



Adding value in inter-disciplinary and multi-cultural environments

The International Council on Systems Engineering (INCOSE) is an international professional society for systems engineers with the mission to promote the definition, understanding, and practice of world-class systems engineering in industry, academia, and government. INCOSE was formed in 1990 to develop the interdisciplinary approach as a means to design and develop successful systems. The first symposium was held in 1991. Since then, INCOSE has grown dramatically. Over 6,000 members, 50 chartered chapters worldwide, and more than 50 Corporate Advisory Board members now contribute to INCOSE. Today INCOSE members represent over 30 countries. And, with newly forming chapters the number continues to grow. Region 3 of INCOSE, comprising Europe, Israel and South Africa, comprises about 25% of the total membership, and hosts this Conference.

AFIS (France)
FINSE (Finland)
GfSE (Germany)
INCOSE NL (Netherlands)
INCOSE UK (United Kingdom)
Israel Chapter
NORSEC (Norway)
South African chapter
Swedish chapter
Turkish chapter



Welcome



Star Attractions

Welcome Message

On behalf of the UK Chapter of INCOSE, and of the Planning Committee of the European Systems Engineering Conference (EuSEC) for 2006, I invite you to join us for Europe's premier Systems Engineering Event in Edinburgh. This year's theme, "Adding value in inter-disciplinary and multi-cultural environments", was selected to emphasize that modern Systems Engineering is not restricted to single-enterprise, single-nation projects. In keeping with the Conference Theme, the Planning Committee, composed of representatives from all around Europe, plus Israel and South Africa, have collaborated to bring you a truly multinational Technical Programme.



This year the Conference is being held in Edinburgh, the hub of Scotland's thriving high technology industry as well as a home to major Universities, and a tourist destination known for its internationally-renowned architectural heritage and culture. We invite you to come together to enjoy the technical programme, to relax and to spend time talking to one another; taking advantage of the opportunity to learn from seasoned practitioners, tell your stories, exchange ideas, hold lively discussions, and, best of all, get to know your international engineering colleagues and make them your friends.

Through our offering of 9 Keynote and Invited Speakers, 24 Technical Papers, 6 Tutorials, 2 thought-provoking Panels, a Toolvendor Challenge, and exhibitors from the academic, industrial, consulting services and vendor communities, an enormous array of systems engineering information awaits you. Evening receptions and the symposium banquet with speakers and entertainment round out the menu of activities. Come join us!

Paul Davies, General Chair of the Host Committee

Venue

The venue for the Conference is the excellent Edinburgh Conference Centre at Heriot-Watt University (shown left.). The showpiece facilities include the 600-seat raked Main Auditorium (James Watt Centre I, shown right), and the adjacent spacious James Watt Centre II, where our exhibitors will be housed and where refreshment breaks will be taken. A 200-seat University lecture hall in close proximity will be used for a 2nd parallel Conference stream, and large conference rooms within James Watt Centre I will house two tutorials per day.



The Conference centre is within 15 minutes of the M8 motorway, Edinburgh International Airport and Curriehill station; the centre of Edinburgh itself is only half an hour away.

See our website www.incose.org/eusec2006 for further details on travel and facilities.

Sponsors and Exhibitors

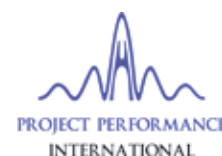
We gratefully acknowledge the support of our sponsors.

At Gold Level: The Systems Engineering Innovation Centre, BAE Systems and the East Midlands Development Agency, as a joint partnership

At Silver Level: Telelogic, UGS

Others: The Hood Group, Project Performance International

Exhibitors at the Conference include: BAE Systems / SEIC / EMDA in conjunction with Heriot-Watt University, Telelogic, UGS, Artisan, Project Performance International, Your company?



