MIRCE Akademy

Summer School 2001

System Operational Science

Through the practical application of System Operational Science we can improve in both the development and operation of complex technological systems to achieve greater effectiveness and lower total cost of ownership

Systems you can rely on - Tools and Science for the 21st Century

22 - 28 July 2001
Woodbury Park, Exeter, UK

Principal Speakers

Dr Knezevic

Dr Jezdimir Knezevic is the Director of the Mirce Akademy. He has over fifteen years of experience in reliability, maintenance and logistics engineering. He is the author of over 150 technical and scientific publications. He has also published two books titled, Reliability, Maintainability and Supportability - A Probablistic Approach and Systems Maintainability. He has received several international awards for his contribution to the field of logistics engineering.

Ian Knowles

Ian Knowles was Principal R&M Engineer in the Directorate of Procurement Management Policy in the UK Ministry of Defence (Procurement Executive) from 1985 until his retirement in February 2000. He served an engineering apprenticeship with the De Havilland Aircraft Company and graduated BSc (Eng) in Mechanical Engineering from London University in 1963 and MSc in Quality and Reliability Engineering from Birmingham University in 1973. His career has included positions in engineering design, project management and Quality Assurance in both Industry and the civil service. He is a member of the Institution of Mechanical Engineers and was appointed OBE in the New Year Honours 2000. He is now an independent consultant.

Anthony Harris

Tony Harris spent 19 years as an RAF Engineer Officer working at all levels of maintenance, including as the Senior Engineering Officer on a Tornado Squadron, and has experienced first-hand the impact of R&M on system operational success. He also worked as an ILS Engineer on the Eurofighter project and managed the RAF's in-house R&M consultancy following his Masters degree course at City University. Tony has trained many engineers in R&M techniques and is currently providing reliability, training and consultancy for a number of industrial and academic organisations.

Peter Mellor

Peter Mellor is currently a Lecturer in Information Technology in CSR, teaching software engineering. Research he has been involved with has been concerned with practical problems of software dependability measurement, particularly definitions of concepts and measures, data collection, storage, extraction and analysis, and the effect of system structure. He has been involved in several collaborative research projects in this area, and has worked on the development of standards relating to software safety and reliability within BSI, IEC and ISO. He is the UK principal expert on definitions of terms on IEC/TC56.

Professor Michael Pecht

Michael Pecht is the Director of the CALCE Electronic Products and Systems Center at the University of Maryland and a Full Professor. Dr. Pecht has a BS in Acoustics, a MS in Electrical Engineering and a MS and PhD in Engineering Mechanics from the University of Wisconsin. He is a Professional Engineer, an IEEE Fellow and an ASME Fellow and a Westinghouse Fellow. He has written eleven books on electronics products development. He served as chief editor of the IEEE Transactions on Reliability for eight years and on the advisory board of IEEE Spectrum. He is currently the chief editor for Microelectronics Reliability International. He serves on the board of advisors for various companies and provides expertise in design, test and reliability assessment of electronics products and systems.

THE SUMMER SCHOOL 2001 PROGRAMME

DAY 1

14.00 – 15.30	Overview – Aims of course.	
	Trends in user R&M requirements M/FFOP	I Knowles
15.30 – 16.00	Tea and cakes	
16.00 – 17.30	The 3 objectives - The R&M Case	I Knowles
17.30 – 18.30	Break	
18.30 – 19.30	**Tutorials:**	
	Probability and Stats Refresher (to basic Weibull)	A Harris
	R&M Techniques, run through Prediction FMECA FTA RGT	I Knowles

DAY 2

09.00 – 10.30	System Operational Success	Dr J Knezevic
10.30 – 11.00	Coffee and Danish	
11.00 – 12.30	System Operational Science	Dr J Knezevic
12.30 – 14.00	LUNCH	
14.00 – 15.30	The First Objective - Requirements Engineering	I Knowles / A Harris
15.30 – 16.00	Tea and Cakes	
16.00 – 17.30	Reliability Measures	MIRCE Akademy
17.30 – 18.30	Break	
18.30 – 19.30	**Tutorials:**	
	Probability and Stats Refresher (to basic Weibull)	A Harris
	R&M Techniques, run through Prediction FMECA FTA RGT	I Knowles

