Systems Engineering Management

Five Day Course

Why train with us?

This 5-day course provides in-depth coverage of how to manage engineering projects to maximize project success, within the project's given constraints. The course establishes principles and provides methods for successfully managing projects, and getting the best out of people, individually and in teams.

This Systems Engineering Management course will most benefit people who seek substantial knowledge and understanding of how to best go about managing technical projects, even more so those projects involving complex engineering.

"The best thing about the course for me was to have all theoretical concepts supported with real experiences told by the presenter, gained in projects he has worked on."
—Deleguee

UPCOMING 2016 COURSE DELIVERIES

<table>
<thead>
<tr>
<th>Course Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 - 17 June</td>
<td>Munich, Germany</td>
</tr>
<tr>
<td>4 - 8 July</td>
<td>Eindhoven, the Netherlands</td>
</tr>
<tr>
<td>10 - 14 October</td>
<td>London, United Kingdom</td>
</tr>
<tr>
<td>7 - 11 November</td>
<td>Amsterdam, the Netherlands</td>
</tr>
<tr>
<td>7 - 11 November</td>
<td>Manchester, United Kingdom</td>
</tr>
</tbody>
</table>

EXAMPLE PBS/WBS

This course is recognised by Engineers Australia for CPD purposes (40 hours).
This course is credited towards the maintenance of the INCOSE Certified Systems Engineering Professional (CSEP) accreditation for 40 Professional Development Units.
This course is recognised by ECSA South Africa (ref INCOSE 15/027) for CPD 5 points.

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Visit our website or contact us to find out more information:

www.ppi-int.com

Phone: +44 20 3608 6754 (Answers in Australia)
Email: contact@ppi-int.com
In this issue:

Spring 2016

Regulars and Columns

4 - President’s Corner
6 - News from the UK Advisory Board (UKAB)
7 - ‘I am a Systems Engineer and I Do…’
9 - News in Brief from the World of Engineering
9 - Professional Development with INCOSE UK

Features

8 - INCOSE UK Blog
11 - CPD with mycareerpath®
14 - IS 2016 Event Preview
18 - IS 2016 Student Competition
19 - INCOSE UK 2016 Training Day
28 - Tweets from 2016

INCOSE UK News

18 - Architecture Working Group Update
22 - ASEC 2016 Systems Research Academic Showcase
23 - Exhibitor Opportunities at ASEC 2016
27 - INCOSE UK Events Calendar
2016 is moving on with some pace.

In this article I’d like to focus on two aspects of INCOSE UK’s activity; firstly the routine operation of INCOSE UK events and I’d like to take this opportunity to promote the flagship UK events in 2016. Secondly, as INCOSE grows we rely on volunteer effort and the range of expertise and help we require now needs some focused explanation.

In 2016 we have, as usual, two flagship events. The first of these is the training day, to be held at Lydiard Park (near Swindon) on the 8th of June.

Providing Professional Development is a core part of the INCOSE UK strategy and so I am pleased that there are 4 training courses on offer, providing a full spectrum of Systems Engineering capability. The topics covered include Systems Thinking, Systems Engineering for Interfaces, an Introduction to Model-Based Systems Engineering and a day long introduction to the INCOSE Systems Engineering Handbook, which will include the relationship with the SEP examination.

The topics offered are based on requests and feedback we have received and we hope that you will find these courses useful and relevant. Please go to the events pages on the INCOSE website for more details and to make a booking.

The second event is our UK Conference, ASEC. Obviously there is the INCOSE International Symposium in Edinburgh in July this year, but the annual UK Systems Engineering conference will run 15th-16th November at the Warwick University Conference Centre. This will be an opportunity for a UK-flavoured focus on Systems Engineering and to advance conversations that may have started in Edinburgh. The window for presentation and tutorial abstract submissions has now closed, but there is still time to submit your entry for the Systems Research Academic Showcase – read the full details on the ASEC2016 website.

Regarding my second point, I’d like to talk about volunteers to support INCOSE UK. Obviously, INCOSE UK runs on volunteer support; from the Council officers down to the local groups and the many who work on various teams and committees, contributing as they can.

As I have said before, you don’t need to be an expert to volunteer – supporting INCOSE is a great way of learning and developing your Systems Engineering knowledge and contacts. I want to thank all those who currently help with the running of INCOSE UK and would also like to put out a plea to our other members for more help. With more help we can do much more.

I am conscious that I need to give more focus to the call for volunteers; a blanket request does not give
you an idea of what might be required, but there are many ways that individuals can help.

Most of the Council Directors have a team supporting them, so if your interest is in professional mentoring, developing training or assessing competency then the Professional Development team could use your help.

The Communications Team could use help with general communications support, including advising the less savvy on modern social media mechanisms, social media moderation and the preparation of communications materials.

