1500 reactor in Lithuania V. Kopustinskas, E. Urbonavičius, Kaliatka, S. Rimkevičius, E. Ušpuras & A. Bagdonas, Lithuania & P. Hellström & G. Johanson, Sweden	Sharing experience on risk management to design future industrial systems : shape-risk, an European co-ordination action Ch. Bolvin & O. Salvi, France	Risk criteria in EU (*B1*) V.M. Trbojevic, UK	An introduction to reliability-adaptive systems U.K. Rakowsky, Germany
$15^{40} – 16^{00}$	Time redundancy in a transportation logistics system D. Caban & H. Maciejewski, Poland	Risk based evaluation of space exploration architectures W.M. Cirillo, J.F. Letchworth, B.F. Putney, J.R. Fragola, E.Y. Lim & C. Stromgren, USA	DP incidents on mobile offshore drilling units on the Norwegian Continental Shelf H. Chen & T. Moan, Norway	General conditions for online estimation and optimization of reliability characteristics I. Pabst & P.C. Müller, Germany
$16^{00} – 16^{20}$	Incorporating human and organizational factors in risk analysis for offshore installations S. Sklet, T. Aven, S. Hauge & J.E. Vinnem, Norway	Providing Guidance in a Non Prescriptive Environment R. Denning, UK	Management influences on major hazard prevention: the ARAMIS audit (*B13*) A.R. Hale, F.W. Guldenmund, L.H.J. Goossens & J. Karczewski, Netherlands & N-J. Duijm, Denmark & D. Hourtoulou, J-C. LeCoze, E. Plot & F. Prats, France & B. Kontic, D. Kontic & M. Gerbec, Slovenia	Risk-based dynamic reconfiguration of safety monitoring systems T. Kohda & W. Cui, Japan
$16^{20} – 16^{40}$	Qualitative analysis of human, technical and operational barrier elements during well interventions S. Sklet, T. Steiro & O. Tjelta, Norway	Major accident hazard and land-use planning: difficulties in law requirements rendering and real application to existing overexploited areas L. Fiorentini, C. Gasilini, Romano & S. M. Scarpellini, Italy	Systematic approach to naval accidents and breakdowns in the Polish Navy Z. Korczewski & R.J. Wróbel, Poland	An approach to affect the probability of failure by changed operation modes K. Wolters & D. Söffker, Germany
$16^{40} – 17^{00}$	Assessment of the impact of software failures on the reliability of a man-computer system W. Zamojski & D. Caban, Poland	Risk administration of not-implemented safety measures A.W. Heskestad, M.L. Eknes & H.K. Endresen, Norway		An approach for online reliability evaluation and prediction of mechanical transmission components M. Maisch, B. Bertsche & R. Hettich, Germany
$17^{00} – 17^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)			

Wednesday, June 29, 2005

Time	Conference Events			
	Sessions			
		Stream B (Room B, No 2026) Chairs: S7 – *Modelling Maintenance Practice* Organisers: E. Zio, Italy & Ch. Berenguer, France	**Stream C** (Room C, No 1039) *S6 – Genetic Algorithms in Reliability Optimisation* Organiser: G. Levitin, Israel	**Stream D** (Room D, No 1033) S2 – *Reliability-Adaptive Systems* Organiser: U.K. Rakowsky, *Germany*
$17^{20} – 17^{40}$		A bivariate process model for maintenance and inspection planning M.J. Newby & C.T. Barker, UK	Calibration of reduced models by multi-objective genetic algorithms M. Marseguerra, E. Zio & R. Canetta, Italy	Reliability-adaptive tool change management of transfer lines C. Dietl & U.K. Rakowsky, Germany
$17^{40} – 18^{00}$		A block replacement policy for a periodically inspected two-unit parallel standby safety system R.I. Zequeira & C. Bérenguer, France	Use of metrics with multiobjective GA. Application to the selection of an optimal maintenance strategy in the RCM context S. Martorell, S. Carlos & A. Sánchez, Spain	On multi-system reliability and operation U.K. Rakowsky, Germany
$18^{00} – 18^{20}$		A multiple criteria model for ship maintenance inspection optimization J. Wang, UK & A. Pillay, Norway	Multi-objective evolutionary optimal design of N-version software system H. Yamachi, H. Yamamoto & Y. Tsujimura, Japan	Integration of reliability concepts, diagnosis and control to realize safe systems D. Söffker, K. Kashi & K. Wolters, Germany
$18^{30} – 19^{00}$	**Bus Transportation from Conference Centre to Conference Hotels** Departure: 18^{30}			
$19^{30} – 20^{00}$	**Bus Transportation from Conference Hotels to "Falko"** Departure: 19.30			
20^{00} - 1^{00}	**Conference Dinner** ("Falko" Restaurant)			
$1^{00} – 2^{00}$	**Bus Transportation from "Falko" to Conference Hotels** Departure: 01.00			

