24th & 25th November
‘Best Practice in Systems Engineering’

The INCOSE UK Autumn Assembly (AA08) offers you the chance to explore cutting edge advances in Systems Engineering practice.

At this year’s INCOSE International Symposium the UK chapter of INCOSE was once again awarded the INCOSE President’s Award for the best international chapter. One part of the reason for the success of the UK chapter is the very high standard of technical activity undertaken by individual members and UK based working groups. We would like to offer you the chance to find out more about these advances in Systems Engineering theory and practice through a series of “master class” sessions and hands on workshops.

All of the sessions at AA08 are facilitated by experienced experts. We will be offering sessions on:
- Current best practice in Systems Engineering processes such as requirements, architecture, test and evaluation.
- How to apply Systems Engineering to sustain and enhance in-service systems; or to the creation of total business capabilities.
- The professionalism of the discipline of Systems Engineering and the links between Systems Engineering and other disciplines such as Project Management and Human Factors.

A brief outline of the proposed sessions for AA08 is included overleaf. A full 2-day programme with session day and times will be included in the forthcoming event brochure, which will be sent to all current INCOSE UK members.

Administration
1 day = £230, 2 day = £420
Overnight (dinner, bed & breakfast) = £100
Non-resident dinner on the Monday night = £35

Venue
Heythrop Park, Enstone, Chipping Norton, Oxfordshire, OX7 5UE United Kingdom
http://www.heythroppark.co.uk

All prices include lunch. Priced at the INCOSE member rate - Non-members will be charged an additional £72, providing the benefits of INCOSE membership for 12 months. See our web site www.incoseonline.org.uk for further details. All details were correct at time of printing and prices are inclusive of VAT.
Architectures
There are said to be more than 130 current international standards with the word ‘architecture’ in their abstract or title. Unfortunately, they exhibit little commonality in terminology and concepts relating to architectures and architecting. UK Chapter's Architecture Working Group has developed a ‘belief systems’ approach (presented at the 2008 INCOSE International Symposium in Utrecht) clarifying how architecture concepts and terminology are variously used across different communities of practice. The standards making bodies are now showing great interest in using the approach to throw some light on the ‘standards quagmire’. This session will explain the details of the approach and will include a discussion of the most recent draft of international standard ISO/IEC 42010.

Capability-based Systems Engineering
In a number of domains, acquisition and procurement are moving away from the explicit specification of a product or service. Instead, the emphasis is moving towards reflecting the problem space in more abstract terms such as capability, where the desired effect or output is expressed, rather than the mechanisms of achieving them. This session will address some of the Systems Engineering issues arising from this shift of emphasis. There will be speakers and presentations from all domains to provide a broad view of the activities being undertaken, the new techniques being developed and the impact upon the broader commercial and organisational issues required to resolve these more abstract situations.

Human Factors and its Integration with Systems Engineering
Human issues are crucial throughout the life of our Systems. For example, the Human dimension is a major driver of Through Life Cost and a major enabler of Capability, yet we very often fail to treat it adequately. Developments such as Agile Networks of Systems, Autonomous Systems and increasing automation offer the prospect of greatly enhanced capabilities but they also bring challenges to human decision-making, workload, safety etc. How can we help humans to cope with this complexity successfully, both in operations and in development? This session will give attendees an opportunity to hear the views of experts in the field and discuss with them and other delegates their own views on Human Factors and Systems Engineering.

Systems Engineering and Project Management
The fortunes of Systems Engineering and Project Management are inextricably linked for project success. It is critically important to understand how the relationship can deliver a super compliant system that delights stakeholders - delivered to time and budget. This session will explore best practice through a combination of ‘master class’ and interactive workshop styles covering: understanding the real reasons why projects fail, the importance of project strategy and the keys to life-cycle success. Delegates will be invited to interact, share ideas and debate the issues. The outcome at the end of the session will be the Top Ten ‘best practice’ ideas to take back to the workplace.

Systems Engineering for In-Service Systems
At the 2007 Autumn Assembly it was agreed that the principles of systems engineering were the same whether building a new system or sustaining one that was in service. One important outcome was that existing Systems Engineering guidance should and could be improved to support the in-service phase. A working group has been convened to characterise the difficulties encountered in practice in applying authoritative guidance on in-service systems and to identify good practice to overcome these difficulties. This session will report on the working group’s findings and recommendations and give delegates an opportunity to comment on the work to date, share experiences in the area and influence the direction of future work.

Test, Evaluation and Putting-to-Service
The recent opening of Heathrow Terminal 5 gave a graphic illustration of the consequences of imperfect test, evaluation and putting-to-service. However, it is easy to be wise after the event. As system engineers, do we understand how to evaluate, test and commission complex and interactive systems? This workshop will focus on a critical phase in the system lifecycle: the interface between development and deployment. It will concentrate on ‘validation’ evaluation and test - the hard part compared with the complicated, but well-established verification processes that demonstrate specification compliance. It will also explore how information from these activities can develop operating manuals and optimise operating procedures to increase the effectiveness and efficiency of deployment and to minimise residual risks.

The Professionalisation of Systems Engineering
This session will explain the current status of and the next step in the Professionalisation agenda for Systems Engineering in the UK. We will report on the outcome of a workshop held in May 2008, which was hosted by the Royal Academy of Engineering and involved the INCOSE Corporate Certification team, the IET, IM&C and Engineering Council UK. During the session panellists will be invited to give a range of perspectives on their desired routes and outcomes, and the audience will be given the opportunity to hear and influence the debate and inject their worldviews, requirements and constraints into the process.

Using Requirements Tracing to create an Assurance Case
Few systems are developed today that do not require demonstrable assurance. Some useful approaches have been developed for specific disciplines, such as the case for safety, but this is often carried out alongside development as a separate activity. This session will develop the theme that it is time to build the concept of progressive assurance for all aspects of a system into the heart of the development process. Using pre-prepared examples, this session will present an approach to using requirements tracing as a focus for the collection of rationale and evidence, providing the progressive construction of a system assurance case. This approach is sometimes known as Evidence-based or Assurance-based development.