BURGE HUGHES WALSH

SYSTEMS ENGINEERING

1-day Systems Engineering Leaders Appreciation Workshop

Workshop Description

Systems Engineering is the systematic application of Systems Thinking to the design and introduction of new systems. Applied correctly Systems Engineering provides considerable strategic advantage to an organization by reducing introduction times, improving system performance and reducing through life costs. Its relevance is the only proven approach to handling risks associated with the creation of highly complex products and services. Good Systems Engineering demands a thorough understanding of the "customers" problem to ensure the selection of the correct solution. This drive towards understanding before solution is often at odds with project pressures and demands strong leadership to support a culture where Systems Engineering is enabled and expected.

The aim of the 1-day workshop is to provide engineering leaders, and leaders in adjacent disciplines, with sufficient understanding and specific knowledge to create and maintain a culture that expects and enables Systems Engineering.

Course Numbers and Who Should Attend?

The 1-day Systems Engineering Leaders Appreciation workshop can be delivered to up to 20 participants. The workshop is aimed at engineering leaders and also leaders from adjacent functions such as commercial, project management, manufacturing, operations, test and quality.

Benefits to the Individual and Business

During an intensive day of teaching and practical 'hands on' exercises, participants will be challenged to develop the mindset that can be applied to any system design irrespective of type, scale or context.

At the end of the workshop participants will:

- Have an understanding of the principles of Systems Engineering and how it applies to the creation of a new system through the appropriate blend of people, process and tools.
- Be provided with a common language and approach to addressing complexity.
- Understand the critical role of requirements in engineering.
- Have an appreciation of the process and tools that can be used to gather, analyse and specify system requirements.
- Have an appreciation of the process and tools that can be used to generate and down-select alternative system design concepts and architectures.
- Have an understanding of what a Systems Engineering culture looks like and be able to consider the impact on future business of adopting a systems approach to engineering

Learning Approach

The learning approach is based on the Kolb learning cycle with a proportion of the workshop set aside for exercises to reinforce the learning. Indeed, many of the small group exercises involve a case study that provides a practical focus for the workshop and enables the delegates to practise the methodology and tools presented.

Workshop Agenda

Time	Session	Outcomes
0830	Introduction and Objectives	Participants know the aims and objectives
0845	What is Systems Engineering?	Participants: • understand the concept of emergence as a key driver of System Engineering • know the causes of undesirable emergent behaviour and the need for a systems approach to engineering and how it differs from traditional engineering
0930	An Introduction to Systems Thinking	Participants: • have had explained the concepts of Systems Thinking • understand and appreciate the importance of key systems properties of: purpose, context, boundary and environment
1045	Systems Engineering in Practice	Participants: • recognise the key ingredients to Systems Engineering as People, Process, Tools and Infrastructure • understand that Systems Engineering is a fractal top-down process • understand the engineering lifecycle and governance through design and other reviews
1300	Determine System Requirements	Participants: • know the purpose of the Determine System Requirements phase • know the key process steps and what type of tools are appropriate • realise the common and specific features of requirements • understand the importance of system functionality as a system invariant
1415	Create System Concept	Participants: • know the purpose of the Create System Concept Phase • know the key process steps and what type of tools are appropriate • know how to use system functionality to explore architectural and technological alternatives
1500	Design System	Participants: • appreciate the next steps in Systems Engineering and how it aligns with Robust Design and Subsystem Specification
1545	Verify System	Participants: • appreciate the purpose and role of verification and validation in Systems Engineering
1615	What is a Systems Engineering Culture?	Participants: • understand culture in terms of behaviours • develop and agree behaviours that support Systems Engineering
1700	Summary and close	Participants are able to support Systems Engineering activity

Workshop Costs

This workshop is specifically aimed at the leadership of an organization and in consequence is facilitated by a Lead Consultant from BHW. The cost of delivering the 1-day workshop, excluding delivery tutor accommodation and expenses but including all courseware is £3,050. VAT will apply at the prevailing rate. The workshop can be tailored to suit individual customer's operations.

BURGE HUGHES WALSH

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ENDORSED TRAINING PROVIDER

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