Thursday, June 30, 2005

Time	Conference Events
$8^{00} – 8^{30}$	**Bus Transportation from Conference Hotels to Conference Centre** Departure: 8^{00}
$8^{30} – 9^{00}$	**Registration** (Conference Centre Hall, Ground Floor)
$9^{00} – 10^{00}$	**Plenary Lecture** (AULA, Ground Floor) Multi-Attribute Utility Theory and FN-Criteria Speaker: Tim Bedford, United Kingdom Opponents: B. Ale, Netherlands & P. Hokstad, Norway Chairs: P. Jędrzejowicz, Poland & E. Zio, Italy
$10^{00} – 10^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)



Thursday, June 30, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B6 – Maintenance Modelling and Optimisation* Chairs: D. Barbucha, Poland & R. Denning, UK	**Stream B** (Room B, No 2026) *B10 – Reliability of Network Systems* Chairs: T. Nowakowski, Poland & M.F. Ramalhoto, Portugal	**Stream C** (Room C, No 1039) *B16* – Safety Standards and Regulations Chairs: M. Cepin, Slovenia & O. Hryniewicz, Poland	**Stream D** (Room D, No 1033) S5 – *Stochastic and Fuzzy Modelling on Repairable Systems* Organiser: R. Guo, South Africa
$10^{20} – 10^{40}$	An improved 3- neighborhood heuristic algorithm for constrained reliability optimization M. Agarwal & S. Aggarwal, India	Stochastic and functional analysis of a public mobile network in a safety critical context Bobbio, E. Ciancamerla, M. Minichino & E. Tronci, Italy	Development of risk criteria in nuclear power plants M. Cepin, Slovenia	A fuzzy analysis on repairable system via simulation Yu Ge Dong & Zheng Ni, China
$10^{40} – 11^{00}$	Maintenance optimization of the RP10 shutdown safety system A.H. Aguirre & G.S. Lazaro, Peru	Maintenance optimization of a common simple distribution system R. Briš, S. Rusek & R. Goňo, Czech Republic	On the use of risk analysis in maritime certification and classification G. Chantelauve, France	Minimal repair and lifesaving in heterogeneous populations M.S. Finkelstein, South Africa
$11^{00} – 11^{20}$	Multi-attribute approaches for maintenance policies selection problem M. Bertolini, E. Bottani & M. Bevilacqua, Italy	An application of game theory to security and reliability analysis I.J. Jóźwiak, W. Laskowski & J. Zych, Poland	Alternative stability requirements and application of the FSA methodology L. Kobyliński, Poland	Simultaneous assessment of the efficiency of preventive and corrective maintenance for repairable systems in a competing risk framework Y. Dijoux, L. Doyen & O. Gaudoin, France
$11^{20} – 11^{40}$	Optimization of the maintenance decision for a pipeline in oil production B. Castanier, France & M. Rausand, Norway	A lower bound for the node-pair reliability of network systems with small distances between adjacent nodes J. Malinowski, Poland	Hydrogen applications to aircrafts and cars – basic safety aspects G. Klein, B. Zapf & T. Weidl, Germany	A fuzzy reliability analysis based on the transformation between discrete fuzzy random variable and discrete random variable Yu Ge Dong & Zheng Ni, China
$11^{40} – 12^{00}$	A stochastic approach to burn-in procedures in accelerated environment J. H. Cha & M. H. Na, Korea	Reliability and credibility evaluation of networked control systems C. Simon, J.M. Thiriet, P. Barger & J.F. Aubry, France	Alternative procedures for combination of actions in ISO standards J. Markova, Czech Republic	Stochastic System Age Processes R. Guo & T. Dunne, South Africa
$12^{00} – 12^{20}$	**Coffee/Tea Time** (Conference Centre Hall, First Floor)			

