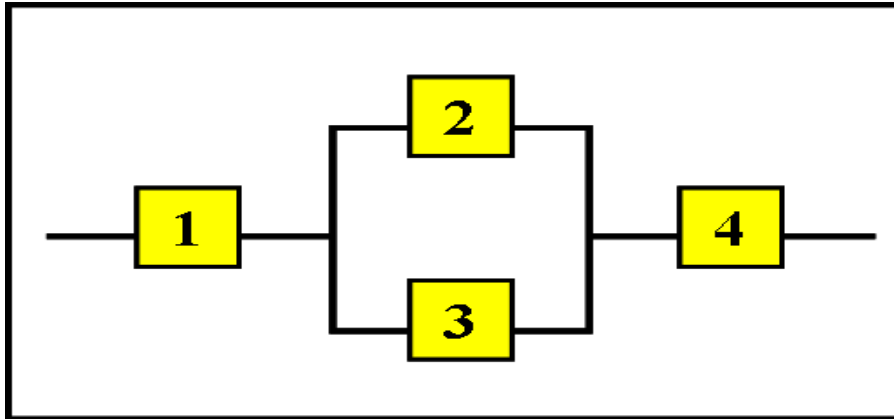


27th MIRCE International Symposium
12 – 14 December 2017, Woodbury Park, Exeter, UK
Reliability Beyond First Failure



$$R_s(t) = P(TTF_s > t) = R_1(t) \times [1 - (1 - R_2(t))(1 - R_3(t))] \times R_4(t)$$

The Reliability Function, $R_s(t)$, defines the reliability of the system presented in the figure above as a function of the reliability of its consisting components, as declared by their manufacturers. The above mathematical expression is valid under the following physical assumptions:

- Components are mutually independent
- No maintenance activities
- Continuous operation of a system
- First observable failure is a system failure
- Time counts from new
- No environmental impacts on system reliability
- No Human impacts on system reliability

The occurrence of the first failure brings the following physical reality into the equation for system reliability:

- Dependencies between components
- Initiates maintenance activities
- Interrupts continuous operation of a system
- Component's failure could precede system's failure
- New time for the failed component
- Environmental impacts on system reliability
- Human impacts on system reliability

The purpose of the Symposium is to show how the occurrence of the first failure and all others generate physically observable changes in the life of a system, which are impossible to embrace by the above shown approach to Reliability. The limitations highlighted above, and many others, are totally **eliminated** by the creation of the new mathematics contained within MIRCE Science. **All of you who have realised this problem and are interested in its solution please join us.**

The Symposium Programme at Glance

>>>>> Tuesday 12th December 2017 <<<<<

0830-0900 Registration and welcome coffee, Colin Chapman, Room, Woodbury Park Hotel,

0900-1300 **Component Failure** (Morning coffee 1030-11.00)

- Impact on Series Configuration
- Impact on Parallel Configuration

1300-1400 **Lunch Break**

System Failure (Tea break 15.30-16.00)

- Troubleshooting
- Primary damage
- Replacement
- Spare available
- Diagnostics
- Secondary Damage
- Repair
- Cannibalisation

18.00-19.00

**MIRCE Akademy Annual Lecture
Tribute to Professor Arie Dubi GFMA (1945-2015)**

Presented by Dr J. Knezevic, MIRCE Akademy, Exeter

1910-1930

Get Together Sherry Reception at Woodbury Park Golf Hotel

1930-22-30

Symposium Dinner & MIRCE Akademy Members Christmas Dinner



Functionability 1 - Research & Education Centre, of the MIRCE Akademy

MIRCE Science based Announcement and Award of the

- 2017 Formula 1 Driver Functionability Champion
- 2017 Formula 1 Team Functionability Champion

>>>>> Wednesday 13th December 2017 <<<<<

0900-1300

Component Functionability Measures (Morning coffee 1030-11.00)

- Negative Functionability Action(s)
- Negative Functionability Event
- Positive Functionability Action(s)
- Positive Functionability Event

1300-1400

Lunch Break

1400-1700

System Functionability measures (Tea break 15.30-16.00)

- Positive Functionability Work/Cost
- Negative Functionability Work/Cost

>>>>> Thursday 14th December 2017 <<<<<

0900-1030

Monte Carlo Simulation: Concept, Principles

The Monte Carlo method is an application of the laws of probability and statistics to physically observed phenomena. The essence of the method is to use various distributions of random numbers, each reflecting a particular process in a sequence of process, to calculate samples that approximate the real process history.

1030-1100

Morning Coffee

1100-13.00

Principles of the Monte Carlo Methods

- Random Numbers
- Statistical Sampling
- Probability Distributions
- Statistical Error and the Number of Histories

1300-1400

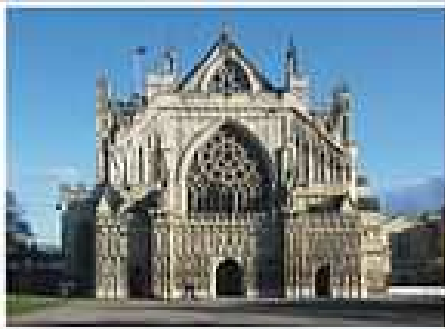
Lunch Break

1400-1730

Application of Monte Carlo Method to System Functionability Performance

- Component Maintenance Policies
- System Support Policy
- System Functionability Measure
- System Economics (Revenue, Cost and Profit)
- System Maintenance Policy
- System Operational Scenarios
- System Operational Effectiveness

A few short Case Studies will be presented to illustrate the whole concept presented and methodologies used to apply the theoretical principles of MIRCE Science to the successful prediction of Functionability Performance of Functionable System types.



Exeter is the most southwesterly Roman fortified settlement in Britain. Exeter Cathedral was founded in the early 12th century and has several notable features, including an early set of misericord, an astronomical clock and the longest uninterrupted vaulted ceiling in England. Today, Exeter is identified as one of the top ten most profitable locations for a business to be based or to gain University education.

All prices are in GB Pounds Service	12 - 13 December			14th December		
	Price	VAT	Total	Price	VAT	Total
Participant	395.00	79.00	474.00	295.00	59.00	354.00
Presenter	245.00	49.00	294.00	Not Applicable		
Retired participants	275.00	55.00	330.00	275.00	55.00	330.00
University students	255.00	51.00	306.00	255.00	51.00	306.00
Congress Proceedings on CD	150.00	30.00	180.00	Not Applicable		
MIRCE Akademy Members	350.00	70.00	420.00	275.00	55.00	330.00
MIRCE Akademy Fellows	375.00	75.00	450.00	285.00	57.00	342.00
MIRCE Akademy Students	275.00	55.00	330.00	225.00	45.00	270.00
Symposium Dinner only	50.00	10.00	60.00	Not Applicable		
B&B at Woodbury Park Hotel						
Single			75.00			75.00
Double			95.00			95.00



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.

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□ 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 Science – theory for predicting functionality performance of functionable system types.

The knowledge and methods of MIRCE Science 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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Woodbury Park Hotel & Golf Club, Exeter, EX5 1JJ, UK – home of the MIRCE Akademy

27th MIRCE International Symposium: 13 – 15 December 2017

Reliability Beyond First Failure

Registration Form

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Phone: +44 (0) 1395 233 856

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

Web site: 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
- Symposium Material and Supporting Materials
- Lunches and Light Refreshments
- MIRCE Akademy Annual Lecture
- Christmas Dinner on 13th December
- Free Parking

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.