

One Size Doesn't Fit All - But How to Tailor Effectively?

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Abstract. The panel will bring together practitioners from a range of sectors to examine practical issues with tailoring the Systems Engineering approach, particularly when this approach is not explicit, embedded, or customary. Our panelists will contend that while SE is a proven approach to complex systems problems, barriers remain for its uptake, and that a thoughtful and transparent approach to tailoring its application is necessary to meet the requirements of our customers: in short we must learn to Systems Engineer the approach to Systems Engineering. SE tailoring must be cognizant of the environment within which the system is found. The panel will examine how different industry issues and cultures are driving the approach to tailoring: healthcare is driven by patient safety and quality and transportation historically is oriented toward the lowest-cost solution to capital projects and delivering the project schedule. The panel will examine tailoring from the perspective of the program manager: the importance of good tailoring will be examined through the lens of the perceived *_cost_* or *_overhead_* of doing Systems Engineering versus the meaningful benefits that can be unlocked. Benefits such as reduction in risk, cost overruns and shortened acceptance cycles. The panel will also make the case that Systems Engineering could be well served by returning, at least in part, to its conceptual roots and exploring more simplistic, targeted ways to meet customer needs. That is, adopting a pragmatic approach to Systems Engineering is a crucial aspect to tailoring. Ultimately, the panel will assert that tailoring is a critical component of the Systems Engineers toolkit; however, tailoring must be done carefully and by experienced practitioners to avoid pitfalls. As programs come under increased pressure to produce more results with less, identifying and applying the aspects of SE most likely to yield benefit will become ever more important.

Biography

Richard Beasley (Rolls Royce) - richard.beasley@rolls-royce.com

Richard Beasley graduated with a Physics Degree from Bristol University in 1986, and then joined Rolls-Royce as an engineer. He spent 14 years in Installation Aerodynamics for Military Engines, during which time he gained an MSC in Gas Turbine Engineering from Cranfield University. He then worked on Life Cycle Cost, Reliability and aspects of designing products for Aftermarket / Service. Richard is currently the Global Chief of Systems Engineering, which includes being corporate skill owner for Systems Engineering in Rolls-Royce, and in 2011 was made a Rolls-Royce Associate Fellow in Systems Engineering. He is a member of the UK INCOSE chapter, has chaired the Bristol Local Group in the UK chapter, and is President-elect for the UK INCOSE Chapter (assuming presidency in November 2014). He is a Chartered Engineer, Fellow of the Royal Aeronautical Society, and a Visiting Fellow to the Systems Centre at Bristol University. In addition to authoring multiple INCOSE papers, Richard contributed as a panellist on a highly rated IS2011 panel exploring the contribution of SE soft skills on systems success.

Chris Unger (GE Healthcare) - Christopher.Unger@med.ge.com

Chris Unger graduated with a B.S. in Mathematics and B.S. in Philosophy from M.I.T. and a Ph.D. in Physics from Boston University. He has worked as a systems engineer in the defense and medical fields for 28 years, and is an expert in systems engineering and medical imaging. Previously, Chris served as the GE Healthcare lead system designer for programs in Computed Tomography (CT) and Interventional Systems, and has been Chief Engineer for the CT, XRay, and Imaging Subsystems businesses. He has been manager of engineering units in CT and XRay detectors. He is a certified Master Black Belt and has eight issued patents and seven

patents applied for. Chris is currently the Technical Design Review Technology Manager for GE Healthcare. He is currently responsible for the design of the engineering quality system for GE Healthcare, including the lifecycle from requirements, through design, and to engineering, with a special focus on the system engineering process. He is a member of the Chicagoland chapter of INCOSE and advisor to the INCOSE Biomedical WG.

Kerry Lunney (Thales Australia) - Kerry.Lunney@thalesgroup.com.au

Kerry Lunney has extensive experience developing and delivering large system solutions, including design, software development, infrastructure implementation, hardware deployments, integration, sell-off, training and on-going support. She has worked in various industries including ICT, Gaming, Financial, Transport, Aerospace and Defence, both in Australia and overseas. The systems delivered include combat systems, mission systems, communication systems, road and rail ITSs, flight simulators, security systems and gaming systems. Kerry is a Technical Director and Chief Engineer in Thales Australia. In this role she provides technical leadership and governance on bids and projects and participates on the Technical Board of Thales Australia. Recent roles include Chief Systems Engineer, Solutions Architect and Design Authority. She is currently on special assignment leading an international technical design team. Kerry is a member of IEEE, a Fellow Member of Engineers Australia, is a Chartered Professional Engineer, holds the Expert Systems Engineering Professional (ESEP) qualification from the International Council of Systems Engineering (INCOSE) and was recently a past-National President of the Systems Engineering Society of Australia (SESA) (now part of INCOSE). She has also held various roles on conference committees including the Symposium Chair for the INCOSE 2001 Symposium held in Melbourne, Australia.

Derek Price (Network Rail) - Derek.Price@networkrail.co.uk

Derek Price has been a member of INCOSE for 11 years, was a founding member of the INCOSE UK Rail Group, and is a member of the Capability Engineering and Transportation Working Groups. He is Principal Programme Engineer (Systems Engineering) for Network Rail's Thameslink Programme, which will more than double passenger capacity on one of Europe's busiest stretches of railway - the Thameslink route from north to south through central London - benefiting tens of thousands of passengers daily. Derek has 25 years experience in the application of systems engineering, value and risk management to major infrastructure projects, and safety critical system assurance, approvals and acceptance. Gained across transport, power and defence industries; with foundations in telecommunications research and development. He has worked on both sides of the fence as well as sitting on it - suppliers, consultancy, approvers/regulators, owners, operators. He has acted as a technical specialist, project manager, and business unit manager with profit and loss accountability. Derek has a BSc(hons) in Electrical & Electronic Engineering, A Master of Philosophy (Mphil) for a telecommunications R&D project, and is a Member of the Institute of Engineering Technology.

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R. Douglas Hamelin is a Systems Engineering Specialist and Technical Writer for the Idaho National Laboratory Systems Engineering Department. Doug is trained in requirements management and computer-aided decision support, contributes to a wide range of Systems Engineering applications as a requirements and functional analyst, and supports numerous DOE projects and publications as a document specialist. He served as member of the editorial team that produced the INCOSE Systems Engineering Handbook v3.2 and played a significant role in its being submitted for consideration as an ISO/IEC Technical Report. His contribution resulted in his being one of seven recipients of the INCOSE Outstanding Service Award for 2010. He is currently serving as the INCOSE Snake River Chapter President and as a member of the INCOSE Systems Engineering Handbook v4 project core team. Doug is an Adjunct Faculty member with the Brigham Young University-Idaho Division of Continuing Education where he has taught Advanced Writing, Technical Communication, and Critical Thinking for nearly 20 years. He is also actively involved in his area's BSA National Youth Training Program, where he serves as mentor, coach, and curriculum development specialist. He helped develop and implement a university-accredited, fundamental systems engineering training course entitled Applying Systems Engineering in the DOE Environment for the University of Idaho, and has presented at various business and professional meetings, including INCOSE IS2010 and IS2011..