The Events Team need help preparing the events and managing certain aspects (e.g. the Student poster competition or the tutorials at ASEC) and local groups can use support from people willing to help coordinate specific events.

If you are already a registered CSEP or ESEP then you may like to consider undertaking a day of Certification Application Reviewer (CAR) training, and then putting your experience to use in reviewing reference submissions from other potential CSEPs. If you would like to find out more about CAR training, please contact the INCOSE UK Professional Development Coordinator, Lynn Davis.

Additionally, another mechanism to volunteer is to offer your own insights and experience, either in a working group (recognising that you do not have to be an expert in the subject to be in a working group, just possess a keenness to develop and understand the subject matter) or by giving a presentation at a conference or to a local group. So if you are keen to get engaged there is a place for you – please contact the most relevant member of the Council and they will direct you accordingly.

Finally, there is the option to serve on the INCOSE UK Council. This year three roles come up for nomination – President-elect, Technical Director and Finance Director. If you would like to perform any of these roles please discuss with the current incumbent (or any other member of the Council). I strongly believe (but I am biased as I have volunteered) that you get far more out from volunteering than you put in.

INCOSE UK is a growing organisation which offers more to its members each year. This can only continue if members attend the events and contribute to the development and promotion of Systems Engineering. We need as wide a range of experience and domain as possible so that we can ensure we support our values of pioneering and innovation, learning, development and collaboration.

Richard Beasley
President INCOSE UK
INCOSE UK Platinum Chapter Award

INCOSE UK are delighted to announce that we have been awarded the platinum level in INCOSE chapter awards for our activities in 2015.

Platinum is the highest level in the awards and this is the first year it has been awarded. This award reflects very positively on all in INCOSE UK who participate in our working groups, local groups, council, teams and attend our events.

As president, I am looking forward to picking up the award at the International Symposium being held in Edinburgh in July and celebrating with all the UK members who are attending, as well as celebrating again with a larger group of members at the UK ASEC in November.

Keep up the good work everyone.

Richard Beasley
President INCOSE UK

News from the UK Advisory Board (UKAB)

The UKAB is still continuing strong and we are currently processing member renewals for the coming year.

The most recent event was an informative joint meeting held between the UKAB and the INCOSE UK Council, while there are number of other functions lined up for the immediate future. The next scheduled meeting is in early July and will see the UKAB Points of Contact visit MIRA Horiba’s site in Nuneaton.

If any of your organisations would like to be more involved in supporting and providing an industrial perspective/guidance to INCOSE UK on any aspect of Systems Engineering, please visit the INCOSE UK website here for details on how to join..

David Venn
UKAB Chair
ukab-chair@incoseonline.org.uk
‘I am a Systems Engineer and I Do…’
by Kate Heathcote

Why did I choose to be a systems engineer?
By continually striving to know more about the context of my work, becoming a Systems Engineer has been a natural progression for me.

After graduating with an Electronics Engineering degree in 2005, my first job role was as a Digital Design Engineer working on detailed ASIC design. Although the work was very interesting, I was increasingly asking for wider reaching opportunities so that I could understand where my 'piece' of the puzzle fitted into the overall system. I quickly came to understand that I like to be involved in all aspects of creating a product, from conception into production, design and test, right through to understanding how the product will be managed through-life. It wasn't until almost 8 years into my career that I came across the term 'Systems Engineer' and finally understood that this was the career role I had been doing without even being aware of it!

Educations / qualifications for being a systems engineer?
Most of my skills as a systems engineer have been obtained through practical experience, primarily through a 'T' shaped path; starting with a technical specialism and then broadening into strategic thinking Systems Engineering.

I have, however, re-enforced my confidence in my abilities by becoming a Chartered Engineer through the IET in 2012, showing a level of competence across the UK Engineering Spec. I also took part in the SE Handbook V4 beta exam, becoming an Associate Systems Engineering Professional (ASEP) in 2013, showing a base level of competency in the Systems Engineering Handbook and ISO15288.

Passing the ASEP qualification has now given me the opportunity to apply for the Certified Systems Engineering Professional (CSEP) qualification, which I am in the latter stages of completing.

What is it that you find about Systems Engineering that is so compelling?
Having great variety in my day-to-day work and a role where it is my job to ask questions and to continually challenge! I have always been an inquisitive person and unafraid to ask questions; to have a career where I continually take on new challenges and work in an environment where I am actively encouraged to ask questions is great.
Another aspect of Systems Engineering that I thoroughly enjoy is working with a great variety of people - much of my work is about bringing together knowledge from all areas of the company – and my most recent work has given me the opportunity to work with key scientific advisors, senior production staff, material specialists and many more disciplines across my company.