European Systems Engineering
Conference 2006
18-20 September 2006
Edinburgh Conference Centre,
Heriot-Watt University
Edinburgh, Scotland (UK)



Invited Speakers

Nine sessions are reserved for speakers selected by the organising committee. The speakers represent a wide range of application areas, some outside traditional INCOSE domains. Four of these are INCOSE Fellows or equivalent status, who will address topics on the edges of current systems engineering, with the potential to influence the way we work in the future. We are keeping some surprises up our sleeves, but those confirmed include:

- Hillary Sillitto, UK MoD Head of Integration Authority, and current President of INCOSE UK Chapter (Scotland)
"Systems engineering and Social engineering for Network Enabled Capability"
- Simon Harris, Strathclyde University International Business Unit (Scotland)
"Mixing Cultures in Systems Engineering Projects: Challenges and Opportunities"

Technical Track Speakers and Paper Titles

Technical Track Speakers and Paper Titles confirmed at time of publication include:

Bob Dale, MBDA (UK) – "Managing Technical Uncertainty"

Niels Braspenning, Eindhoven University of Technology (NL) –
"Model-based support for integration and testing of an industrial system"

Torkild Eriksen, Norwegian Defence Research Establishment –
"Survey of the use of systems architecting in the development of complex technical systems"

Colin Brain, SE Validation – "The Wrong kind of Systems Engineering"

Ileri Ibarra Alvarado, University of Sussex (UK) –
"System Safety Analysis: SysML and UML in the Automotive Context"

George Wallace, Lockheed Martin (UK) –
"Marketing + Sales + Systems Engineering = Business Development?"

Cecilia Haskins, NTNU Trondheim (Norway) –
"Multi-Disciplinary Approach to Examine Eco-Industrial Parks"

James Martin, The Aerospace Corporation (US) –
"The Seven Samurai of Systems Engineering..."; "Systems are Imaginary – Some thoughts on the nature of Systems Thinking"; "Meeting the Challenge of Knowledge – Creating Systems"

Miki Hegedus, Delft University of Technology (NL) – "Systems Engineering within the Formula Student Project at Delft University of Technology"

Michael Emes, University College London (UK) – "Strategic Multi-Stakeholder Trade Studies"

Hannes de Ridder (NL) – "Systems Engineering for Adding Value in the Built Environment"

- Sarah Sheard, Third Millennium Systems (USA)
"Complex Systems Science and its Effects on Systems Engineering"
- Philip M'Pherson (England)
"The Value of Systems Engineering: A Life-Cycle's Appreciation"
- Alain Faisandier, MAP Système (France)
"Considering Organisations and Enterprises as Systems"
- Tom Gilb (Norway)
"How to Procure Services on a 'No Cure, No Pay' Basis"

Tutorials

There are 6 full-day tutorials to choose from, all from internationally renowned speakers:

- T1** Matthew Hause and Francis Thom (UK) - *SysML and UML for Systems Engineers*
- T2** Mark Powell (USA) - *Dealing with Uncertainty in Systems Engineering*
- T3** Sarah Sheard (USA) - *SE in a chaotic, complex environment*
- T4** W.R. Ansorge (Germany) - *Systems Engineering, Increasing the Efficiency of Research Infrastructure Projects*
- T5** James Martin (USA) - *Architectural Frameworks and Modelling*
- T6** Niels Malotau (NL) - *Successful Projects are not really difficult...*

Toolvendor Challenge

This challenge, sent to participating toolvendors a couple of days in advance of the Conference, will describe a fictional company that is developing a system to which all the conference attendees can relate. A 'high level' description of this system will be supplied. Each vendor is expected to use SE techniques and their own tool to work out a solution to the problem. There is time allotted on the second day of the Conference for presentations from each vendor (of the solution, not marketing!) Vendors are encouraged to provide in-depth explanations of their solution at their stand during the Conference, allowing participants to compare "apples with apples."

Academic Forum

Professor Phillip John of Cranfield University will chair the Academic Forum. The forum will be held on Thursday and will discuss the role of Academia in developing and defining modern Systems Engineering (the Research focus) and in facilitating its understanding and adoption (the Education focus). The aim is to stimulate a debate on the involvement of Academia in the forefront of Systems Engineering.

Panel Debates

Two panel debates are included in the programme; both have multicultural themes. One will look at different approaches to University teaching of SE; the other will look at ways of getting your (non-US) papers published at the INCOSE International Symposium.