Thursday, June 30, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B6 – Maintenance Modelling and Optimisation* Chairs: M. Aggarwal, India & A. Behr, Germany	**Stream B** (Room B, No 2026) *B11 – Uncertainty and Sensitivity Analysis,* *B12 – Expert Methods in Safety and Reliability* Chairs: L. Kobyliński, Poland & M. Eid, Spain	**Stream C** (Room C, No 1039) *B18 – Accident and Incident Investigation* B19 – *Occupational Safety* Chairs: O. Hryniewicz, Poland & E.R. Vaidogas, Lithuania	**Stream D** (Room D, No 1033) S5 – *Stochastic and Fuzzy Modelling on Repairable Systems* Organiser: R. Guo, South Africa *B6, B14*
$12^{20} – 12^{40}$	Optimization of the preventive maintenance plan of a series components system J.A.C. Duarte, J.C. Taborda, A. Craveiro & T. P. Trigo, Portugal	Uncertainty analysis for the predicted proportion of fuel rods failed during a hypothetical loss of coolant accident M. Kloos, Germany	Mathematical modeling of heat and mass transfer during fire in room with complex geometry S.V. Puzach & N.V. Puzach, Russia	The optimal preventive maintenance model with degradation rate reduction for the repairable systems C.-Y. Cheng, Taiwan
$12^{40} – 13^{00}$	Model of system availability caused by spare parts inventory level A. Jodejko, Poland	Input parameters distribution sensitivity study of RBMK-1500 reactor one group distribution header complete blockage scenario V. Kopustinskas, R. Urbonas & A. Kaliatka, Lithuania & R. Bolado-Lavín, Netherlands	Safety practices and procedures used when three major accidents occurred in South Africa J.K. Visser, South Africa	Statistical estimation on imperfectly maintained system C.-Y. Cheng & C.-F. Liaw, Taiwan
$13^{00} – 13^{20}$	Maintenance scheduling by variable dimension evolutionary algorithms P. Limbourg & H.-D. Kochs, Germany	A statistical approach to control conservatism of robust uncertainty propagation methods; application to accidental thermal hydraulics calculations E. de Rocquigny, France	Using barrier concepts to understand priorities in the prevention of occupational accidents A.R. Hale, B.J.M. Ale, C. Paas, J.T. Quik, M. Mud, L.J. Bellamy, J. Whiston, H. Baksteen, J. Post, P Uijt de Haag & Joy Oh, Netherlands & T. Geyer, UK	Real applications of IEC61511 standard: Towards the optimization of safety cost P. Carli, V. Rossini & L. Fiorentini, Italy (*B6*)
$13^{20} – 13^{40}$	Optimising the strategy of track maintenance C. Meier-Hirmer, F. Sourget & M. Roussignol, France	Formal safety assessment of container liner supply chains Z.L. Yang, S. Bonsall & J. Wang, UK & Q.G. Fang, China	An analysis of accidents caused by improper functioning of machine control systems M. Dźwiarek, Poland	The "IDEA" framework L. Fiorentini, V. Rossini & A. Respighini, Italy (*B14*)
$13^{40} – 14^{00}$	Modelling the deterioration of the coating on steel structures R.P. Nicolai, G. Budai, R. Dekker & M. Vreijling, Netherlands	Experts information estimation and application using Bayesian and fuzzy inference R. Alzbutas, Lithuania	Occupational risk in decommissioning/ removal projects S. Haugen, H. Myrheim, D.R. Bayly & J.E. Vinnem, Norway	
$14^{00} – 15^{20}$	**Lunch** (Conference Centre Halls, Second and Third Floors)			

Thursday, June 30, 2005

Time	Conference Events			
	Sessions			
	Stream A (Auditorium C, Second Floor) *B6 – Maintenance Modelling and Optimisation* Chairs: D. Caban & J.A.C. Duarte, Portugal	**Stream B** (Room B, No 2026) *B13 – Human and Organizational Factors in Safety and Reliability* Chairs: J. Celko, Slovakia & L. Kobyliński, Poland		
$15^{20} – 15^{40}$	Redundancy optimization for multi-state systems under repair policies M. Nourelfath & D. Ait-Kadi, Canada	Risk, probabilility and uncertainty for complex technical systems D. Serbanescu, South Africa		
$15^{40} – 16^{00}$	A tool for optimising the maintenance of equipment of electrical networks S. Rusek, R. Goňo & R. Briš, Czech Republic	Partial safety factor for historical masonry arch bridges M. Curbach & D. Proske, Germany		
$16^{00} – 16^{20}$	Adaptive maintenance policy for a deteriorating system with random change of mode B. Saassouh, L. Dieulle & A. Grall, France	Automatic design optimisation for reliable systems with human operators I. Eusgeld & Ch. Stoica, Germany		
$16^{20} – 16^{40}$	Numerical analysis of nonstationary pollutant spread through the industrial sewer and rivers V.E. Seleznev, O.I. Zelenskaya & S.N. Pryalov, Russia	Quality and productivity improvement by implementation of total productive maintenance system J.M. Piesik, Poland		
$16^{40} – 17^{00}$	Automatic fit of parameters under identification of mathematical models to the real failures V.E. Seleznev, V.V. Aleshin & A.L. Boychenko, Russia	Improving integrity of offshore marine operations by incorporating human, management and organisational barriers in risk assessment V.M. Trbojevic, UK & O.T. Gudmestad, Norway		
$17^{00} – 17^{30}$	**Conference Closing** (AULA, Ground Floor) Conference Summary and Acknowledgments by Krzysztof Kołowrocki, ESREL 2005 Chairman Message from Yoannis A. Papazoglou, ESRA Chairman (Elect) Prospects on ESREL 2006 by Carlos Guedes Soares, ESREL 2006 Chairman			
$17^{30} – 18^{20}$	**Farewell Party** (Conference Centre Hall, First Floor)			
$18^{30} – 19^{00}$	**Bus Transportation from Conference Centre to Conference Hotels** Departure: 18.30			