**What is your advice to people considering Systems Engineering as a profession?**

There are two pieces of advice I would give. Firstly to build good relationships; as a systems engineer it is often your responsibility to be the glue that brings it all together and by building up good relationships with a variety of people, it can often make a systems engineer’s job a lot easier.

Secondly, do not be afraid of failure, by failing you learn! There is no shame in failure; I have learnt some of my most important lessons when things haven't quite gone to plan. At the time it seems like the end of the world, but sometime later when the dust has settled and I have worked back through the problem, I have almost always ended up with a better outcome and the ability to not make the same mistake again!

*Would you like to be the next person who is featured as 'I am a Systems Engineer and I Do'? – If so please email the editor here.*

**INCOSE UK Blog**

Remember the last conference or event that you attended? Did you have an interesting topic to talk about in the margins; something you have done, or a thought experiment you are working through? The next INCOSE UK opportunity for this type of interaction is our Training Day in June, then there is the International Symposium in July and finally for the year, ASEC in November... assuming you get travel approvals.

With a blog you can have a virtual version of this today; we are inviting members to submit to our blog. A short opinion piece on a topic that you care about or is currently dominating the headlines, add a few words about who you are, and a picture if you have one that we are allowed to use with no copyright issues.

Blog posts can have comments, so a discussion is possible. I would recommend LinkedIn for questions, but for more fully formed ideas you can send us your piece to be published on the INCOSE UK (WordPress based) blog.

*If you have any questions regarding submissions to the blog, or an article that you would like to submit, please email the editor here.*
**News in Brief from the World of Engineering**

**The Verge** - has an article on the potential introduction to Hospitals of the World's first personal care robot, named Hospi-R. Trials have already been undertaken in Singapore and it could soon be due to expand in to new territories: [http://bit.ly/1q9htqF](http://bit.ly/1q9htqF)

The Institute of Mechanical Engineers reports that the **UK aerospace industry has seen a 35% increase in aircraft delivery rates** over the past 5 years. The backlog in the first quarter of 2016 stood at approximately 400 aircraft, which had a potential value to UK industry of up to £195 billion.

**The Engineer** reports how US researchers have streamed HD video data through shop-bought pork loin. It is believed that the discovery will present new possibilities in relation to internal imaging and the control of medical implants.

**The UK space industry is seeing rapid growth**, with a **250% increase in registered jobs in the first quarter of 2016 compared to the previous year**. Huxley Engineering believes there will be demand for 100,000 skilled workers by 2030 and Tom Kelly, Contract Team Manager states that "If you’re currently working in Systems Engineering… then demand for these positions in the space industry has never been higher”.

**Aberdeen’s Hydrogen Bus fleet** marked its one year anniversary in March; the vehicles had travelled 250,000 miles and were shown to be nearly four times more fuel efficient than diesel buses, while producing no emissions other than water vapour. City Councillors are hoping that the success will help to boost the profile of Aberdeen’s Hydrogen economy.

Registration has now opened for the **UK’s first public autonomous car trials**, which will take place in the Royal Borough of Greenwich as part of an £8 million research project. In addition to the physical trials, members of the public can also register to take part in workshops to help envision the future of driverless vehicles.

**INCOSE Systems Engineering Certification**

The number of INCOSE members applying for SEP through the UK online system continues to grow.

Below are the numbers of members achieving SEP Certification through the UK online system, along with total number of UK Chapter members who have achieved certification.

<table>
<thead>
<tr>
<th>Level of SEP</th>
<th>UK accredited</th>
<th>Total UK (from INCOSE central records)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASEP</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>CSEP</td>
<td>13</td>
<td>49</td>
</tr>
<tr>
<td>ESEP</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

We have added three more CSEPS to our list in recent weeks. Congratulations to Christopher Noonan, David Harriman and Andy Martyniuk for achieving this. Well done also to Mark Best who achieved ASEP. Two more CSEPs are currently being reviewed and a further 35 INCOSE UK members are working on applications and exam preparation.
Professional Registration

We are congratulating five INCOSE UK Members who have been successful in their application for Professional Registration since our last edition of Preview.

Robin Nickless – CEng Mark Powell – CEng Laura Shrievès – CEng Richard Lewis – CEng Adam Stead - CEng

Chartership continues to grow and develop within INCOSE UK with two members currently in the IET process and many more at various stages with their application.

Any members who are interested in obtaining a copy of the Systems Engineering handbook V4 or finding out more about Certification or Professional Registration through INCOSE UK, should contact Lynn Davis on 01460 298217 or email her here.

Certification Exam Opportunity

INCOSE UK Professional Development is currently working with a UK company to set up an on-site certification examination.