DAY 3

09.00 – 10.30	Software R&M	Peter Mellor
10.30 – 11.00	Coffee and Danish	
11.00 – 12.30	Software R&M	Peter Mellor
12.30 – 14.00	LUNCH	
14.00 – 15.30	Reliability of mechanical and Electromechanical Systems –	
	Physics of Failure Lifetime estimation	Prof J Strutt
15.30 – 16.00	Tea and Cakes	
16.00 – 17.30	Reliability of Mechanical and Electromechanical	
	Systems continued.	Prof J Strutt
17.30 – 18.30	Break	
18.30 – 19.30	FMECA on F1 Racing	
	Car Practical Example	Dr J Knezevic

DAY 4

09.00 – 10.30	Electronics R&M - Physics of Failure	Prof M Pecht
10.30 – 11.00	Coffee and Danish	
11.00 – 12.30	Electronics R&M World Class Best Practices	Prof M Pecht
12.30 – 14.00	LUNCH	
14.00 – 15.30	Vibration Fatigue	Dr A Halfpenny
15.30 – 16.00	Tea and Cakes	
16.00 – 17.30	HALT/HASS	Mr D Brown

Vendors Exhibition – Open Evening

DAY 5

09.00 – 10.30	Maintainability and Maintenance	MIRCE Akademy
10.30 – 11.00	Coffee and Danish	
11.00 – 12.30	Maintainability and Maintenance	MIRCE Akademy
12.30 – 14.00	LUNCH	
14.00 – 15.30	Availability and Simulation	Prof A Dubi
15.30 – 16.00	Tea and Cakes	
16.00 – 17.30	Availability and Simulation	Prof A Dubi

Industrial Visit

DAY 6

09.00 – 10.30	The 3rd Objective. R&M Assurance The R&M Case	MIRCE Akademy
10.30 – 11.00	Coffee and Danish	
11.00 – 12.30	The 3rd Objective. R&M Assurance	MIRCE Akademy
12.30 – 14.00	LUNCH	
14.00 – 15.30	The use and abuse of data	Prof M Newby
15.30 – 16.00	Tea and Cakes	
16.00 – 17.30	Test and Evaluation	Mr R Harris

Summer School Gala Dinner

DAY 7

09.00 – 10.30	Delivering Total System Effectiveness	Prof J Knezevic
10.30 – 11.00	Coffee and Danish	
11.00 – 12.30	Open Forum	
12.30 – 14.00	Lunch and Depart	

Professor Martin Newby

Professor Martin Newby of Statistical Science, Department of Actuarial Science and Statistics, City University. His research interests are:-

Dependability modelling: reliability, maintainability and risk analysis.

Applications of classical and Bayesian statistical methods in risk analysis and in reliability analysis, for both non-repairable and repairable systems.

Applied statistics.

Dr Andrew Halfpenny

Dr Andrew Halfpenny works for 'nCode International' where he spends his time addressing customers' fatigue problems and developing new software products including: Fatigue analysis of seam welds; Vibration fatigue analysis; Wavelet filtering and Analysis; The Pro/Mechanica fatigue advisor product.

Andrew started work as an apprentice Architect before deciding his Mathematical and Engineering skills outstripped his artistic ones. He then studied and practised as a structural engineer until 1992 when he took a position at UCL (University College London) designing a new breed of offshore wind turbine.

Andrew specialises in frequency-bases analysis, dynamics and fatigue.

Professor Arie Dubi

Professor Arie Dubi has an MSc in Applied Physics and a PhD in Physics from the Tel Aviv and Ben Gurion Universities respectively. His extensive experience in the field of nuclear physics and engineering have formed the basis of his research work into the application of the Monte Carlo methods in the field of reliability and maintainability engineering. Since 1984, Professor Dubi has maintained an extensive interest in the application of stochastic simulation in industrial high technology.

He has numerous academic awards for this work and is an active speaker on the subjects of modelling of realistic systems using the Monte Carlo methods. He is the author of "System Engineering and Monte Carlo Methods" published in November 1999.

Mr D Brown

Danny Brown graduated B.Eng.(Hons) in Mechanical Engineering from Leeds University. He served six years as an officer in REME dealing with maintenance of all types of equipment. He is now Vice President (Europe) for Qualmark Inc of Boulder, Colorado USA.

Roger Harris

Roger joined the MOD in 1971 and has nearly thirty years experience in the field of R&M Engineering.

Various R&M jobs within his career have given him a unique insight into the problems of specifying, purchasing, achieving and in-service monitoring of MOD's R&M requirements on a range of products from motorbikes to missiles.

