In This Issue...

INCOSE UK Elections
What is happening at ASEC 2021
ePreview Feature

Equality, Diversity and Inclusion: A Personal Perspective

By Matthew David
In this issue...

Page 3
We announce our new Outreach Director, Stuart Jobbins.

Pages 4 - 5
A countdown to ASEC 2021.

Pages 6 - 7
Deputy UKAB Chair Matthew David gives us a personal perspective on Equality, Diversity and Inclusion.

Page 8
Further updates about the Endorsed Training Provider Event in January 2022.

Page 9
Hillary Sillitto took some time to take part in our regular “I’m A Systems Engineer and I do” feature.

Pages 10-12
An overview of Certification, Professional Registration and Professional Development.

Page 14
Derek Price, Chair of the UK Advisory Board, gives us an update on recent UKAB activities.

Pages 15-18
An overview of the recent INCOSE UK Automotive Interest Group joint seminar with The Institution of Engineering Technology.

Pages 18-19
A look at the HS2 initiative.

Page 20
Tomorrow’s Engineers Week and This is Engineering Day are due to take place in November.

Page 21
INCOSE UK publication news.

INCOSE UK Elections
Outreach Director - Stuart Jobbins

INCOSE UK are pleased to announce that Stuart Jobbins has been elected as the incoming Outreach Director. Stuart will begin his role after the official announcement at the INCOSE UK AGM.

Stuart’s candidate statement can be read below.

I am used to representing my current company’s, and previous employers’, interests technically, socially, academically and commercially at all levels, internationally.

I have previously held positions on IET council, have held senior roles setting strategy and direction, leading and managing large teams, whilst reporting to large organisation main boards. I have held many positions of influence on industrial advisory boards to academia (including chair of national and international stakeholders in some cases) and on technical forums, such as standards committees and leadership councils, particularly in embedded systems, for not-for-profit organisations (again as member and chair in some cases) and voluntary associations.

I am a Fellow of the IET, a Senior Member of the IEEE as well as Member of INCOSE and a Chartered Engineer. I also act as a Professional Registration Advisor for the IET. I have previously been a visiting professor to the University of Essex’s School of Computer Science and Electronic Engineering and notably supporter of its Embedded and Intelligent Systems Research Laboratory.

I run my own successful consultancy business in Systems, Safety and Software Engineering where I frequently provide direct engineering consultancy that often includes customer board level influence that helps set customer business strategy with respect to engineering systems and products.

I have deep technical knowledge built of 40 years experience across many industries including Defence, Communications, Aerospace, Nuclear, Automotive, Marine and Healthcare.

I am co-author of several papers on Large Scale Systems, System Engineering Complexity and have delivered conference presentations internationally on Engineering in many forms, from skills and competency, novel product architectures and product-line solutions.

I am interested in this position in being able to further the understanding and need for more rigorous approaches to System Engineering, with emphasis on greater adoption by smaller organisations, better recognition as a competency and a profession in industrial groups, greater industrial application in academia and better recognition and standing in other professional organisations.

I would also appreciate an opportunity to help set direction and promote INCOSE UK as a more widely recognised and aspirational professional institution, valuable to its members.

INCOSE UK Annual General Meeting

INCOSE UK’s Annual General Meeting (AGM) will be held in the main lecture hall at Leeds Royal Armouries Museum on at 08.30am on Tuesday 24th November 2021, prior to Day Two of ASEC.

The AGM is open to all INCOSE UK members, and not just paying attendees of ASEC 2021.
Date: 23rd & 24th November
Location: Royal Armouries Museum, Leeds
Book now: www.asec2021.org.uk

#ASEC2021UK

More information about the event including COVID-19 guidance can be found on the event website: www.asec2021.org.uk
Having just returned from a belated Summer holiday to a mountain of Emails including an invitation to write an article about Equality, Diversity and Inclusion (EDI) within the space of one week left me with a big dilemma. At first I thought there was no way that I could write something with enough thought or diligence within that timescale, especially as I’d want to have it thoroughly reviewed by a diverse set of people. On the other hand, with National Inclusion Week (on 27th Sep) and the opportunity to contribute to a topic that I’m passionate about, I thought the best I could do was blog about my EDI journey from an entirely personal perspective.