USEFUL INFORMATION

Plenary Lectures – Organisation

Lectures will be organized in the following way (steps):
Plenary lecture presented by the author, 30-40 minutes;
Evaluation of the lecture by the first "opponent", 5 minutes;
Evaluation the lecture by the second "opponent", 5 minutes;
Questions from the audience, 5 minutes;
Author answers and final remarks, 5 minutes.

Oral Sessions – Organisation

The sessions will be organized in the following way (steps):
Paper presented by the author, 15 minutes;
Questions from the audience, author answers and session chairmen remarks, 5 minutes.

Poster Sessions – Organisation

The sessions will be organized in the following way:
Posters will be displayed at the board placed at the Conference Centre first floor;
6 poster sessions will be organised, 100 minutes each one;
Posters will be accompanied by the authors to give the possibility of answering and explanation of any questions on the paper contents.
The form of the posters is up to authors. The only restrictions are the poster sizes that should not exceed 100 cm in width and 100 cm in height.

Notice for speakers and session chairs

In each room, a PC laptop and a multi-media overhead projector for power-point presentation will be provided. Conference speakers are requested to come to their session room not later than 10 minutes before the session beginning and to contact the session chairmen and technical personnel in order to prepare their presentation in advance. The speaker presenting the paper should bring his presentation on CD and give it to the technical personnel (a student or an assistant) to copy it to the hard drive.
15 minutes are allotted to each speaker for presentation and 5 minutes for questions from the audience and discussion afterwards.
The speaker is requested to introduce himself in 2-3 sentences before the paper presentation.
Session chairmen are requested to come to their session room not later than 10 minutes before the session beginning and they are responsible for fluent and interesting run of the session. The session chairman is requested to inform the speaker about 2 last remaining minutes of his presentation showing him a yellow sheet of paper. After the speaker presentation, the session chairmen should firstly ask the audience for questions about the presentation and next give his own questions and comments.

Transportation

On Sunday, June 26, 2005, the buses for transportation between the Hotels and the Conference Centre will be provided: departures from the fronts of the hotels "Marina" and "Rzemieślnik" at 16.30, return departures from the Conference Centre at 21.00.
Each day from Monday, June 27, 2005 until Thursday, June 30, 2005 the buses for transportation between the Hotels and the Conference Centere will be provided: departures from the fronts of the hotels "Marina" and "Rzemieślnik" at 8.00, return departures from the front of the Conference Centre at 18.30.
There is a possibility to go individually to the Conference Centre and back to the Conference Hotels by Tramway No 6.
There is a possibility to go individually to Sopot and back to the Conference Hotels using Buses No 143, 117.

Social Programme:

Reception

Sunday, June 26, 2005, 19.00 - 21.00. Conference Centre Hall.
For conference participants and accompanying persons.

Coffee Time & Lunch

Monday, June 27, 2005 - Thursday, June 30, 2005. Conference Centre Halls.
For conference participants having personal conference badges.
Tuesday, June 28 - Wednesday, June 29, 2005. Conference Centre Halls.
For RIMAP participants having personal conference badges.
Thursday, June 30, 2005. Conference Centre Halls.
For SAFERELNET participants who paid a Special Fee to ESREL 2005 budget.

Picnic

Monday, June 27, 2005, 20.00-24.00. "Wróblówka" croft.
For conference participants and accompanying persons having special tickets. Bus transportation will be provided: departures from the Conference Hotels at 19.30, return departures from "Wróblówka" at 24.00.

Sopot at/by Night

Tuesday, June 28, 2005, 20.00 – xx.xx. Restaurants at Monte Casino Street in Sopot.
For conference participants and accompanying persons having special tickets. Walking to the restaurant with the name marked at the ticket. Departure: 19.30.