Technical Programme at a Glance

European Systems Engineering
Conference 2006
18-20 September 2006
Edinburgh Conference Centre,
Heriot-Watt University
Edinburgh, Scotland (UK)



Track 1 (Main Auditorium, JW centre I)

Monday 18th September

9.00 -	9.30	Opening session and President's Address by Paul Robitaille (Plenary)
9.30 -	9.45	Introduction to Toolvendor Challenge
9.45 -	10.30	Keynote Speaker (Plenary) – Hillary Sillitto, Head of UK Ministry of Defence Integration Authority
10.30 -	11.00	Coffee Break in Exhibits Hall
11.00 -	11:45	Azzedine Yahiaoui (Eindhoven University of Technology): A Systems Engineering Environment for Integrated Building Design
11:45 -	12.30	Hennes de Ridder, Ruben Vrijhof (Delft University of Technology): Systems Engineering for Adding Value in the Built Environment
12.30 -	14.00	Buffet Lunch in Exhibits Hall <i>During lunchtime: INCOSE Technical Board Open House in Bruce Room</i>
14.00 -	14:45	Wolfgang Ansoerge (RAMS-Con Management Consultants): Systems Engineering, Increasing the Efficiency of Research Infrastructure Projects
14:45 -	15:30	Miki Hegedus, Robbert J. Hamann (Delft University of Technology): Systems Engineering within the Formula Student Project at Delft University of Technology
15.30 -	16.00	Coffee Break in Exhibits Hall
16.00 -	17.30	Education Controversy Panel Debate – Can Systems Engineering be taught effectively at Undergraduate Level? Chair: Sue Goodlass (BAE Systems)
17.30 -	19.00	Icebreaker Reception in Exhibits Hall
19.00 -	on	Conference Banquet in Conference Centre

Tuesday 19th September

9.00 -	9.45	Invited Speaker: Simon Harris - <i>Mixing Cultures in Systems Engineering Projects: Challenges and Opportunities</i>
9.45 -	10.30	Invited Speaker: Alain Faisandier - <i>Considering Organisations and Enterprises as Systems</i>
10.30 -	11.00	Coffee Break in Exhibits Hall
11.00 -	11.45	Siebert Benade (University of Pretoria): Systems Engineering and Related Disciplines
11:45 -	12:30	Michael Emes (University College London): Strategic Multi-Stakeholder Trade Studies
12.30 -	14.00	Buffet Lunch in Exhibits Hall
14.00 -	14:45	Tom Gilb: Systems Architecture: A View Based on Multiple Impacts
14:45 -	15:30	Torkild Eriksen (Norwegian Defence Research Establishment): Survey of the Use of Systems Architecting in the Development of Complex Technical Systems - Exemplified by the Autonomous Underwater Vehicle Hugin
15.30 -	16.00	Coffee Break in Exhibits Hall
16.00 -	17.30	Toolvendor Challenge Contestants Moderated Presentations and Debate
17.30 -	19.00	Reception for invited guests
19.00 -	on	Special Event with Dinner

Wednesday 20th September

9.00 -	9.45	Invited Speaker: Sarah Sheard - <i>Complex Systems Science and its Effects on Systems Engineering</i>
9.45 -	10.30	Invited Speaker: Moti Frank - <i>Knowledge, abilities, cognitive characteristics and behavioral competences of engineers with high capacity for engineering systems thinking (CEST)</i>
10.30 -	11.00	Coffee Break in Exhibits Hall
11.00 -	11:45	Colin Brain: The Wrong Kind of System Engineering
11:45 -	12:30	Robert Dale (MBDA): Managing Technical Uncertainty
12.30 -	14.00	Buffet Lunch in Exhibits Hall
14.00 -	14:45	Bram de Landtsheer et al. (INCOSE Netherlands): Implementing Systems Engineering - A Step-By-Step Guide
14:45 -	15:30	Harold W. Lawson (Lawson Konsult AB): A Strategy for the Implementation of ISO 9001 and ISO 14001 Utilizing ISO/IEC 15288
15.30 -	16.00	Coffee Break in Exhibits Hall
16.00 -	17.00	Closing Plenary Vision 2020, the Globalisation of Systems Engineering - Ralf Hartmann, EADS Systems Engineering Handbook v3 - Terje Fossnes Best Paper Awards plus special presentations - Terje Fossnes

Andreas Peukert, Ulrich Walter (Technische Universität München): Integrating System Views Emerging from Different (Engineering) Cultures
George Wallace: Marketing + Sales + Systems Engineering = Business Development?