Thinking back to the beginning of my engineering career (28 years ago) working in male dominated environments, I now realise that I unconsciously benefited from the privilege of being male. I recall one situation when I was collaboratively working with a well known company in the US, that the marketing director organised a team building exercise one evening that involved driving off-road in 4x4 vehicles and then meeting for drinks in a strip club. I remember at the time feeling very uncomfortable about joining-in, especially as my manager (whom I held in high regard) told me that he would make people afraid to share their thoughts, “treading on egg shells” so to speak, but I was firmly told that this was better than being accused of bullying or harassment.

About 10 years later, our organisation started to recognise the importance of Systems Engineering (SE), and I volunteered to be in the first professional cadre. An essential activity in establishing the SE profession was using the INCOSE UK competencies to tailor our set of competencies for career and pay progression. It didn’t occur to me at the time that our merit-based assessment system might be compromised by the cognitive bias of those involved in performing the assessments.

When the first EDI Affinity Groups were established some years later, I wasn’t initially sure how to engage with them. I felt guilty about supporting the racial equality group because as a middle-aged straight bachelor who’d never had a girlfriend, I was afraid that others might mistake my sexual preferences. As for the gender equality group, I couldn’t think of anything that I could possibly offer to help women.

A few years later, two significant things happened to me that would completely change my thinking and allow me to truly begin my EDI journey. The first was being taught about cognitive bias and the second was the introduction of the term Equality Ally. Learning about my cognitive bias explained a lot of the poor judgements that I’d made about the different preferences and values of others, which were based on my own narrow life experiences and flawed sensory perceptions. Labelled as an Equality Ally, I now felt comfortable supporting all the Affinity Groups as equally as I could.

Attending meetings and taking part in Affinity Group initiatives accelerated my understanding. I found the personal testimonies of others very moving, educational and thought provoking, particularly the purposeful creation of psychologically safe environments in which we could question and discuss very emotive topics with kindness and care towards each other. Thinking back to the EDI training all those years ago, and being asked to help deliver something progressive to our new entrants, I try to facilitate a discussion about how to get the balance between people being themselves and expressing themselves, while being respectful and sensitive to how others feel. I personally advocate consciously being kind and caring towards others to mitigate unintentional hurt. I also set myself a personal EDI objective every year so that I consciously continue my EDI journey.

I recently met the love of my life, who happened to be completely different to me in: gender, ethnicity, religion, nationality and language. Her perceptions and expressions are very different to mine and we often have to spend quite a lot of time understanding each other. I’m so grateful to have a life-partner that sees the world differently to me, because it helps to further mitigate my cognitive bias, and I wonder whether the younger (less mature) me would have valued devoting myself to someone so different.

Matthew David is the current Deputy UKAB Chair and has a passion for Equality, Diversity and Inclusion.

He is a principal systems engineer with twenty-seven years of telecommunications engineering experience spanning the public and private sector.
Endorsed Training Provider Scheme

Endorsed Training Provider Event

INCOSE UK are pleased to announce the next Endorsed Training Provider Event will be taking place on the 18th-20th January 2022. Location to be confirmed.

This event will be run by Burge Hughes Walsh Ltd, Scarecrow Consultants Ltd and SyntheSys. Their courses are summarised below.

Each course will run for 3 days with 8 - 15 delegates. The cost of the course, for each delegate, £960 + VAT for members and £1,200 + VAT for non-members. The booking system with full course details is now open. [Book your place here](#).

Further information can be found on the [website](#) or by email to: techserv@incoseuk.org.

A Model-Based Approach to Systems Engineering

This course is aimed at systems engineers, software engineers and managers, quality personnel and anyone involved with business or enterprise modelling and will bring many benefits. All course delegates receive a full set of notes, summary sheets and a copy of the book ‘SysML for Systems Engineering: A model-based approach; 3rd ed.’ by Jon Holt and Simon Perry.

Systems Engineering Fundamentals Course

This 3-day course focuses on the concepts, principles and practices of Systems Engineering to give attendees both an understanding and specific knowledge to apply Systems Engineering to the design of complex systems.

This course is derived from our most popular offering; the 5-day Systems Engineering course. The 5-day course is suited each client-company has been delivered to many of the world’s leading engineering companies.

Systems Engineering Foundation and Requirements Management

The Systems Engineering Foundation element of the training provides a high-level foundation to the principles and practices of systems engineering. The course content is aligned with the INCOSE Systems Engineering Handbook and provides an introduction and overview of the processes required for successful systems engineering delivery on projects.