Conference Dinner

Wednesday, June 29, 2005, 20.00 – 1.00. "Falko" restaurant.
For conference participants and accompanying persons having special tickets. For RIMAP participants having special tickets. Bus transportation will be provided, departures from the Conference Hotels at 19.30, return departures from "Falko" at 1.00.

Farewell Party

Thursday, June 30, 2005, 17.30 – 18.20. Conference Centre Hall.
For conference participants having personal conference badge and for invited guests.

Dear Participant,

Your valuable participation at ESREL 2005 will make it our common successful reliability and safety event.
Thank you very much in advance for your conference activity.

Krzysztof Kolowrocki
The Conference Chairman

SPONSORS (small):

ESREL 2005 - ASSOCIATED EVENTS

Tuesday, June 28, 2005

Time	Conference Associated Events
	2nd RIMAP Conference and RIMAP Workshop **on** **Risk-Based Inspection and Maintenance Procedures for European Industry**
	Stream E (Room E, No 2042)
$9^{00} – 13^{00}$	RIMAP Workshop Alternative Methods for Quantitative Risk Assessment and Risk Based Inspection for Insurances and Notified Bodies

Wednesday, June 29, 2005

Time	Conference Associated Events
	2nd RIMAP Conference and RIMAP Workshop **on** **Risk-Based Inspection and Maintenance Procedures for European Industry**
	Stream E (Room E, No 2042)
$9^{00} – 17^{00}$	2nd RIMAP Conference Risk-Based Inspections and Maintenance Procedures

Thursday, June 30, 2005

Time	Conference Associated Events
	2nd RIMAP Conference and RIMAP Workshop **on** **Risk-Based Inspection and Maintenance Procedures for European Industry**
	Stream E (Room E, No 2042)
$9^{00} – 12^{30}$	CEN Workshop 24 on Risk Based Inspection and Maintenance Procedures
$13^{30} – 17^{00}$	**Auditorium B** (Ground and First Floor) Technology Platform on Industrial Safety Launching Event

Wednesday, June 29, 2005

Time	Conference Associated Events
	European Project SAFERELNET Workshop
	Stream F (Room F, No 1057)
$12^{20} – 14^{00}$	Reliability Modelling by Monte Carlo Simulation – Tutorial – part 1, E. Zio
$14^{00} – 15^{20}$	**Lunch** (Conference Centre Halls, Second and Third Floor)
$15^{20} – 17^{00}$	Reliability Modelling by Monte Carlo Simulation – Tutorial – part 2, E. Zio

Thursday, June 30, 2005

Time	Conference Associated Events
	European Project SAFERELNET Meeting
	Stream F (Room F, No 1057)
$9^{00} – 9^{10}$	Welcome and Registration
$9^{10} – 9^{30}$	Objectives and Results of SAFERELNET, C. Guedes Soares
$9^{30} – 10^{10}$	Risk Management, A. Hessami
$10^{10} – 10^{50}$	Unified Risk Assessment, M. Faber
$10^{50} – 11^{15}$	**Coffee/Tea Time** (Conference Centre Hall)
$11^{15} – 11^{35}$	Assessment and Life Extension, M. Brehm
$11^{35} – 11^{55}$	Risk Based Maintenance Planning, C. Guedes Soares
$11^{55} – 12^{15}$	Benchmark or Case Studies (B. Commandeur to inform)
$12^{15} – 12^{35}$	Benchmark or Case Studies (B. Commandeur to inform)
$12^{35} – 13^{00}$	Benchmark or Case Studies (B. Commandeur to inform)
$13^{00} – 14^{00}$	**Lunch** (Conference Centre Halls, Second and Third Floors)
$14^{00} – 17^{30}$	Launching Event of the Industrial Safety Technology Platform (Auditorium B)

Friday, July 1, 2005

Time	Conference Associated Events
	European Project SAFERELNET Meeting
	Stream F (Room F, No 1057)
$9^{00} – 10^{30}$	Workpackage and Task Meetings
$10^{30} – 11^{00}$	**Coffee/Tea Time** (Conference Centre Bar)
$11^{00} – 12^{30}$	Workpackage and Task Meetings
$12^{30} – 14^{00}$	**Lunch** (Conference Centre Bar)
$14^{00} – 15^{30}$	Workpackage and Task Meetings
$15^{30} – 16^{00}$	**Coffee/Tea Time** (Conference Centre Bar)
$16^{00} – 17^{30}$	Workpackage and Task Meetings
$17^{30} – 18^{00}$	Plenary