He gained an MSc in Quality Improvement and System Reliability at City University in 1996 and has for the last five years worked in the Defence Evaluation and Research Agency (DERA) at Chertsey as a Principal Consultant for Reliability.

Currently he works for the Defence Science & Technology Laboratories (DSTL) and through his current research programme is actively involved with the development of the TRACS reliability prediction tool using Bayesian Belief Networks to support the evaluation of COTS products and automatic in-service data collection systems to support both the design phase and in-service fleet management of military vehicles.

Summer School Registration Form

Title	
Date	
Venue	

DELEGATE DETAILS

Dr/Mr/Mrs/Miss	Forename	Surname

Job Title	
Organisation	
Address	
	Postcode
Telephone	
Fax	
Email	

Home Address

	Postcode

Fees	Charge	VAT @ 17.5%	Total	£
Standard	£1650.00	£288.75	£1938.75	
Multiple Delegate Rate (3+)	£1485.00	£259.87	£1744.87	

Payment Details

Cheque payment of £   is enclosed payable to **MIRCE Akademy**

OR please charge my **Credit Card**

Card Number:

Name of Cardholder:

Expiry Date

OR by **BACS** to MIRCE Akademy, Nat West Bank plc, 59 High Street, Exeter, Devon EX4 3DL United Kingdom

Sort Code: 56-00-49 Account No: 25189603

OR please send an **invoice** to the above address and quote Purchase Order No:

How to Register

Please complete registration form and return it to MIRCE Akademy at least 14 working days prior to the start of the Summer School. Late bookings will be accepted but places cannot be guaranteed.

By Post – Please send your completed Registration Form and payment to:
MIRCE Akademy, PO Box 198, Exeter, EX2 7YX, United Kingdom

By Telephone – To reserve a place on the Summer School please call +44 (0) 1395 233856

By Fax – Please complete the registration form and return by fax to +44 (0) 1395 233899

By Email – mirce@mirce.com

Joining instructions will be sent to delegates approximately two weeks before the event.

How to Pay

Acceptable methods of payment are by cheque, credit card or bank transfer. Bank transfers must be free of all charges. Overseas delegates may pay by sterling draft drawn on a UK bank. It is the responsibility of the delegate to pay bank charges. A VAT receipt will be issued upon receipt of payment. *Please note that booking forms received without payment will be considered binding and invoiced automatically.*

Substitution and Cancellation

Substitution of participants may be made at any time. If you intend to do this, please advise MIRCE Akademy as soon as possible. Cancellation of a booking must be received in writing by the organiser at least 15 days before the commencement of the Summer School. Such cancellations will be subject to an administration fee of £50 + VAT. MIRCE Akademy regrets that no refunds or credits will be made after the deadline unless the Summer School is cancelled by the organiser.

The organisers reserve the right to alter the schedule or cancel the Summer School at its discretion. All places offered are subject to availability.

I wish to attend the Summer School and agree to the Terms and Conditions above.

Signature ....

Date ....

CALENDAR OF EVENTS 2001

Grand Prix Weekends

Enjoy the drama of F1 from the home of the most successful British F1 Grand Prix Driver

June 30 - July 1
July 14-15
July 28-29
September 1-2
September 15-16
October 13-14

Specialist Events

May 14-16	System Functionability
May 16-18	Spares Modelling
June 4-6	Disaster Management
June 4-6	Data Mining Tools, Techniques & Applications
June 25-27	System Failures
July 22-28	Summer School "Systems you can depend on - Science and Tools for the 21st Century"
December 4-6	11th International MIRCE Symposium in System Operational Science

Reliability Education Series

September 3,4,5	Reliability Engineering
October 8,9,10	Reliability Management
November 5,6,7	Reliability Analysis

Maintainability Education Series

September 10,11,12	Maintainability Engineering
October 16,17,18	Maintainability Management
November 12,13,14	Maintainability Analysis

Supportability Education Series

September 18,19,20	Supportability Engineering
October 22,23,24	Supportability Management
November 19,20,21	Supportability Analysis

Logistics Education Series

September 24,25,26	Logistics Engineering
October 29,30,31	Logistics Management
November 26,27,28	Logistics Analysis

For further details of any of the above events please contact MIRCE Akademy.
Tel: 01395 233856 Fax: 01395 233899 E-mail: mirce@mirce.com