The course will also shine a spotlight on Requirements Writing. The creation of accurate requirements, traceable across the systems engineering life cycle, is critical for successful projects, with associated verification and validation grounded against high quality requirements.

The Endorsed Training Provider scheme allows organisations who provide professional Systems Engineering related training courses to apply and be assessed in order to obtain the status of “INCOSE UK Endorsed Training Provider”. More information can be found on the [INCOSE UK website](#).

SE Spotlight

I’m A Systems Engineer and I do...

We asked Hillary Sillitto to take some time to take part in our regular “I’m A Systems Engineer and I do” feature.

In his article, Hillary mentions he didn’t choose to be a systems engineer, it just sort of happened.

Hillary started his working life as an optical engineer in the Laser Systems group Ferranti in Edinburgh. Progressively moving from optical engineering to optical system design and taking more of an interest in the higher level systems of which optics form part, Hillary found his job titles started including the word ‘system’. Later, moving to Pilkington Optronics (now Thales) with a remit to help the company move up the system value chain, Hillary thought he’d better find out a bit more about systems. He began going to professional meetings and conferences, heard, and was inspired by, Derek Hitchins (founder president of INCOSE UK) and then got involved with INCOSE to see what value it could bring to his employers.

Hillary has had a rich and varied career within Systems Engineering which he covers in the “I’m A Systems Engineer and I do” feature which can be found on the [INCOSE UK website](#).
**Professional Registration**

**Call for Professional Registration Advisors and Assessors**

INCOSE UK are seeking experienced members who hold professional registration to become involved in the professional registration programme.

Our licensed status and online sessions are attracting a lot of interest from existing and future members who require support with their applications. This ranges from those who are early on in their journey and don’t know where to begin, to applicants requiring a final review prior to submission – and everything in between.

Perhaps you already operate as an advisor in your workplace or undertake an assessor role for another institute? If you would like to support INCOSE UK in one of these volunteer roles, please contact us on profdev@incoseuk.org for more details.

**What’s in it for you?**

**Give Back**
- Obtain personal satisfaction by making a difference in the career development of next generation of INCOSE UK registrants. Give back to the industry and the institutions that helped you gain your expertise and reach success. Mentoring is an empowering experience that impacts both mentors and mentees and contributes to the development of both.

**Expand your own professional network**
- The opportunity to work with and support members from diverse backgrounds and with a wide range of talents. Broaden your network and gain a fresh new perspective.

**Develop your own continuing professional development (CPD)**
- This role provides scope to further develop and become involved in the professional registration assessment and interviewing teams on behalf of INCOSE UK. An excellent opportunity for development which contributes to your own CPD.

**CEng Case Study - Andrew Bryden**

Andrew works for HS2 as Requirements and V&V Manager for Area Central. HS2 is a mix of civil engineering, station assets and utilities diversions all provided by organisations with different or even zero experience of Systems Engineering. Andrew says “It’s surprising how many ways there can be in interpreting plans, processes, and instructions. Consistency is a challenge when not all “speak” the same systems engineering “language” or have similar experiences”.

Andrew says his achievement and reward since joining two years ago has been an improvement in quality and consistency of work that a longer-term relationship can bring.

Andrew has recently become a CEng through INCOSE UK and agreed to take part in a case study regarding this process.

You can read Andrew’s full Case Study [here](#).

**For more information about achieving certification through INCOSE UK, please visit the INCOSE UK website.**

**Certification**

**Professional Development Online Sessions**

In order to provide information and guidance, we have set up a series of interactive Professional Development Zoom sessions. These sessions are open to all and there is no requirement to be a member in order to attend. The following sessions are available to book.

**Professional Registration Webinar (UK Spec v4)**
- **15 December 2021**

Our regular INCOSE UK overview of professional registration covering how to apply and answering your questions on the process. Includes input from our assessor team and a recent INCOSE UK applicants.

10 November 2021 - C/D/E Competences Clinic

In this session we will be focusing on the UKSPEC C,D & E competences and how systems engineers should look to map their experience to these when applying for professional registration. The session will be an open forum which includes input from the INCOSE UK assessment team.

To book a place for you or a colleague, please send us an email.

**SEP Exam - 20th January 2022**

The booking system for the SEP Exam on Thursday 20th January 2022 will be open from Monday 1st November 2021.

In order to gain ASEP or CSEP accreditation it is necessary for INCOSE UK members to pass the certification knowledge examination.