The exam, which is relevant to both ASEP and CSEP, is a paper-based exam and is equivalent to those currently hosted by Prometric examination centres. It is scheduled for October 2016, with the proposed venue in Reading, Berkshire. The cost to individual candidates will be £150.00 +VAT.

If you are interested in participating as an independent candidate please contact Lynn Davis for further information.

New members for the INCOSE UK Reviewer team

The INCOSE UK Certification Reviewer team continues to grow in number, with two new Certification Application Reviewers (CARs) trained this month by the INCOSE UK Professional Development Director, Ian Presland.

Michael Gainford ESEP and Nick Young CSEP have volunteered to join the team, which now has 13 members.
**CPD**

Continuing Professional Development.

“The process of tracking and documenting the skills, knowledge and experience that you gain both formally and informally as you work, beyond any initial training. It's a record of what you experience, learn and then apply.”

A cursory look at the internet will uncover many definitions of CPD. Most of them relate to learning and the subsequent reflection on your experiences to add to and enhance your knowledge and skill set. Most of us perform CPD without even realising we are doing it, every day in the workplace, but before even beginning to consider what does and doesn’t count, perhaps we should be asking ourselves a bigger question – “Why is CPD so important?”

It may seem obvious but would we trust a doctor to diagnose us or a lawyer to advise us if they were not up to date with the very latest techniques and legislation? For many in the world of Systems Engineering it is just as vital to stay in touch with changes in law and the latest technological developments because of what could happen if we get it wrong.

In recent times the need to formally record CPD has come to the fore with the Engineering Council issuing a CPD code for Registrants and moves towards compulsory sampling of registrants across the engineering institutions are planned as standard in coming years to ensure this is complied with.

See the INCOSE UK Z Guide on Continuing Professional Development [here](#).

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The INCOSE UK mycareerpath® tool is designed to assist members in recording their CPD. It is free to all members and can be accessed via the ‘my profile’ section of the INCOSE UK website or through the Professional Development section. The CPD recording tool can be used via PC, Mac, Tablet and smartphones making it easy to upload information wherever you are. In this issue of Preview we aim at those using the tool in preparation for chartership or who are looking to record CPD in support of their professional registration accreditation on an annual basis. Future editions will give advice on Certification and recording PDUs.

Mycareerpath® has four main functions in supporting INCOSE UK members in recording CPD:
Initial Professional development (IPD)

For those seeking to work towards professional registration it provides a useful tool in matching your work experience to the UK-SPEC. Once logged in you can select the appropriate profile (EngTech, IEng, and CEng). Here you will be able to see all competence and commitment criteria and track your progress against each criterion so you will know when you are ready to apply. INCOSE UK has added additional guidance for Systems Engineers to the profiles to assist applicants.

Plan

Creating an IPD or CPD plan is a key part of most CPD schemes. It’s a useful tool to track your progress against. The plan is up to you. It can be a general plan charting weekly, monthly or yearly progress or it can be a specific plan to gain professional registration, complete a particular project or training course.

Evidence

The evidence area is a key part of mycareerpath® as this is where you will actually record your CPD. Evidence can be as simple as writing a couple of sentences about a workplace activity you completed or a fuller summary over a period of time. Photos and documents can also be added as supporting evidence if you wish. Each piece of evidence can be linked to relevant competence and commitment criteria to help generate your professional review report. Most importantly, the tool encourages you to reflect on the benefit of your activities through the ‘lessons learnt’ and ‘benefits gained’ sections of the form.
Reports
Periodically you may be asked to present a report of your CPD activity. This may be part of a random registered member sampling, your SEP renewal, an employer’s appraisal or part of a tender or proposal you are submitting. The ‘Reports’ function on mycareerpath® enable you to compile records for a given date range. If you are working towards professional registration you can even generate a professional review report using this function. As with every mycareerpath® section, you have the ability to forward your document to a colleague for review as required.

For more information or help with recording CPD, contact Lynn Davis at profdev@incoseonline.org.uk

Are YOU making the most of your INCOSE membership benefits?

The INCOSE UK Secretariat Membership Coordinator, Sophie Storey, not only handles membership applications and renewals but works hard to ensure members receive all their membership benefits. Perhaps the most important of the benefits is access to information.

While members can view documents and purchase publications via the INCOSE UK website, more and more information is being disseminated via emailers. These emailers can vary from job vacancies and Working Group meetings through event deadline reminders to Preview magazine (no longer produced in hard copy).

To ensure you are not missing out on the latest INCOSE UK news and information please make sure the INCOSE UK Secretariat has your current contact email address. This can be done by updating your membership details on the Chapter website or by emailing Sophie here.
When you update your details online, please make sure to do so through the INCOSE UK Chapter website rather than the INCOSE central site. This is because while we will notify them of any changes to member contact details, they will not update us, and hence we may not be aware of the amendments.