John Holt (Brass Bullet), Dr Paul McNeill (BSI): The role of systems engineering in global standardisation
James Martin (The Aerospace Corporation): Meeting the Challenge of Knowledge-Creating Systems

"Fireside Chat" Panel Debate – How to prepare papers for acceptance at INCOSE International Symposium. Chair: Duncan Kemp (UK MoD)

Invited Speaker: Tom Gilb - *How to Procure Services on a 'No Cure, No Pay' Basis*
Invited Speaker: Philip M'Pherson - *The Meaning and Value of Systems Engineering: A Life-cycle Appreciation*

James Martin (The Aerospace Corporation): Systems are Imaginary - Systems are Not Real: Some Thoughts on the Nature of Systems Thinking
Avigdor Zonnenshain, Sharon Shoshany Tavory (RAFAEL): Who is Afraid of Reviews?
Oleksiy Mazhelis, Mirja Pulkkinen (University of Jyväskylä), Osmo Vikman (Nokia Group): Network-Centricity in Software Product Development
Markus Hoppe (HOOD Group): A Generic Requirements Management and Engineering Software Selection Process
Toolvendor Challenge Contestants
Moderated Presentations and Debate
UK Chapter AGM

Invited Speaker: Jan Verbeek - *Removing the barriers for Design for Production; how to make it happen!*
Invited Speaker: Willie Theron - *The Pebble Bed Modular Reactor and the usage of Systems Engineering to Establish New Standards for the Nuclear Revival* (sponsored by UGS)

Matthew Hause, Alan Moore (ARTISAN Software Tools): The Systems Modelling Language
Ileri Ibarra Alvarado, Richard K. Stobart, Rudi Lutz (University of Sussex) System Safety Analysis: SysML and UML in the Automotive Context.

Andreas Vollerthun, Marcelo de la Cruz (3D Systems Engineering GmbH), Roberto Borsari (Tetra Pak Carton Ambient S.p.A.): 12 Ways to Use a Functional Model
Niels Braspenning, J.M. van de Mortel-Fronczak, J.E. Rooda (Eindhoven University of Technology), D. Kostic (Embedded Systems Institute): Model-Based Support for Integration and Testing of an Industrial System

T1
UML and SysML for Systems Engineers
Matt Hause and Francis Thom, Artisan Software

T2
Dealing with Uncertainty in Systems Engineering
Mark Powell, Attwater Consulting / Stevens Institute

T3
What You Need to Know About Chaos, Complexity, and Complex Adaptive Systems to Do Systems Engineering Well in the 21st Century
Sarah Sheard, Third Millennium Systems

T4
Systems Engineering, Increasing the Efficiency of Research Infrastructure Projects
W.R. Ansoorge, RAMS-CON Management Consultants

T5
Architecture Frameworks & Modelling
James Martin, The Aerospace Corporation

T6
Successful Projects are not really difficult
Delivering the best possible project results in the shortest possible time
Niels Malotaux, N R Malotaux - Consultancy

Additional Info



Registration

Additional Information

The Conference will take place at the Edinburgh Conference Centre, Heriot-Watt University, Edinburgh, Scotland, from 18th-20th September 2006. It is necessary to register and pay in advance. To register please complete the booking form on the next 2 pages and forward it, together with your remittance or a company purchase order, to CTA Events at the address given.

Attendance and Membership

Anyone is welcome to attend the event, provided that they are either a current member of INCOSE, or they join at the time of booking. The INCOSE membership year runs from June 1st to May 31st. To join until the end of May 2007, please use the non-member rates, which include the membership fee. You will be sent a membership application form, which you should complete and return or hand to registration on arrival. Renewing members are asked to pay non-member rates.

