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MBSE with/out Simulation: State of the Art and Way Forward

**Thursday, 9 April 2020
11:00 am - 12:00 pm ET**

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The limitations of model-based support for engineering complex systems include limited capability to develop multifaceted models, as well as their analysis with robust reliable simulation engines. Lack of such Modeling and Simulation (M&S) infrastructure leads to knowledge gaps in engineering such complex systems and these gaps appear as epistemological emergent behaviors. In response, an initiative is underway to bring Model-Based Systems Engineering (MBSE) closer together with model-based simulation developments. M&S represents a core capability and is needed to address today's complex, adaptive, systems of systems engineering challenges. This talk will consider the problems raised by MBSE taken as a modeling activity without the support of full strength integrated simulation capability and the potential for, and possible forms of, closer integration between the two streams. An example of a system engineering application, an unmanned vehicle fleet providing emergency ambulance service, will be examined as an application of the kind of multifaceted M&S methodology required to effectively deal with such systems.