If you do not wish to receive emailers you can opt out, but please remember the Secretariat still needs your contact details for membership renewal reminders and the dissemination of membership receipts.

Our aim is to provide the best membership experience we can.

Events News for 2016

It shouldn’t have escaped your notice that this year the INCOSE International Symposium is coming to Edinburgh, back in Europe for the first time since 2012, and back in the UK for the first time since the 1999 symposium in Brighton. The symposium will be taking place in the superb surroundings of the Edinburgh International Convention Centre (have a look for yourselves at www.eicc.co.uk - it’s an excellent venue), which is situated in the Haymarket area of the city, only a short walk from the Haymarket tram station.

On a recent visit to confirm details with the venue, it was a pleasure to catch the tram from Edinburgh airport to Haymarket and take in the views (o.k. so Murrayfield was nice to see, but the park and ride car park is probably a very niche attraction). The venue itself does not feature accommodation, but there are plenty of hotels in the surrounding area, and a set of block bookings have been made with local hotels which can be booked up during the registration process.
The Technical Programme is the most extensive that it has probably ever been, taking advantage of the record-breaking number of submissions (222 papers), and features a strong UK line-up with many familiar faces from UK conferences over the years. With so many submissions, we have also decided to create a dedicated area for posters from the reserve speakers.

It is also very pleasing to see excellent UK representation amongst the keynote speakers, which will give a strong local flavour to proceedings – not that we would ever be lacking that with Richard Beasley as master of ceremonies, and Alan Harding as the current President.

We have also been busy organising the specially invited content – covering topics that fit into our strategic aims (such as industry outreach focussed roundtables and panels, and a fascinating interactive session organised by the INCOSE Institute for Technical Leadership), but also some more lively and light-hearted concepts.

The “Tool Vendors Panel Show” was prototyped at ASEC 2015 (and if nothing else, that last statement shows that this is an engineering conference being designed by engineers), and will be running as an extended version, potentially featuring two teams of panellists.

We are also running a series of “Fringe” sessions designed to both entertain and enlighten. Once again, these have been informed by experimentation at ASEC 2015, and for IS 2016 we will be having a Systems Engineering themed magic show on Monday afternoon, a panel show on Tuesday afternoon based loosely around improvisational stand-up comedy, and a “goldfish bowl” investigation into Systems Engineering topics on Wednesday afternoon. As if this wasn’t enough, there are also plans afoot to host an SE themed pub quiz one evening in a local establishment.

Building on last year’s successes in Seattle, we will be repeating the “SE101” and “Practitioners’ Challenge” sessions which proved so popular. These will feature some new presenters and a new twist to the challenge taking on an issue of true global importance, with more of a focus on combining systems thinking with architectural techniques to address the problem – returning to a familiar theme of defending the earth from asteroids.

We have one of the largest exhibition spaces that I’ve seen for a while, easily able to accommodate 60 exhibitors and a special “INCOSE village” in the centre of the Lennox Suite (totalling 1,600m2 of space). At the time of writing, over half of the exhibition booths have already been sold, so please don’t delay if you are contemplating exhibiting at the event or being a sponsor.
New members will not be forgotten either, with the Mentor Connection set to be repeated. Please sign on for this when you register if you would like to be paired up with a new member (or an old one for that matter!). We even intend to create a space for “conference spouses” to congregate after they’ve dropped off their other halves for the day – although it’s fair to say that there is no shortage of things to do in Edinburgh, and the Convention Bureau have kindly offered to supply every delegate with an Edinburgh Rewards Passport offering discounts at a wide variety of approved restaurants, cafes, bars, shops, attractions, tour companies, and taxi firms.

Finally, the conference banquet will be taking place in the delightful surroundings of Prestonfield House, which offers superb views of Salisbury Crags (also known as Arthur’s Seat) from the grounds. There will undoubtedly have to be an element of traditional Scottish entertainment to please the colonials and other overseas visitors, but I’m assured that there will be a bar available throughout proceedings for those who feel the need to escape with a glass of something and take in the scenery. It’s all set to be a fantastic symposium, in a stunning city, and I hope to see as many of you there as possible!

Ian Gibson
INCOSE Outreach Director

Confirmed Keynote Speakers

Prof Larry Leifer
Director of the Center for Design Research

Prof John Loughhead
Chief Scientific Advisor, Dpt of Energy and Climate Change

Julie Alexander
Director for Urban Development, Siemens

Kevin Robinson
Group Leader, DSTO

Dr Emma Langman
Fellow of the Royal Society of Arts (RSA)
Are you interested in attending the world’s premier systems engineering event in Edinburgh this year?