INCOSE UK are offering their members the opportunity to sit a paper version of this exam, which is based on the INCOSE Systems Engineering Handbook v4 and consists of 100 multiple choice questions.

Candidates will have 100 minutes to complete the examination and extra time can be allowed for those members who meet certain qualifying criteria.

Membership of INCOSE UK is mandatory for anyone wishing to register for and sit the examination.

Those candidates who achieve a successful outcome must then for apply ASEP or CSEP, via the INCOSE UK online application process, in order to receive their accreditation. This attracts an additional fee.

For more general information and cost on the Certification Process with INCOSE UK download our U1- guide to Professional Certification [HERE](#).
We would like to congratulate the following members who have attained ASEP, CSEP and ESEP since the last ePreview. Members listed have given their consent to be published.

Are you interested in becoming a Certification Application Reviewer (CAR)? We are looking for members who have already gained CSEP or ESEP accreditation to support in the review of new CSEP Applications with INCOSE UK. You will be part of a team for each review you undertake, and each review should generally take no more than a couple of hours of your time. Full training will be given. This is a volunteer role, however, your involvement will not only support other systems engineers in gaining certification, but would be a valuable component in your own Continuing Professional Development. For more information or to register your interest please contact profdev@incoseuk.org

**CSEP Case Study - Tom Westbury**

Tom is a Model Based Systems Engineer at QinetiQ where he provides SysML modelling and architecture support to projects as well as MBSE training support and tools selection. In a previous role Tom developed a model-based process for logical architecture and system requirements and authored the internal requirements writing standard.

Tom says the most enjoyable things about being a systems engineer is the buzz you get when you help find an elegant solution to a complex problem or find an intuitive means of explaining an unintuitive concept.

Tom has recently become a CSEP through INCOSE UK and kindly agreed to take part in a case study.

You can read Tom’s full Case Study here.

---

**Top 6 traits that can elevate your career in Systems Engineering**

By Chris Lamb, Managing Director of Optima Systems Consultancy

As the post-pandemic recovery continues to gain momentum and job vacancies are on the rise, the key challenge for us employers is to find the right candidates to fill the roles.

For many of you, there has never been a better time to reflect on your current job and to explore what opportunities could be available for your career path. Have you thought about how you will respond when opportunity knocks — and how can you prepare for success once it does?

There are many routes through a worthwhile and rewarding career in systems engineering. Thinking about the potential steps on the way and the order they could take gives you options you can develop towards so when a suitable prospect appears you are ready for it.

As an employer who’s been interviewing a great number of engineers over the years, I think that there are several distinctive traits beyond technical expertise that can really set you apart from other candidates:

1. **Seeing the whole picture**
   At Optima we always looking for systems engineers who can comprehensively understand the bigger picture; the system and the context within which it exists. It’s important to resist driving straight to the detail and focussing on breaking down a problem into its constituent parts.

2. **Inquisitiveness and curiosity over judgement**
   Keep asking “So what?” to understand the details, unearth and identify the fundamental aspects of a problem which allows effort to be focused on the things that really matter.

3. **Excellent communicator**
   Learn to present problems, ideas and solutions, often visually, in such a way that creates understanding and enables collaborative progress. You need to be able to tailor your communication to the audience across all levels and across all disciplines.

4. **Courage over comfort**
   Don’t be afraid of change and be prepared to challenge the orthodoxy. Be adaptable, looking at problems from different perspectives and consider alternative approaches to the “way it has always been done”.

5. **Keeps eyes on the prize**
   Make sure you can understand and articulate what the destination looks like and can guide those around you, quietly and confidently, to move in the right direction.

6. **Can handle imposter syndrome**
   Can you get up to speed quickly and hold different perspectives and arguments? Gain the confidence to feel comfortable to propose alternatives in a pragmatic, constructive and appropriate way.

If you can clearly demonstrate these critical soft skills in conjunction with your knowledge and qualifications, then you will be in with a fighting chance for any job that you are qualified for.

To those of you open to a new career challenge, visit our current vacancies and get in touch for a chat! You can also follow us on LinkedIn.
What have we done this year? There is always some cross-systems angering and the leading role that INCOSE UK plays. We have 28 members of various sizes, spanning different business sectors, as well as Education and Training providers.

