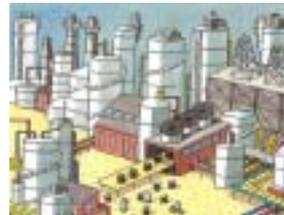


22<sup>nd</sup> MIRCE International Symposium  
5 – 7 December 2012, Woodbury Park, Exeter, UK  
**Applied Mirce Mechanics**  
*- The Key for a Science-Based System Effectiveness -*



MIRCE Academy



"System Effectiveness is a quantitative measure of the ability of a system to deliver a target functionality performance through time.

For example, how many days per year, the train operator is able to despatch its train from the platform at 6.23 am, when 1000 fare paying passengers expect to leave the station? Clearly, in the case of any delays the travelling public is not interested in whose problem it could be, designers, manufacturers, suppliers, operators, maintainers or somebody else's. They are only interested in leaving at 6.23 am in order to arrive at a chosen destination at 7.30 am. The situation is exactly the same for the health, power, education, defence, food and all other providers, users and customers.

Consequently, system effectiveness is the key factor of business competitiveness, as it is the main profit driver.

Thus, I wish to invite you to this, well-established and respected, International Event to gain a bit of the science-based knowledge, generated at the Academy and named Mirce Mechanics, which is essential for planning, delivering and maintaining a system effectiveness (read continuous delivery of target performance), with least investment in resources."

Dr Jezdimir Knezevic  
President & Founder

, Wednesday 5<sup>th</sup> December 2012

0830- 0915	<b>Registration and welcome coffee, Woodbury Park Hotel, Colin Chapman Room</b>
0900 - 0905	<b>Welcome by Dr Jezdimir Knezevic, Founder &amp; President, Mirce Akademy, UK</b>
0905 - 1030	<b><i>Science-Based Approach to System Effectiveness</i> by Dr Knezevic</b> Brief overview of Philosophy, Science, Mathematics, Computation, Technology and Applications of Mirce Mechanics to the engineering and managing System Effectiveness
1030-1100	<b>Morning Coffee</b>
1100-1200	<b><i>Practical Availability Predictions.</i></b> <b>Chris Rijdsdijk, Hogeschool Zeeland/ International Maintenance Academy, Holland</b> Availability is an important driver that justifies the existence of technical systems. Performance indicators on availability are increasingly monitored or included in contracts. Hence measuring and predicting availability becomes important. Although any introductory textbook on reliability engineering covers availability, its assessment in practice seems more problematic than one may expect at first glance. This presentation attempts to clarify why availability is not immediately observable. As a result, conflicts about ambiguous availability indicators are hard to resolve. Introducing a variety of inherent, operational or achieved availability definitions does not eliminate the root cause of the ambiguity in availability. Some case studies that apply time series analysis on (some drivers of) an item's performance are presented as a prosperous alternative..
1200-1300	<b><i>Impact of Simplified Technical English of System Effectiveness</i></b> <b>Orlando Chiarello, HFMA Secondo Mona, Product Support Manager, Secondo Mona S.p.A and Chair of the ASD STE Maintenance Group,</b>
1300 -1400	<b>Lunch</b>
1400 -1730	<b><i>Transition from ILS Management to Supportability Engineering Function</i></b> <b>Dr Jezdimir Knezevic, Life member of the Society of Logistics Engineers, SOLE.</b> Integrated Logistics Support, ILS, has been introduced into defence procurement process in mid 1980s with great expectation. Significant reduction of Life Cycle Cost, massive improvement of Reliability and overall Operational Effectiveness have been promised by Defence Contractors and rightly expected by the Department of Defence. To enable that to happen Military Standards like 1388 have been launched and thousands of people have mastered the art of performing Logistics Support Analysis, LSA, and populating Logistics Support Data Records, LSAR. Enthusiasm for ILS lasted a good 10 years; during which everybody was working so hard to implement it, that hardly anybody checked what it was producing. Then, when the "harvesting" time came, very little has been delivered. Consequently, the Integrated Logistics Support methods and tools were re-named into Supportability Engineering methods and tools and the same people continued doing the same jobs, but now, under the new name. Today, the number of those people has been drastically reduced due to retirements or lack of jobs. However, the demands for the improvements in system effectiveness and reduction of the life cycle cost are higher then ever. Sadly, today logistics profession have neither logistics professionals, nor accurate and reliable methods to offer to Defence Community to more efficiently support the front line. Hence, this mile stone presentation has been designed to expose the remaining ILS professional to the principles, methods and tools that have been developed over the last two decades under my leadership at the MIRCE Akademy, to finally deliver logistics dreams defined and written down by logistics professionals in: MIL STND 1388 1-A The knowledge presented in this workshop is based on the scientific principles and as such does not belong to the Defence Industry only; have an expiry date and national boundaries. Supportability Engineering, based on principles of Mirce Mechanics, is the foundation of logistics profession that has been always in demand by the front line, but never had roots in the design offices, engineering colleges or university curriculum. <b>Afternoon Tea Break 1515-1545.</b>
18.15-19.30	<b>MIRCE Akademy Annual Lecture</b> <b>"Speed and Accuracy Trade-off: a Fundamental of Human Behaviour"</b> <b>Professor Chris Harris, University of Plymouth Unite Kingdom</b>