The International Council on Systems Engineering (INCOSE) is holding its annual symposium in Edinburgh from 18th to 21st of July. This is the world’s premier knowledge sharing and networking event for Systems Engineers. You will have the opportunity to network with the world’s top Systems Engineers and hear presentations on the state of the art and state of practice in Systems Engineering.

INCOSE is offering to provide free attendance at the conference. This offer is open to full time students enrolled in an undergraduate or Masters level Systems Engineering course. Applicants need to be Individual INCOSE student members or have studied at a University that is a member of the INCOSE UK Advisory Board (on 31 May).

APPLY NOW

If you would like to apply for this exciting opportunity, please submit:
1. A high level (less than 1000 word) statement explaining why you believe systems engineering is an exciting career and why you want a career in systems engineering
2. A copy of the abstract of an individual project that you have undertaken as part of your studies
3. A short letter from your Professor supporting your application

Submit your applications to: students@incoseonline.org.uk

Deadline 3rd June 2016
International Workshop 2017 (IW 2017)

IW 2017 runs from 28 - 31 January 2017, once again at the Torrance Marriott Redondo Beach, 3635 Fashion Boulevard, Torrance, California.

• Dates: January 28 2017 – January 31 2017
• Location: Torrance, California, USA
• Venue: Torrance Marriott Redondo Beach, 3635 Fashion Boulevard. Torrance, CA

Mark your calendar!

INCOSE UK Training Day - 8th June 2016

Time is rapidly running out for you to secure your place on this year's training day, which is being held at Lydiard House Conference Centre, near Swindon.

This year’s training day features a selection of different topics from a range of acknowledged experts in the field of Systems Engineering.

The topics on offer this year are; ‘How to Systems Think’ (Stuart Burge), ‘Systems Engineering for Interfaces’ (Hazel Woodcock & Paul Davies), ‘An Introduction to Model-based Systems Engineering’ (Simon Perry & James Towers) and ‘INCOSE System Engineering Handbook Training’ (Ian Presland).

Of all the survey respondents from last year’s training day, over 85% rated the overall benefit of the day as being ‘Excellent’ and when asked how he would describe his course if he could only use a song title, Ian Presland set the bar high for this year, with his answer of ‘Stairway to Heaven’! Not to be outdone, Paul Davies suggested that his and Hazel Woodcock’s day would offer a ‘Bridge Over Troubled Waters’.
Regarding his course, Stuart Burge explained that he liked to describe Systems Thinking using the word ‘eunoia’ – the shortest English word to use all 5 vowels – meaning ‘beautiful mind’, while Simon Perry and James Towers do not believe that any attendees to their course will need any specialist knowledge, just some real life experience and a sense of adventure!

In addition to the high quality tuition available, the course will be occurring in the Conference Centre at Lydiard House, a tailored venue set in a beautiful country estate near Swindon. There is complimentary car parking and lunch provided, and after your course finishes why not take the time to reflect on the day’s learning with a stroll through the scenic surrounds?

Official functions such as the training day, have contributed heavily towards INCOSE UK’s 2015 Platinum Chapter Award, with our members reaping the benefits of these high quality events. With time rapidly counting down, don’t miss your opportunity to participate by booking your place through the INCOSE website here.

**Update on the Architecture Working Group (AWG)**

A few weeks ago, our erstwhile Technical Director, Andrew Farncombe, sent me an email to ask me if I was aware that 2016 would mark the 10th anniversary of the UK Chapter AWG. Of course, I had no idea that this significant milestone was imminent - but it set me thinking about what the AWG had achieved and what it still planned to do.

There have been many achievements over the years, including: the publication of products such as the Z-Guide and the Architecture Practice Paper; numerous academic and conference papers, articles and presentations; and extensive support to international standardisation activities, such as ISO/IEC 42010, 42020, and 42030.

Despite all of this activity, the work of the AWG is not complete - it is very much a ‘live’ working group and has recently started to engage on several topics with INCOSE architecture groups at the European and international level. Members of the AWG have agreed that something special is needed to celebrate the anniversary - watch out for more on this in due course.

One of the principal areas of focus for me personally over the last year has been on the development of a ‘polemic’ paper, setting out a series of challenges to Systems Engineering and making a ‘call to arms’ for architecture to be placed at the heart of future
Systems Engineering. In summary, the argument of the paper is that Systems Engineering has historically been too narrowly focussed on ‘traditional’ types of systems (e.g. defence and aerospace systems) and even now treats other kinds of systems (e.g. enterprise systems, systems of systems, or software systems) as unusual or special cases. Meanwhile, other disciplines have gone further than traditional Systems Engineering and have developed what are essentially architectural approaches to deal with their particular context.