The benefits for organisations subscribing to the UKAB are:

- Demonstrates the organisation's commitment to the professional Systems Engineering within the UK to both staff and customers.
- Demonstrates the organisation's desire to advance the state of the art and recognition of the Systems Engineering discipline.
- Belonging to a group that can claim to represent the “voice of industry” as a sounding board for Government and Academia on Systems Engineering issues.
- Opportunity to influence Systems Engineering in the UK - state of the art, direction and structure - through INCOSE UK, the leading Systems Engineering body.
- Recognition of the organisation's commitment in INCOSE UK publications and at INCOSE UK events.
- Free copying and distribution rights to all INCOSE UK event proceedings and Working Group products within the organisation.
- Opportunity to share best practice and to tackle common issues collectively with other organisations practising Systems Engineering.
- One-to-one contact with key systems engineering points of contact within other organisations.

We have 28 members of various sizes, spanning different sectors, but with a common interest in the practice of systems engineering and the leading role that INCOSE UK plays.

What have we done this year? There is always some cross sector sharing every time we meet. Some specific issues that we have worked with the UK Council on include:

- Future virtual / hybrid models for INCOSE UK events
- Providing easier access to INCOSE UK resources for UKAB member employees
- Maintaining & improving INCOSE UK's online presence
- The value of the UK supported certification programme (ASEP, CSEP, ESEP)
- Helping the council find Apprenticeship End Point Assessors and Engineering Council Professional

How to join the UKAB

The UKAB provides a forum for UK Systems Engineering organisations (within industry, government and academia) to influence Systems Engineering in the UK, and to collaboratively improve and exploit Systems Engineering best practice via the activities of INCOSE UK.

Any UK Companies and institutions that practice and champion Systems Engineering in government and commercial business sectors, as well as Education and Training providers, will be considered for membership of the UKAB.

All organizations joining the UKAB sign a Memorandum of Understanding, an example of which you can download below.

Membership of INCOSE UK costs £2712 per annum + VAT and runs from 1st June to 31st May each year. It includes one individual INCOSE membership which should be allocated to the UKAB Member point of contact.

Documentation relating to UKAB membership can be found on the INCOSE UK website.

Applying Systems Engineering in Road Transport


Words by Stephen Powley, Matthew Clarke, John Kelly

A popular and well-received online seminar on Applying Systems Engineering in Road Transport was held on 14 September 2021 by The Institution of Engineering and Technology (IET) Automotive and Road Transport Systems (ARTS) Technical Network (TN) in partnership with the INCOSE UK Automotive Interest Group.

This pioneering event explored how Systems Engineering (SE) is well placed to help automotive and road transport systems (ARTS) providers address contemporary mobility challenges. Speakers from the automotive and road transport sectors were joined by practising systems engineers and those who wanted to learn more about SE. Delegates enjoyed half of day of high-quality presentations, breakout discussions, opinion polls and a panel discussion, with the aim of developing cross-industry relationships and ideas to guide future development of the discipline.

The seminar was pioneering in a number of ways. Firstly, it was the first joint event between INCOSE UK and The IET to focus on this sector, and a strong working relationship was built both behind the scenes and on the day. Secondly, it was the first IET Technical Network event to make full use of the discussion opportunities offered by online breakout rooms, with the goal of gathering ideas that may influence future policy within the IET and hopefully UK government. Last, but by no means least, this was, to the best of the organisers’ knowledge, the first event of its kind to bring together leading voices from the automotive and road transport sectors to discuss the importance of SE for the future of interconnected vehicle/infrastructure systems of systems.

Human society is increasingly reliant on complex, networked systems in our vehicles and on the road. Vehicles have rapidly incorporated new technologies such as electric powertrains and advanced driver assistance in the last few years, and there is huge investment aiming to develop full-autonomous driving in the near future. Meanwhile, the road environment they operate in is also quickly evolving to improve traffic management and address environmental concerns.

Most vehicles now include connections to the world around them, creating ad hoc systems of systems with roadside infrastructure, personal devices, car parks, energy networks and more. The benefits include greater convenience, reduced accidents, less pollution and new mobility opportunities for previously excluded parts of society.

Our ability to comprehend the emergent properties of the resulting system of systems is falling to keep pace with the technology, resulting in ever-changing, increasingly chaotic networks. Systems Engineering offers a way to manage this complexity, but is not currently widely adopted in the road transport industry (particularly highways). It is important to establish a roadmap for deployment and develop joined-up road transport systems that are smarter, cheaper, cleaner, safer, and more secure.

