



System of Systems Engineering Collaborators Information Exchange (SoSECIE)

**July 13, 2010
11:00 AM to Noon EDT**

Systems Engineering Artifacts for SoS

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Abstract:

The system of systems (SoS) systems engineering (SE) community is evolving SE processes to better apply SE to broadly defined SoS capabilities which span multiple systems. The knowledge from these efforts includes a greater awareness of SoS characteristics which create SE challenges, a recognition that some activities are unique to SoS SE, and ways to better employ fundamental SE processes in an SoS environment. Building on this knowledge, a United States (US) team is identifying key SoS SE artifacts (work products) and applying them to SE of SoS. The focus is on the critical information included in the artifacts rather than the documents. The objective is to develop a common set of concrete approaches to applying SE to SoS by understanding SE artifacts developed and used in SoS SE today. This brief describes system of systems (SoS) systems engineering (SE) artifacts, compares and contrasts them with similar ones developed and used for individual systems, and explains how they are used to guide SoS engineering processes. The brief concludes with next steps for using SoS artifacts to continue maturing the understanding of SoS SE in an international cooperative effort with the United Kingdom, Australia, and Canada.

Biography:

Dr. Judith Dahmann is a principal senior scientist in the MITRE Corporation Center for Acquisition and Systems Analysis supporting the Director of Systems Engineering within the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, where she is the technical lead for systems engineering (SE) for systems of systems and for early SE. She led the development of the "DoD Guide for Systems Engineering of Systems of Systems." Prior to this, Dr. Dahmann was the Chief Scientist for the Defense Modeling and Simulation Office for the US Director of Defense Research and Engineering (1995-2000) where she led the development of the High Level Architecture, a general-purpose distributed software architecture for simulations, now an IEEE Standard (IEEE 1516). Dr. Dahmann holds a Bachelor's Degree from Chatham College in Pittsburgh, PA with a year as a special student at Dartmouth College, a Master's Degree from The University of Chicago and a Doctorate from Johns Hopkins University.