The final element of the story is that the pressing challenges facing humanity today are not focussed on traditional systems, more on broader, softer, and complex systems such as the Earth system, global integrated economic/political systems and integrated human/machine systems. If Systems Engineering is to be relevant to today’s problems, it must therefore adapt and expand - the polemic paper proposes that architecture provides a pathway into this broader systems landscape and proposes a manifesto for how it could be done.

The paper, entitled “An Architects Manifesto for the Development of Systems Engineering”, is currently being readied for publication as a discussion paper. It will provide a foundation for further work within the UK AWG and within the International AWG. There is a plan to distribute the paper in advance of the upcoming International Symposium in Edinburgh, where there will be a related Panel Session on the topic of “Architecture: from Snake Oil to Panacea?”.

I will be acting as the panel moderator and I will be joined by an eminent group of colleagues from across the INCOSE family: Hillary Sillitto (UK), Tim Rabbets (UK), Dr James Martin (USA), Richard Martin (USA), Jean-Luc Garner (F), Alain Faisandier (F), and Prof Gerrit Muller (NO). The session is taking place at 8am on Thursday the 21st of July. If you are attending the IS, we would be delighted to see you there. We would be even more delighted if you are inspired to join the AWG to help us in progressing the architecture manifesto.

On which topic, I need to apologise about an embarrassing problem regarding the online process for requesting membership of the AWG. We have recently discovered that the requests to join the AWG created via the INCOSE UK website have been languishing in an electronic cul-de-sac, unnoticed by either of the AWG Co-Chairs or Admin people.

If you were one of the unlucky ones who used the online registration process and did not receive a response I am very sorry - the AWG has a policy of accepting all membership requests and this was an error and not in any sense a membership rejection. We will be contacting all of you who we believe might be in this situation in the next couple of weeks to see if you are still interested in getting involved. Of course, you are welcome to contact me directly at any time and I will add you to the membership list. Please use my normal work email address - mike.wilkinson@atkinsglobal.com.

Mike Wilkinson
Co-Chair
ASEC 2016 - Systems Research Academic Showcase Submissions

Following some very positive feedback from delegates in the past couple of years, we will once again be running the Systems Research Academic Showcase at ASEC 2016.

The Showcase is a poster competition for academic research but, unlike other competitions, has a far wider remit that includes:

- Individual contributions, from full-time students researching systems engineering topics
- Group contributions, from academic research groups in specific universities
- Project contributions, such as EU and EPSRC projects. We welcome contributions that may consist of a collaboration of partners involved in a single research project.

The five best posters submitted will win their authors one complementary attendance at ASEC 2016, including two days’ registration, accommodation and dinner.

The poster competition will be judged by a panel of industrial experts and the winning poster – selected from the top five – will win a prize of £200. There will also be some ‘mystery’ prizes on offer, which have been donated by Dyson!

The INCOSE UK ASEC provides an excellent opportunity for you, your group or project to tell the community about your research, and with funded conference places and a cash prize up for grabs, make sure you don’t miss the opportunity by getting your submission in now – places are limited!

Key deadlines:

5th June 2016
Submission of 250 – 300 word abstracts, outlining your poster topic and main point.

10th July 2016
Submission of proposed poster; final conference posters will be selected and notified by mid-June 2016.

Remember that there are a number of funded places for the best five submissions!

For any queries or to see the full information, please see the original call for posters here.
Exhibitor Opportunities at ASEC 2016

As in previous years, the INCOSE UK Annual Systems Engineering Conference (ASEC) offers opportunities to promote your business to the INCOSE UK membership, which currently stands at more than 900.

Our functions attract senior systems engineers from a broad range of industries – many of whom help to shape investment decisions within their organisations – and ASEC 2016 is our flagship event of the year.

There are multiple opportunities for you to raise your company's profile at this year's event. In addition to the summary below, you can read the full details on the INCOSE UK website here.

Exhibition Area (up to ten stands available)

The Exhibition Area is located with the tea and coffee facilities in order to maximise potential delegate flow during the event. Exhibitor packages include a 2 metre by 2 metre stand including table and chairs, as well as a two-day Conference ticket and an Exhibitor Pass, which includes a place at the event dinner. The package also features the inclusion of promotional items in all of the event literature.

Sponsorship Packages

Systems Research Academic Showcase (up to ten sponsors)

This is a poster competition for academic research and offers the following benefits; opportunity to appoint a judge to the judging panel, company logo to appear on the bottom of each poster displayed and company acknowledgment on our website and in the related section of the Conference Handbook.

Event Brochure (up to four sponsors)

Corporate logo included on the front cover of the event brochure, in the Conference Handbook and also on the event website.

Ice Breaker Drinks

These will be held on the evening of 14th November in the Bar at Scarman House and based on prior years, we would expect around 100 delegates to be attending. This allows the display of a company sign supplied by you
during the Ice Breaker Drinks, as well as the inclusion of a corporate logo in the Conference Handbook and on the event website.