Stephen Powley (PhD Researcher in Automotive Cybersecurity, Coventry University), who is an active member of both the IET and INCOSE UK groups, chaired
the event and introduced seven speakers. They shared insights on the increasing adoption of SE in this domain and considered how approaches can be tailored to the specific needs of road transport.

In the first segment, covering roads and infrastructure, Darren Capes (Intelligent Transport Systems Policy Lead at Department for Transport and Chair of IET Transport Policy Panel) spoke about the future of connected and urban traffic management systems and current initiatives to ready UK roads for the coming of connected and autonomous vehicles. Andy Fisher (Connected and Autonomous Vehicles Team Leader at National Highways) then shared the National Highways strategic plan 2020-2025, for enabling connected and automated mobility through two-way communication between roadside infrastructure and in-car devices.

INCOSE UK was out in force in the automotive segment, with talks from Automotive Interest Group past chair, Neil Sinclair (Independent Systems Engineering & PLM consultant at System Forge Ltd.), and active member Iain Cunningham (Technical Specialist - System Design and Diagnostics at Vector GB Ltd.). Neil spoke about the current automotive challenges being faced by the industry due to the growing complexity of vehicles and the role that Model Based Systems Engineering (MBSE) can play in addressing these. Iain continued the MBSE theme, with a deeper dive into how a concrete data model can help ensure that the work of systems engineers is translated correctly into vehicle components.

In the final segment, three speakers explored the systems of systems problem of vehicles operating in their environment. Pete James (Director/Technical Specialist at Lyra Electronics Ltd.) kicked off with a case study of electric vehicle charging. Alex Mouzakis (Head of Vehicle Engineering, Infotainment and Connectivity at Department for Transport and Chair of IET Transport Policy Panel) spoke about the future of connected and green vehicles. Matthew Clarke (Independent Consultant, Transport Technology; Past Chair of IET ARTS Executive Team), who shared his personal experience of deploying major highways projects and identified lessons learnt from successes and failures from a systems engineering perspective.

Throughout the day, delegates were asked to vote on the aspects of systems engineering that they felt were most relevant to the three segment themes (road/automotive/combined). Each participant was asked to select the three options they felt were most important in each case. The figure shows the results.

Breakout sessions in small groups were a key feature of the day. Run as facilitated discussions, these allowed delegates to share their own insights and were well received, with participants welcoming the change from the usual online format of end-to-end listening. To bring focus, and provide a jumping off point, case studies were considered by the participants. These looked at Hazardous Load Detection & Management for tunnels and Green Light Optimized Speed Advisory (GLOSA), a system that allows vehicle drivers to receive upcoming traffic signal cycle information. Many ideas were generated, providing insights into systems engineering issues from multiple perspectives.

Some common themes emerged, including:

- Unclear ownership of:
  - system of systems level emergent behaviours
  - vehicle–infrastructure interfaces

- Too much focus on solutions without clearly identifying the problem to be solved, meaning:
  - lots of complexity being added without appropriate resilience engineering
  - vehicles still need to be self-sufficient without reliance on external interfaces.

- Competition in the automotive domain prevents collaboration on future functionality (which constrains generation of standards)

- SE adds value by bringing together stakeholder perspectives

For example, it was considered that a desirable function may be that traffic lights could inform a nearby vehicle prior to changing from green to red, or vice versa. This would enable the vehicle to slow earlier on approach, resulting in less stop-start traffic, lower vehicle emissions (including brake dust), improved safety and more. The challenge then becomes a question of who drives the implementation of the functionality (highway operators, automotive suppliers, transport service operators or regulators)? It is not directly in the vehicle manufacturers’ interest to solve network problems because benefits in fuel economy will not be seen on legally required drive cycles, nor can a manufacturer gain competitive advantage once the traffic light infrastructure is available to all.

The day’s findings were discussed in a lively closing panel discussion featuring several of the speakers. The panel agreed that it is clear from both the polling and the freeform discussions that cross-industry collaboration is the key factor that will enable the future of SE in automotive and road transport systems. This must be
HS2 launches major new initiative to share project insight with the wider industry

HS2 Ltd launched a major new initiative to share insight from Britain's largest construction project with the wider UK infrastructure industry that will see the publication of lessons learnt, good practice and innovation from across the project. The HS2 Learning Legacy project was formally launched at the Institution of Engineering and Technology (IET) in London at an event supported by the Major Projects Association (MPA) and Infrastructure and Projects Authority (IPA).

