

Common Language for Systems Practitioners: Why not!?

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Abstract. Most of the panel participants met and worked together for a week at the IFSR _Conversation_ in Linz, Austria in April 2012. Chartered to develop a _common language for systems praxis_, they discovered that the scope of _systems praxis_ was not agreed upon or even obvious, and the many disparate systems communities were _divided by a common language_, using the same words to denote quite different concepts. The Systems Praxis Framework was the eventual outcome of the collaboration that started at the Linz _Conversation_. It is a major and highly significant effort to: (1) map out the whole universe of discourse of systems practice, systems thinking and systems science; (2) show how theory could support practice and how practice can improve theory; (3) provide a properly grounded basis for a unifying set of concepts; and (4) enable development of a common language for the systems community. The participants each approached the task from a different perspective, and worked together successfully to achieve a synergistic outcome none of them anticipated. Now that this work has been done and published, the question is: _What next?_ So that we do not succumb to groupthink, the panel includes people who care deeply about the subject who were not with us in Linz. The audience can expect a lively and vigorous discussion, with much common ground but diverse views on the best way forward, matching the diverse backgrounds of the participants and enhanced by the new perspectives of the audience.

Biography

Hillary Sillitto (Thales UK) - hillary.sillitto@blueyonder.co.uk

Hillary Sillitto is a Thales Fellow and represents Thales UK on the Thales Group Systems Engineering Board. He graduated in Physics from St Andrews University in 1976, and started his career in Edinburgh as an optical engineer. He moved to Thales Optronics in Glasgow in 1993, and subsequently held appointments as Chief Systems Engineer and Chief Engineer. Seconded to Thales UK Corporate in 2003-4 as Engineering Director Prime Contract Support, he made important inputs into major bids and programmes in several domains, and led the development of the Systems Engineering part of the Thales Prime Contract Management Handbook. From 2005 to 2008 he was seconded to UK MOD as head of the Integration Authority, responsible for managing system-of-systems interoperability across the whole scope of the MOD's acquisition programme and promoting the development of systems engineering skills and culture in the acquisition organisation. In 2011-12 he was Systems Engineering Director of Thales UK. A frequent presenter at INCOSE conferences, he has been a member of INCOSE since 1996, was elected an INCOSE Fellow in 2009, certified an ESEP in February 2010, and was an INCOSE-nominated BKCASE author.

Janet Singer (ISSS) - jmsinger@measures.org

Janet Singer is an independent systems researcher and VP for Research and Publications at the International Society for the Systems Sciences (ISSS). For over two decades, her research has focused on foundational issues in the development of technology and culture to support trans- and inter-disciplinary integration in the systems communities. Her academic background spans the Humanities and Social Sciences in addition to Mathematics, Statistics, Engineering-Economic Systems, and Technology and Information Management. In 2012 she was an author on the BKCASE Guide to the SE Body of Knowledge (SEBOK) project.

James Martin (The Aerospace Corporation) - MartinQZX@gmail.com

James Martin is an enterprise architect and systems engineer affiliated with The Aerospace Corporation developing solutions for information systems and space systems. He is a key author on the BKCASE project in development of the SE Body of Knowledge (SEBOK). Dr. Martin led the working group responsible for developing ANSI/EIA 632, a US national standard that defines the processes for engineering a system. He previously worked for Raytheon Systems Company as a lead systems engineer and architect on airborne and satellite communications networks. He has also worked at AT&T Bell Labs on wireless telecommunications products and underwater fiber optic transmission products. His book, Systems Engineering Guidebook, was published by CRC Press in 1996. Dr. Martin is an INCOSE Fellow and for eight years was leader of the Standards Technical Committee. He received from INCOSE the Founders Award for his long and distinguished achievements in the field.