Accommodation

Registration before 1st September 2006 includes FREE accommodation, including full breakfast, in University Halls of Residence on campus. Registration for the full Conference includes TWO nights accommodation, 2-day registration includes ONE night. Additional nights may be booked at £40 or €60 per night including VAT. No reductions will be given if this accommodation is not used. After 1st September, accommodation may still be booked at the £40 / €60 rate as available – please enquire with CTA Events. If you require accommodation at a local hotel instead, suggestions are on the Conference website www.incose.org/eusec2006. Please note that there are no hotels within walking distance; and hotels in the Edinburgh area become heavily booked in the summer period.

Meals & Refreshments

The registration fees include lunch, tea and coffee with biscuits during the period the conference is running. The conference banquet on the Monday evening is pre-paid for Full Event registrants only. The special event plus dinner on Tuesday is only available if booked – please use the appropriate block on the registration form. Also, please advise us of special dietary requirements. Extra seating for guests is available for the ice-breaker reception and the conference banquet.

Method of Payment

Payment is to be made in UK pounds or in Euros, in full without any deductions. Crossed cheques in UK pounds should be made payable to INCOSE UK and sent with the registration form. If using a company cheque please ensure that the delegate name is written on the reverse. Alternatively payment may be made by bank transfer, in UK pounds or in Euros, using the details on the registration form. Credit card payments can only be accepted in Euros. Invoices and receipts will be issued if required.

Student Rates

Student rates quoted are applicable only to students in full-time education. Students must be able to present their Student identification at the EuSEC registration Desk.

Tutorials

Wherever possible, tutorials are timed to avoid overlap with plenary sessions. This means that each tutorial is conducted over three 1.5 hour sessions on a single day. There is no extra charge for tutorials, and delegates may choose to combine attendance of technical presentations and tutorials, provided that they have reserved tutorial places in advance. More detailed tutorial abstracts are available on the Conference website.

Cancellations and Substitutions

All bookings are subject to a cancellation fee of £100 / €150 if received after the 1st September. Cancellations must be received in writing. Delegate changes / substitutions within the same company or organisation will be permitted without penalty provided that CTA Events receives the information in writing before the event. In the event of non-attendance of a registered delegate without prior notice in writing the full fee will be payable.

Programme Changes

While INCOSE will make every effort to provide the programme as advertised it may become necessary, for reasons beyond our control, to make changes to speakers and or to the timing and content of the programme. INCOSE will not be liable for any costs incurred by delegates in relation to such changes. Please check our web site www.incose.org/eusec2006 for latest details.

Proceedings

A CD containing technical papers to be presented and the key reserve papers will be produced and included in the delegate registration pack, available on registration at the Conference. Other material may be included, if available. Additional copies can be obtained from the UK Chapter.

Questions

For any questions directly related to your registration please contact CTA Events, Tel. : +33 (0)5 34 40 57 64/65 - Fax : +33 (0)5 34 40 66 15 - e-mail : karin.moens@cta-events.com. For any other information please contact John Mead on 01344 422325 or john.mead@incose.org (within the UK) or Karin Moens/Jessica Gruchet at CTA as above (outside the UK).

European Systems Engineering
Conference 2006
18-20 September 2006
Edinburgh Conference Centre,
Heriot-Watt University
Edinburgh, Scotland (UK)



Registration Form

Payment Information

To register, please complete this booking form (2 pages) and forward with your remittance, or a company purchase order, to:
Karin MOENS
CTA Events/EuSEC 2006
22 avenue de Purpan – 31700 Blagnac, France
Tel. : +33 (0)5 34 40 57 64 - Fax : +33 (0)5 34 40 66 15
e-mail : karin.moens@cta-events.com

Bank Transfer / Purchase Order– (in £ or €)

- Bank transfer (copy of bank transfer) in £sterling made payable to INCOSE UK
Bank transfer information is:

Lloyds TSB

48 Belle Vue Terrace – Malvern - WR14 4QG - UK
Account Holder: INCOSE UK
Account No: 00679247
Sort Code: 30-95-41
BIC: LLOYDGB21139
IBAN: GB94 LOYD 3095 4100 6792 47
SWIFT: LOYD GB2L

- Bank transfer (copy of bank transfer) in Euro € made payable to CTA Events
Bank transfer information is:

Banque Credit Agricole

6-7 place Jeanne d'Arc - BP 325 - 31005 Toulouse - France
Account number: 13106-00500-20000701196-08
IBAN: FR76 1310 6005 0020 0007 0119 608
Swift: AGRIFRPP831
Account holder: CTA Events
Account designation: SAS CTA Events – INCOSE

- Purchase order # _____ attached; please send invoice to: (No PO's accepted on-site)

Company Name _____

Address _____

City, State, Zip _____

Country _____

ATTENTION _____

When making payment by wire transfer, *all bank fees* are the responsibility of the sender and must be paid at the time of the transaction.

Cheque – £ only

- I enclose a cheque in £ made payable to INCOSE UK
(Please ensure that the delegate's name is written on the reverse)

Credit Card – € only

- By credit card

- Eurocard/Mastercard Visa American Express

Credit card number _____

Exp. Date _____ / _____ Amount _____

Signature _____

Registration Form

Delegate Information (Please Write Clearly)

Title _____ Last Name _____ First Name _____

Organisation _____

Billing Address _____

City _____ Zip code _____ Country _____

Address for communications about this registration _____

City _____ Zip code _____ Country _____

Tel. _____ Fax _____ E-mail _____

INCOSE Member # _____

By providing this number, you certify that your membership is current. Non-member prices include INCOSE membership up to May 31st 2007.

All prices include VAT; Full and two-day registrations

	Member	Non Member
Conference		
• Standard Full Includes sessions, exhibits, coffee breaks & lunches, banquet, CD proceedings	<input type="checkbox"/> £ 700 OR <input type="checkbox"/> € 1050	<input type="checkbox"/> £ 750 OR <input type="checkbox"/> € 1125
• Standard One Day Includes sessions, exhibits, coffee breaks & lunches, CD Proceedings Circle one: Mon, 18 Sept. Tues, 19 Sept. Wed, 20 Sept.	<input type="checkbox"/> £ 250 OR <input type="checkbox"/> € 375	<input type="checkbox"/> £ 300 OR <input type="checkbox"/> € 450
• Standard Two Days Includes sessions, exhibits, coffee breaks & lunches, CD Proceedings Circle two: Mon, 18 Sept. Tues, 19 Sept. Wed, 20 Sept.	<input type="checkbox"/> £ 480 OR <input type="checkbox"/> € 720	<input type="checkbox"/> £ 530 OR <input type="checkbox"/> € 795
• Student Full Includes same as standard full excluding banquet	<input type="checkbox"/> £ 350 OR <input type="checkbox"/> € 525	<input type="checkbox"/> £ 375 OR <input type="checkbox"/> € 562.50
• Student One Day Includes sessions, exhibits, coffee breaks & lunches, CD Proceedings Circle one: Mon, 18 Sept. Tues, 19 Sept. Wed, 20 Sept.	<input type="checkbox"/> £ 125 OR <input type="checkbox"/> € 187.50	<input type="checkbox"/> £ 150 OR <input type="checkbox"/> € 225
• Student Two Days Includes sessions, exhibits, coffee breaks & lunches, CD Proceedings Circle two: Mon, 18 Sept. Tues, 19 Sept. Wed, 20 Sept.	<input type="checkbox"/> £ 240 OR <input type="checkbox"/> € 360	<input type="checkbox"/> £ 265 OR <input type="checkbox"/> € 397.50

Academic Forum

Do you wish to attend the Academic Forum meeting on Thursday 21st Yes No

Accommodation

Circle nights required: Sun, 17 Sept. Mon, 18 Sept. Tues, 19 Sept. Wed, 20 Sept. Thu, 21 Sept. £40 OR € 60
(please mark all the days you need accommodation)

TUTORIALS (please circle tutorial(s) requested)

T1 T2 T3 T4 T5 T6 T7

Optional Tuesday Evening Special Event

No. of tickets _____ (£40 OR € 60 each)

Events Tickets For Guests / Registrants Other Than Full Conference

Ice Breaker reception _____ * £20 / € 30 = _____

Banquet _____ * £35 / € 52.50 = _____

Total

--	--