The first tranche of Learning Legacy material includes over 100 sources covering a range of topics including Design Engineering & Architecture; Environment, Digital Engineering; Health & Safety and Occupational Health & Wellbeing – and has been published on a dedicated website at - learninglegacy.hs2.org.uk

New learning legacy papers will be published every six months, including technical papers, case studies, videos and podcasts with professionals across the industry. HS2 is also partnering with industry to disseminate the learning through events and engagement as well as academia to share real life case studies with post graduate students.

The launch of the project builds on similar initiatives at London 2012, Crossrail and Thameslink London Bridge project – but HS2 will be the first project to start this early in the project lifecycle enabling the capture of learning from the early projects stages such as procurement, initiation, design and enabling works.

Launching the new initiative, HS2 Ltd Chief Executive Mark Thurston said, "Major projects like HS2 do not happen in isolation – we build on the experience and lessons learned from previous projects and rely on the wider industry to deliver. That’s why it's so important that we pay back and offer the next generation the same opportunities to learn from our experience.

“The launch of the HS2 Learning legacy project shows just how seriously we take that responsibility and I’d like to thank everyone who put time into sharing their insight and experience from across the design and early stages of the project.”

Today’s launch event at the IET featured a live panel discussion chaired by Andy Murray, executive director of the MPA, with Mark Thurston, CEO of HS2 Ltd providing the opening talk. They were joined by expert panellists Michael Dyke, MD of main works contractor Balfour Beatty VINCI and chair of the Safety, Health and Wellbeing Leadership Forum (SHWeLT), Rachel Skinner, President of the Institution of Civil Engineers (ICE), Tim Parker, Executive Director of Projects at the Sydney Metro and Fiona Spencer, Director of Function, Profession & Standards at the ITP. The event was also live streamed to a virtual audience.

Andy Murray, Executive Director of the Major Projects Association said, “The purpose of the Major Projects Association is to improve major projects by bringing together organisations to share experiences and ideas. This is why we support the HS2 Learning Legacy which provides a means to seek, capture and apply lessons through the life of the project and beyond, not just between HS2 and its immediate supply chain, but within and across the whole major projects supply chain too.”

“Whilst it is not the first learning legacy, it is the first one to be established at the beginning of the project and enables sharing between all the parties involved. I have no doubt it will prove invaluable for the initiation and delivery of future projects too.”

Fiona Spencer, Director of Function, Profession and Standards at the Infrastructure and Projects Authority, said:

“Learning from experience is one of our eight Principles for Project Success. So we’re delighted to support the HS2 Learning Legacy, as part of wider work across government and beyond to create a consistent culture of world class project performance: one where projects are consistently set up for success and deliver real benefits for people and communities across the UK.”

In order to ensure that that the information can benefit as much of the industry as possible, HS2 Ltd will also work with the following professional partners:

- Association for Project Management (APM)
- British Occupational Hygiene Society (BOHS)
- Chartered Institute of Building (CIOB)
- Institution of Civil Engineers (ICE)
- Institute of Occupational Medicine (IOM)
- Institution of Engineering and Technology (IET)
- International Council on Systems Engineering (INCOSE UK)
- Major Projects Association (MPA)
- Permanent Way Institute (PWI)
- Rail Industry Association (RIA)
- Royal Institute of British Architecture (RIBA)
- Society of Occupational Medicine (SOM)
- Supply Chain Sustainability School

All learning legacy papers and resources will be published on the website learninglegacy.hs2.org.uk which goes live today and two books of technical papers, published by ICE, will also be launched.
As in previous years, the ASEC 2021 Proceedings are available to pre-order when you book your place at ASEC 2021. Once published, the book will be sent to you after the event. The proceedings are the published papers of the INCOSE UK Annual Systems Engineering Conference and are the best papers of that year’s submissions to the event. Both the proceeding from 2018 and 2020 are still available to purchase from the INCOSE UK Online Store.

This is Engineering Day

This is Engineering Day will return for its third year on Wednesday 3rd November 2021. This is Engineering Day was set up two years ago to inspire the next generation to join the profession and to challenge the misconceptions of the profession being mechanical, too technical, boring or inaccessible.

In just two years, the day has achieved impressive results and has established itself as a nationwide initiative dedicated to raising awareness of the importance of engineering and celebrating the positive contribution engineers make to the world around us.

This year, This is Engineering Day coincides with the start of COP26: a pivotal moment in the world’s history to address climate change and carbon emissions. Three new films featuring engineers working on sustainability will be available from the 25 October on their YouTube channel.

