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SYSTEMS ENGINEERING**

**System of Systems Engineering
Collaborators Information Exchange (SoSECIE)**

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Synthesizing and Specifying Architectures for System of Systems

***Dr. C. Robert Kenley
Purdue University***

Abstract

Based on our experience with defining and evaluating system of systems and architectures using agent-based modeling, we describe the steps that we have employed in the context of a well-known process for defining system architectures and identify which steps of the process capture the unique characteristics of a system of systems. We describe a particular method that we developed to automate the generation of the communications links needed for executable simulation models when evaluating a large architectural design space, and we review model-based systems engineering methods that are applicable to specifying systems of systems and that support developing executable agent-based simulation models.

Biography

Dr. C. Robert Kenley is an Associate Professor of Engineering Practice in the School of Industrial Engineering at Purdue University. He has over thirty years' experience in industry, academia, and government as a practitioner, consultant, and researcher in systems engineering. He has published papers on systems requirements, technology readiness assessment and forecasting, Bayes nets, applied meteorology, and the impacts of nuclear power plants on employment.