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When

November 16th from 11am-12pm EST

Topic

The Role of Academia in System Engineering

Speaker

Dr. Alex Both

Abstract

The presentation is based on the first of a series of papers designed to address how a holistic approach to systems engineering can address the issue of escalating product development cost. This paper looks at how academia can provide the necessary systems engineering training to empower young engineers to become effective system developers within the realm of the systems engineering process.

Review of undergraduate engineering school curricula reveals that only a few address the topic of Systems Engineering. At the graduate level there are several schools offering Systems Engineering degrees and certificates but most are geared towards

experienced engineers that want to transition from engineering into management. What is also apparent is a lack of understanding within academia as to what exactly Systems Engineering is about.

This paper takes a holistic view at the Systems Engineering process. This is key to understanding the roles and responsibilities (R&R) that engineers and in particular systems engineers play in this process. Based on those R&R the paper identifies four distinct paths for engineers to follow as graduate students: technical, managerial, research and entrepreneurial. The last two paths are actually not addressed by any of the engineering schools that were surveyed.

The paper concludes that academia is not adequately preparing students that may enter industries engaged in the development of complex systems. It may be up to INCOSE to help academia in the development of the necessary curricula that can assist engineering students to become effective participants in complex Systems Engineering environments.

Biography

Dr. Alex Both has worked for more than 35 years in the aviation industry in various engineering and program management positions dealing with complex avionics systems. His educational background is in flight controls but during his career he has worked on numerous research and development programs spanning the avionics spectrum from inflight entertainment to GPS-based autoland systems and integrated modular avionics.

Dr. Both has a keen interest in the cost effective development of complex systems and has worked with suppliers and OEMs in exploring ways to manage cost, schedule and performance objectives. His mission is to translate his lesson learned into an educational roadmap that can empower young engineers to enter the work force with the necessary knowhow and skills to excel as systems engineers, technical leaders and entrepreneurs.

Dr. Both has a Master in Aerospace for the Technical University in Delft, The Netherlands, a Doctor of Engineering degree for the University of Kansas, also in Aerospace and an MBA from Seattle University.



Dr. Alex Both

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Regards,

Andy Pickard

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