Join in on the This is Engineering Day conversation on Twitter using #EngineerTheFuture, #ThisisEngineeringDay and @ThisisEng to show and celebrate how you and your organisation are engineering a sustainable future and to share your vision of what a 2050 net zero future looks like.

Think Engineer

Think Engineer is a children’s book that is designed to promote STEM (Science, Technology, Engineering and Mathematics) and in particular engineering to school children. The book was launched in November 2015 and is in its sixth year of publication.

The book is aimed at Key Stage 2 pupils (ages 7 - 11) and their parents and teachers to raise of awareness of engineering and is the perfect accompaniment to Tomorrow’s Engineers Week.

The book is written by Jon Holt (author of many books on Model-Based Systems Engineering (MBSE) and current Technical Director of INCOSE UK) and is beautifully illustrated by renowned artist Ian Simmons.

The book is written in simple rhymes and tells the story of two children, one of whom is considering her options at school. She is frustrated by the options that she faces but, never fear, the Engineer in the Hat is here! Join the Engineer in the Hat for a roller-coaster journey through engineering – “Engineering, we know, will not leave you snoring!”

The book is available from the INCOSE UK Online Store.

Engineering Community

Tomorrow’s Engineers Week

The ninth Tomorrow’s Engineers Week will take place from 8th to 12th November 2021. The annual celebration highlights to young people that engineering is a creative, problem solving, exciting career that improves the world around us.

With the 2021 edition of the week coinciding with the COP26 Climate Summit in Glasgow, Tomorrow’s Engineers Week will focus on demonstrating how engineering careers can contribute to tackling climate change and achieving net zero.

The Week will feature the first ever Tomorrow’s Engineers Week Schools COP where students from across the UK will come together to discuss the vital importance of achieving net zero and explore how engineers are at the heart of tackling climate crisis.

The event will also explore how the engineers and technicians behind technological and scientific breakthroughs will be at the heart of the world’s to climate change in the coming years.

INCOSE UK Publications

Think Engineer

INCOSE UK Publications

Think Engineer

This is Engineering Day

INCOSE UK Publications

This is Engineering Day

ASEC2021 Proceedings available for Pre-order

As in previous years, the ASEC 2021 Proceedings are available to pre-order when you book your place at ASEC 2021. Once published, the book will be sent to you after the event.

The proceedings are the published papers of the INCOSE UK Annual Systems Engineering Conference and are the best papers of that year’s submissions to the event.

Both the proceeding from 2018 and 2020 are still available to purchase from the INCOSE UK Online Store.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 Oct 21</td>
<td>MBSE Interest Group</td>
<td>Zoom meeting, <a href="#">For more information click here</a>.</td>
</tr>
<tr>
<td>28 - 29 Oct 21</td>
<td>EMEA Workshop 2021, Barcelo Sevilla, Spain</td>
<td>Further information regarding this year’s EMEA Workshop to follow.</td>
</tr>
<tr>
<td>31 Oct - 12 Nov 21</td>
<td>COP26</td>
<td><a href="#">COP26</a> is taking place in Glasgow, Scotland.</td>
</tr>
<tr>
<td>10 Nov 21</td>
<td>C/D/E Competences Clinic</td>
<td>Zoom Meeting, <a href="#">For more information click here</a>.</td>
</tr>
<tr>
<td>23 - 24 Nov 21</td>
<td>ASEC 2021, Royal Armouries Museum, Leeds</td>
<td>The Annual Systems Engineering Conference is the UK’s premier Systems Engineering event, attracting a wide range of industry, academia and government professionals along with international presenters.</td>
</tr>
<tr>
<td>18 - 20 Jan 22</td>
<td>Endorsed Training Provider Event</td>
<td>Location to be announced.</td>
</tr>
<tr>
<td>02 Mar 22</td>
<td>Equality, Diversity and Inclusion Event</td>
<td>Further information regarding this event to follow.</td>
</tr>
</tbody>
</table>

**ADVERTISE WITH INCOSE UK**

INCOSE UK is a Professional Engineering Institute (PEI) focused on Systems Engineering. With over 1,000 members coming from diverse backgrounds covering purchasers, system developers and academics and representatives including aerospace, automotive, defence, transportation, communication and telecommunications, INCOSE UK is the best place to get your message across.

Please contact advertise@incoseuk.org for more information.