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Harold W. _Bud_ Lawson has been active in the computing and systems arena since 1958. Received the Bachelor of Science degree from Temple University, Philadelphia, Pennsylvania and the PhD degree from the Royal Technical University, Stockholm, Sweden. Contributed to several pioneering efforts in hardware and software technologies at Univac, IBM, Standard Computer Corporation, and Datasab. Permanent and visiting professorial appointments at several universities. Currently, Honorary Professor in the Swedish Graduate School of Computer Science and Academic Fellow in the School of Systems and Enterprises at Stevens Institute of Technology, Hoboken, NJ. Fellow of the Association for Computing Machinery, Fellow and Life Member of the IEEE, Fellow of the International Council on Systems Engineering. Chairman (1999-2000) Technical Committee on the Engineering of Computer-Based Systems. Head of the Swedish Delegation to ISO/IEC JTC1 SC7 WG7 (1996-2004) and elected architect of the ISO/IEC 15288 standard. In 2000, he received the prestigious IEEE Computer Pioneer Charles Babbage medal award for his 1964-65 invention of the pointer variable concept for programming languages. Harold Lawson is an independent consultant operating his own company Lawson Konsult AB and is, as well, a consulting partner of Syntell AB, Stockholm.

Duane Hybertson (The MITRE Corporation) - dhyberts@mitre.org

Duane Hybertson is a researcher and member of the technical staff at the MITRE Corporation in McLean, Virginia. He has a broad background in software and systems engineering, including architecture, modeling, patterns, service orientation, security, foundations of systems, complex systems, and enterprise engineering. He is applying these systems engineering principles and practices to a variety of projects with MITRE's government sponsors. Dr. Hybertson has also conducted research and published in the areas of foundations of architecture, security patterns, rapid system acquisition methods, and applying models of systems science and complex systems to systems engineering. He was an editor and co-author of the book Security Patterns: Integrating Security and Systems Engineering that was published by Wiley in 2006. He authored a book on future directions of systems engineering, entitled Model Oriented Systems Engineering Science: A Unifying Framework for Traditional and Complex Systems, published in 2009 by Auerbach Publications. In 2012 he was an author on the BKCASE project in development of the SE Body of Knowledge (SEBOK).

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Jack Ring has 55 years experience in the design, engineering and adaptation of systems spanning government, industrial, commercial, and education domains and ranging from real time control systems to national-scale information clearinghouses to autocatalytic types of human activity systems. From this unique spectrum of pragmatic learning opportunities he has distilled and vetted ideas for engaging diverse individuals in knowledge exchange and choice making scenarios for various classes and types of systems. A target metric is a ten-fold reduction of cost and time relative to current system engineering projects. One focal point relevant to this panel is the conceptualization of _system engineering_ as a co-learning and co-evolution praxis that converges on exemplary results for developers, end users, and sponsors as well as personal growth by the designers. Rather than presuming a _one size fits all_ standardized solution one opportunity is the unification of the languages and mental models that each brings to a project.

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Richard Martin is President of Tinwisle Corporation in Bloomington, Indiana, USA, where he manages and provides services focused on enterprise integration to companies in the manufacturing, distribution, and services sectors. Mr. Martin is a senior member of the Society of Manufacturing Engineers, and member of IEEE, ACM, and INCOSE. He participates in an active research program to formalize the frameworks now in use for the management of model-based artifacts created in the course of enterprise operations. His professional activities include participation in the USTAG of ISO TC184/SC5 as WG1 Convener and he is currently the ISO 15704 revision editor and ISO 19450 OPM PAS editor. He is the INCOSE Delegate to the Federation of Enterprise Architecture Professional Organizations where he serves on the Taxonomy WG and co-chairs the Governance WG. His public service includes appointment to the Plan Commission of Monroe County, Indiana, where he participates in decision-making concerning land use and infrastructure development

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Joseph Kasser has been a practicing systems engineer more than 40 years and an academic for about 16 years. He is a Fellow of the Institution of Engineering and Technology (IET), an INCOSE Fellow, the author of 'A Framework for Understanding Systems Engineering' and 'Applying Total Quality Management to Systems Engineering' and many INCOSE symposia papers. He has received a number of awards for performing and directing systems engineering including NASA's Manned Space Flight Awareness Award (Silver Snoopy). He holds a Doctor of Science in Engineering Management from The George Washington University. He is a Certified Manager and holds a Certified Membership of the Association for Learning Technology. He also started and served as the inaugural president of INCOSE Australia and served as a Region VI Representative to the INCOSE Member Board. He gave up his positions as a Deputy Director and DSTO Associate Research Professor at the Systems Engineering and Evaluation Centre (SEEC) at the University of South Australia in early 2007 to move to the UK to develop the world's first immersion course in systems engineering as a Leverhulme Visiting Professor at Cranfield University. He is currently a Visiting Associate Professor at the National University of Singapore.