



OFFICE OF THE DEPUTY ASSISTANT SECRETARY OF DEFENSE SYSTEMS ENGINEERING

System of Systems Engineering Collaborators Information Exchange (SoSECIE)

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Performance Prediction and Methodology for Monitoring Participating Acquisition Program Managers (PARMs) in a SoS Development

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Abstract

Today's acquisition environment is cost constrained and extremely dynamic. The System of Systems (SoS) construct is attractive as it leverages multiple Participating Acquisition Program Managers (PARMs) efforts and reduces technical risk as commercial-off-the-shelf/government-off-the-shelf (COTS/GOTS) technologies can easily be integrated and removed from the SoS framework when technologies become obsolete. However, the traditional performance prediction and monitoring tools (TPMs, MOEs, MOPs, etc.) were developed to monitor independent system development. We find that these technical monitoring tools are insufficient as systems become increasing intertwined and intended to operate as a system within a SoS. The Littoral Combat Ship (LCS) Mission Modules (MM) is classified as an 'acknowledged' SoS, which has recognized objectives, a designated manager, and resources for the SoS. However, the constituent mission systems retain their independent ownership, objectives, funding, and development and sustainment approaches. Changes in the constituent systems are based on collaboration between PMS 420 (the SoS manager) and the PARM (the constituent system manager). This complicates the task of a SoS manager who must navigate the evolving plans and development priorities of the SoS constituent systems, along with their asynchronous development schedules, to plan and orchestrate evolution of the SoS toward ultimately meeting the SoS performance objectives. The process that the LCS MM program office (PEO LMW/ PMS 420) has developed to monitor the technical performance of its constituent PARMs will be reviewed. Additionally lessons learned from applying these tools and processes within the context of an acknowledged SoS will be presented.

Biography

Ms. Carly Jackson is a Systems Engineer at Space and Naval Warfare (SPAWAR) Systems Center Pacific. She currently supports the Principal APM for Systems Engineering, Integration, and Test and Evaluation at the Littoral Combat Ship Mission Module Program office. She is primarily tasked with the implementation of product and process commonality across complex System's of Systems and Systems Engineering preparations for the impending Milestone B. Ms. Jackson earned simultaneous B.S. and M.S. degrees in Mechanical Engineering from UCLA in 2002 and an M.B.A in Business Administration from Pepperdine University in 2007. She is Level III certified by DAU in SPRDE-Systems Engineering and Level II certified in Program Management and Test and Evaluation.

Richard Volkert is the ISR Departments Lead Systems Engineer at the SPAWAR Systems Center Pacific and the PMS 420 Deputy for SE Processes. Mr. Volkert has over 27 years of service in the government, including 20 years as an active duty Naval officer with service as a engineering duty officer and in submarines. Over 19 years of that time has been involved in the fields of research, development, acquisition, and systems engineering. He possesses degrees in aerospace engineering and acoustical engineering and is presently enrolled in a Ph.D. program for systems engineering at Southern Methodist University.