

System of Systems Engineering Collaborators Information Exchange (SoSECIE)

September 20th, 2022
11:00 a.m. to Noon Eastern Time

Some Hard Problems in SoSE, and a few Potential Solutions *Presenter: Dr. Daniel DeLaurentis, Purdue University*

Abstract

A System-of-Systems (SoS) is a special kind of complex system in which new capabilities arise from interacting components that are controlled with varying degrees of independence by multiple owner / operators. Sounds cool! But doing SoS Engineering (SoSE) creates a bunch of hard problems, especially in building effective modeling and simulation and decision-support tools. This talk will present a few of these hard problems that the speaker sees occurring more and more in different application domains. Next, a glimpse of some *potential* solutions to these hard problems are summarized, derived from recent research conducted by multi-institution collaborations. The talk will end with yet more questions that arise from this research, as a means to spur discussion on what other solutions are lurking and what might be consensus on important next steps as a community.

Biography

Dr. Daniel DeLaurentis is professor in Purdue University's School of Aeronautics and Astronautics, where he also directs the Center for Integrated Systems in Aerospace (CISA). His primary research and teaching interests include problem formulation, modeling, design and system engineering methods for aerospace systems and systems-of-systems. Also, as the Chief Scientist of the U.S. DoD's Systems Engineering Research Center (SERC) UARC, DeLaurentis works to understand the systems engineering research needs of the defense community (primarily) and translate that to research projects among the SERC network of universities. He is Fellow of the International Council on Systems Engineering (INCOSE) and Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA).