**Thursday 6<sup>th</sup> December 2012**

0830- 0900	<b>Registration and welcome coffee, Woodbury Park Hotel, Colin Chapman Room</b>
0900 - 1000	<p><i>Asset Management in Renewables – the Manifestation of Functionability Information’.</i>  <b>Mark Willis</b>, HFMA, Senior Business Manager, LSC Group, Lichfield, UK                  This paper presents challenges that are facing the Energy Supply market to develop through life data visualisation technology to assist them in the very complex process of the Asset Management of Onshore and Offshore Wind Farms (<a href="http://www.lsc.co.uk">www.lsc.co.uk</a>)</p>
1000-10.30	<b>Morning Coffee</b>
1030-1130	<p><i>Maintenance Tools for Delivering Availability</i>  <b>Wing Commander Chris J. Hockley</b> OBE, CEng, MRAS, RAF(Rtd), HFMA                  EPSRC Centre for Innovative Manufacturing in Through-Life Engineering Services, Cranfield University, Shrivenham, UK</p>
1130-1245	<p><i>Modelling System Effectiveness</i>  <b>Dr John Crocker, Science Fellow of the MIRCE Akademy</b>                  With over 30 years of “hands-on experience” of modelling behaviour of huge fleets of aircraft and their engines, related to world leading producers and operators, the author will share his knowledge related to the development and understanding of how failure mechanisms and component design influence the time to failure distribution parameters and using this information to improve maintenance and support policies with a view to maximising a system effectiveness and minimising in-service costs.</p>
1300 -1400	<b>Lunch</b>
1400-1730	<p><i>Master Class: Failure and Reliability Properties of Polymers</i>  <b>Garry Howe, Independent Polymer Technology</b>, Telford, TF7 4NY, Shropshire UK                  Polymer materials, which are commonly used in thousands of products as plastics, elastomers, coatings and adhesives, are viscoelastic in nature. Their properties are highly time, temperature and stress dependents The significance of this is often overlooked at the design stage. As a simple demonstration of the significance of this, the long term fatigue strength of polycarbonate is only 14% of the short term tensile strength quoted on manufacturers’ data sheets. Hence, this Master Class is design to provide general understanding of polymers as physical materials, their properties and failure mechanisms, their reliability data and existing technology that deliver their desirable durability characteristics and properties.                  The majority of plastic component failures occur in the mid to long term. Even in normally tough, ductile plastic materials failures are invariable brittle in nature and result in a short service life. Such brittle failures are most commonly caused by: incorrect material selection, chemical &amp; environmental interactions, response to long term loads, processing errors, inappropriate design. (<a href="http://www.ipolytech.com">www.ipolytech.com</a>)  <b>Afternoon Tea Break from 1530 to 1600</b></p>
1900 - 1930	<b>Get Together Sherry Reception at Woodbury Park Golf Club Terrace</b>
1930-2130	<b>Symposium Dinner</b>
	<b>MIRCE Akademy Members Christmas Dinner</b>
2130-2200	<b>MIRCE Akademy Fellowship Award</b>
2200-2230	<div style="display: flex; align-items: center;">  <div style="border: 1px solid black; padding: 5px;"> <p>Formula 1 Reliability &amp; Effectiveness Centre, of the MIRCE Akademy                      Announcement and Award of the</p> <ul style="list-style-type: none"> <li>• <b>2012 Formula 1 Driver Reliability Champion</b></li> <li>• <b>2012 Formula 1 Team Reliability Champion</b></li> </ul> <p>In accordance to the calculations based on the Mirce Mechanics</p> </div> </div>

