# System of Systems Engineering Collaborators Information Exchange (SoSECIE)

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#### Analysis of Interoperability to Support Mission-Oriented SoS

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#### Abstract

This webinar presents and demonstrates an architecture-centric interoperability analysis method for system-of-systems (SoS). The method analyzes both the operational and technical interoperability of a SoS. We demonstrate the method by analyzing the interoperability of a SoS composed of unmanned ground and air vehicles for a notional search and rescue mission. Completion of the interoperability analysis leads to the specification of interoperability requirements on the system. We conducted field experiments with actual equipment to verify the ability of the interoperability analysis method to identify and expose interoperability challenges and to define interoperability requirements. Our work contributes an interoperability analysis method, which programs can use to identify and specify interoperability requirements based on an analysis of the architectural products available in the early phases of a program.

#### Biography

Dr. Ronald E. Giachetti, is the Chair and Professor of Systems Engineering at the Naval Postgraduate School (NPS) in Monterey, California. He teaches and conducts research in the design of enterprise systems, systems modeling, and system architecture. He has published over 50 technical articles on these topics including a textbook on the Design of Enterprise Systems: Theory, Methods, and Architecture. At the Naval Postgraduate School he leads the systems engineering department consisting of 45 faculty and staff serving 450 students in resident and distance learning programs. As chair he also represents the Department on the Systems Engineering Stakeholder’s Group consisting of the Navy’s chief systems engineers, and he is a Corporate Advisory Board member of INCOSE. He is internationally known for his work in enterprise systems, having lectured in Austria, Czech Republic, Colombia, Peru, Mexico and other countries. Prior to joining NPS, he was an Associate Professor of Industrial and Systems Engineering at Florida International University in Miami, FL. He earned a Ph.D. in Industrial Engineering from North Carolina State University in Raleigh, NC, a MS in Manufacturing Engineering from Polytechnic University in Brooklyn, NY, and a BS in Mechanical Engineering from Rensselaer Polytechnic Institute in Troy, NY.