**Event Dinner**

This year’s dinner will take place in the dining room of Scarman House. Sponsorship benefits include the display of a company sign supplied by you during the dinner, your corporate logo featured in the Conference Handbook and on the event website and a seat on the top table with the after-dinner speaker and VIPs.

![A photo from 2014’s event dinner at RAF Cosford](image)

**Registration**

There is the opportunity to sponsor the registration desk, which will be visited by every attending delegate in order to register on the day. This package will include the display of a company sign supplied by you at the registration desk, as well as your corporate logo being featured in the Conference Handbook and on the event website.

**Further Opportunities**

The INCOSE UK Events Team is happy to discuss suggestions for sponsorship with organisations who may wish to do something that is not already mentioned above.

To discuss any potential ideas that you have in mind, or to obtain further information regarding any of the opportunities listed, please [email Emma Jane](mailto:email).
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INCOSE UK Events Calendar

This calendar is a summary of events at the time of going to press. For the latest, up-to-date information please visit the Events page on the INCOSE UK website.

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Organisation &amp; Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/06/2016</td>
<td>Service Systems Engineering</td>
<td>Service Systems Engineering Meeting 20</td>
</tr>
<tr>
<td>11:00 – 15:00</td>
<td>Rolls-Royce Plc, Whittle House, WH73 PO Box 3, Filton, Bristol, BS34 7QE, (Sat Nav - BS34 6QA)</td>
<td>Agenda: Applying ideas to Case Studies Presentation at IS 2016 Submission to ASEC 2016</td>
</tr>
<tr>
<td>07/06/2016</td>
<td>Railway Interest Group</td>
<td>Managing Complexity: Signalling interoperability for Engineer’s Vehicles</td>
</tr>
<tr>
<td>17:00 – 19:00</td>
<td>CH2M Hill, Elms House, 43 Brook Green, London, W6 7EF</td>
<td>London Underground has increased its fleet mileage by almost 40% since the year 2000 but productivity of track renewal has not improved at the same rate. The Engineering Fleet of 270 vehicles is being modernised with new vehicles and innovative new mechanised maintenance solutions requiring an interoperable signalling solution to maximise the versatility of these specialised assets. To deliver more productive track interventions with fewer closures, engineer’s vehicles need to get to site earlier and reliably to maximise productivity by inter-running with the passenger service. Alan Wilson, Project Manager for the EV Signalling Concept Design stage, and Jorrel Dawoodi, a Systems Engineer supporting the Track Plant portfolio will present their practical methodologies used to manage the complexity of signalling interoperability.</td>
</tr>
<tr>
<td>08/06/2016</td>
<td>UK Chapter</td>
<td>2016 Training Day</td>
</tr>
<tr>
<td>Full Day</td>
<td>Lydiard House Swindon</td>
<td>2016 Training day will offer Individuals the chance to select a day-long course from four options. More information on the Training Day is available on the INCOSE UK website.</td>
</tr>
<tr>
<td>13/06/2016</td>
<td>Agile Systems Engineering WG</td>
<td>Agile SE Working Group</td>
</tr>
<tr>
<td>10:00 – 15:00</td>
<td>Abbey Wood, Bristol</td>
<td>Following on from the successful White Paper: 50 Shades of Agile, this meeting of the Working Group will take that work forward to generate the guidance on how to undertake Agile Systems Engineering. Kindly hosted by Duncan Kemp.</td>
</tr>
<tr>
<td>15/07/2016 - 21/07/2016</td>
<td>International</td>
<td>26th Annual INCOSE International Symposium</td>
</tr>
<tr>
<td>Full Days</td>
<td>Edinburgh, Scotland</td>
<td>The Annual INCOSE International Symposium is the premier international forum for Systems Engineering. Participants network, share ideas, knowledge and practices, and learn more about the most recent innovations, trends, experiences and issues in Systems Engineering.</td>
</tr>
</tbody>
</table>
### Some Tweets from 2016

**INCOSE UK Rehearsed**
*Studica UK Limited* @Studica_UK - Feb 9
What #engineering contributes to the UK economy? #STEM @primaryengineer @EngCouncil @TheIET RT @GoudieUK

**Engineering drives productivity**

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**Ian Gibson** @ianinfocusuk
Busy morning plotting this year’s @incoseuk #ASEC2016 conference, and already thinking about #ASEC2017 venues.
asec2016.org.uk

**Richard Beasley** @nrbbeasle
#incoseUK collection of chapter awards - seen at council meeting today. We must have done something right!

**Young Engineers** @IETFaraday
MT@IETFaraday: New KS2 book from @incoseuk. Promote #STEM in your school ow.ly/ZcnYY