**Friday 7<sup>th</sup> December 2012**

<b>0830– 0900</b>	<i>Registration and welcome coffee Woodbury Park Hotel, Colin Chapman Room</i>
<b>0900 – 10.00</b>	<i>Design of Weapon System Availability Based on the Optimization of National and Central Stock Levels by using a Monte Carlo Analysis Model Antonello Marras, NSPA, NATO Support Agency, Capellen, Luxembourg</i>
<b>1000– 1300</b>	<i>Professional Education for Functionability Engineers, Managers and Analysts Dr J. Knezevic, MIRCE Akademy, Exeter, UK</i> Over the last 50 years, Aerospace and Defence Industries in the Western World have dealt with tens of thousands professionals whose job titles contained the following skills: reliability, durability, maintainability, supportability, testability, life cycle costing, logistics support analysis, spare provisioning, maintenance planning etc. Although the job descriptions were very clear, the educational paths to those jobs where anything but clear. This created reality where the academic courses and books where written by mathematicians, who did not understand the physical realities of the jobs and job holders who understood the job requirements very well but did not understand the mathematics. Management and Business schools came into picture lately, with their generic management doctrines which are neither related neither to the existing mathematics nor to the system engineering process. Sadly, this situation stayed unchanged for decades where the existing cracks were filled with a large number of training courses which assisted both parties, producers and users, to meet each other contractual requirements, but have done very little to build the science based foundation for these irreplaceable, but ever diminishing professionals. Since 1982, at Exeter University and the MIRCE Akademy, I have been aware of this situation and tried very hard to improve it, with considerable support from individuals in industrial, academic and government organisations all over the world. The culmination of this process was the creation of <b>Mirce Mechanics</b> that is scientific and mathematical foundation of our profession, which puts us on par with mechanical, electrical, aerospace and other engineers with whom we now speak the same language. In this presentation the essentials of the <b>Graduate, Master and Doctoral Diploma Programmes</b> , offered by the MIRCE Akademy, will be presented and discussed. <b>Morning Coffee will be served between 10.300 and 11.00</b>
<b>1300 – 1345</b>	<b>Lunch</b>
<b>1345 -1400</b>	<i>Group Photo and Departure</i>

All prices are in GB Pounds	Before 25th October 2012			After 25th October 2013		
	Price	VAT	Total	Price	VAT	Total
<b>Service</b>						
<b>Participant for 3 Days</b>	595.00	119.00	<b>714.00</b>	695.00	139.00	<b>834.00</b>
<b>Participant per Day</b>	225.00	45.00	<b>270.00</b>	250.00	50.00	<b>300.00</b>
<b>Presenter on the day of presentation</b>	<b>Free</b>			<b>Free</b>		
<b>Presenter for 3 Days</b>	325.00	65.00	<b>390.00</b>	395.00	79.00	<b>474.00</b>
<b>Retired participants for 3 Days</b>	195.00	39.00	<b>234.00</b>	195.00	39.00	<b>234.00</b>
<b>University students for 3 Day</b>	395.00	79.00	<b>474.00</b>	495.00	99.00	<b>594.00</b>
<b>Congress Proceedings on CD</b>	175.00	35.00	<b>210.00</b>	225.00	45.00	<b>270.00</b>
<b>MIRCE Akademy Members</b>	545.00	109.00	<b>654.00</b>	645.00	129.00	<b>774.00</b>
<b>MIRCE Akademy Fellows</b>	525.00	105.00	<b>630.00</b>	625.00	125.00	<b>750.00</b>
<b>MIRCE Akademy Students</b>	295.00	59.00	<b>354.00</b>	395.00	79.00	<b>474.00</b>
<b>Partners Programme for 3 Days</b>	145.00	29.00	<b>174.00</b>	195.00	39.00	<b>234.00</b>
<b>Symposium Dinner only</b>	65.00	13.00	<b>78.00</b>	85.00	17.00	<b>102.00</b>
<b>B&amp;B at Woodbury Park Hotel - single</b>	Room are		75.00	Room are		75.00
<b>B&amp;B at Woodbury Park Hotel - double</b>	guaranteed		95.00	not guaranteed		95.00
<b>Exhibitors - Gold Package</b>	2000.00	400.00	<b>2400.00</b>	2500.00	500.00	<b>3000.00</b>
<b>Exhibitors - Silver Package</b>	1500.00	300.00	<b>1800.00</b>	2500.00	500.00	<b>3000.00</b>
<b>Exhibitors - Bronze Package</b>	1000.00	200.00	<b>1200.00</b>	1500.00	300.00	<b>1800.00</b>

## About the Venue

Woodbury Park is a magnificent 500 acre complex set among rolling hills above the South West English coastline, only a few miles from Exeter.

Communication between Exeter and other parts of the United Kingdom are excellent.

**By road**, the M5 motorway links Exeter to London, the Midlands, Scotland and Wales. Regular rapid coaches run services to and from London and Heathrow Airport.

**By rail**, a regular fast service is available to and from Exeter (St David's Station) and London (Paddington Station).

**By air**, Exeter Airport offers regular flights to many British and Continental destinations and is situated near to Woodbury Park.

Travel between Exeter and Woodbury normally requires a car or taxi.

Among the outstanding leisure facilities at Woodbury Park are two golf courses including the magnificent Oaks Championship course, tennis courts, a swimming pool, spa, sauna and fully equipped gymnasium and well appointed lounge areas and bars.

Woodbury Park, Woodbury, Exeter, EX5 1JJ, United Kingdom

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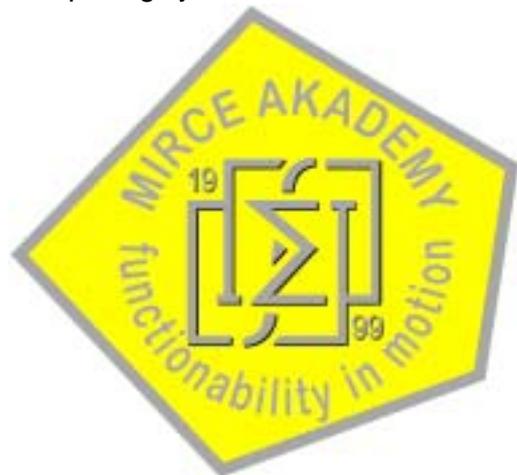
[www.woodburypark.co.uk](http://www.woodburypark.co.uk)

## About the MIRCE Akademy

Mirce Akademy is an independent research and educational institution devoted to the enhancement and applications of Mirce Mechanics – scientific theory of the motion of functionality phenomena through the life of systems.

The knowledge and methods of Mirce Mechanics have benefited designers, manufacturers, constructors, operators, service-providers, regulators and others in the aerospace, automotive, communication, construction, defence, transport, service, utility sectors and other areas of business and government.

Benefits of scientific based knowledge are experienced through significant increase in system reliability and availability, while drastically reducing costs of making, running and disposing systems.



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Web site: [www.mirceakademy.com](http://www.mirceakademy.com)



Woodbury Park Hotel & Golf Club, Exeter, EX5 1JJ, UK – home of the MIRCE Akademy

**22<sup>nd</sup> MIRCE International Symposium**  
**Applied Mirce Mechanics: 5 -7 December 2012**

**Registration Form**

Email: [quest@mirceakademy.com](mailto:quest@mirceakademy.com)

Phone: +44 (0) 1395 233 856

Mail: MIRCE Akademy, Woodbury Park, Exeter, EX5 1JJ, United Kingdom

Web site: [www.mirceakademy.com](http://www.mirceakademy.com)

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**Please select appropriate level of service and corresponding fee.**

**Group discounts are available please contact us.**

***The Symposium Fees includes:***

- Attendance
- Congress Papers and Supporting Materials
- Lunches and Light Refreshments
- MIRCE Akademy Annual Lecture
- Christmas Dinner on 6<sup>th</sup> December

**Value Added Tax (VAT)**

Unless special exemption exists, under UK Customs and Excise regulations delegates from all countries are required to pay UK VAT @ 20 % on all courses taking place in the UK. Non-UK delegates may be able to recover VAT incurred via the relevant tax authority in the country of origin of the delegate.

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**Terms and Conditions**

Substitution of participants may be made at any time. If you intend to do this, please advise the MIRCE Science ('the organiser') as soon as possible. Cancellation of a booking must be received in writing by the organiser at least 14 days before the commencement of the Symposium. MIRCE Science regrets that no refunds or credits will be made after the deadline unless the organiser cancels the Event.

The organiser reserves the right to alter the programme or cancel the Summer School at its discretion. All places offered are subject to availability.