System of Systems Engineering Collaborators Information Exchange (SoSECIE)

Tuesday, September 16, 2014
11:00 a.m. to Noon Eastern Time

Always on Demand: Supporting the Development, Test, and Training of Operational Networks & Net-Centric Systems

Dr. Nancy Bucher, ASA(ALT) System of Systems Engineering & Integration
Dr. Christina Bouwens, MSCI

Abstract
Individual efforts to address Operational Networks that are being done in a stove-pipe manner provide limited and /or inconsistent data and feedback about Operational Networks, impacting leadership decision-making. Network Integration Evaluation (NIE) efforts attempt to integrate and evaluate capabilities but on a limited level due to expense of live systems, live system availability, Soldier and troop unit availability, and time consuming stand up and tear down processes. What is missing is the use of readily available authoritative Network models, data, representative architectures, and live-virtual-constructive systems integrated into a representative realistic and relevant Operational Context for use in the test and evaluation of Network Modernization capabilities and gaps.

There is a critical need for an authoritative, persistent, integrated capability, to be available on demand, for analysis, research, design, test, evaluation, training and experimentation in support of Operational Networks and Net-Centric Systems The purpose of this presentation is to describe the ongoing efforts in the "Always On – On Demand" effort, initiated out of ASA (ALT) SoSE&I. The effort consists of prototype development, integration, and execution in NIE 14.1 and 14.2, as well as longer term program planning for transforming the way the Army uses distributed live-virtual-constructive environments to provide efficient and cost effective means for creating realistic and relevant Operational contexts for use in analysis, research, design, test, evaluation, training and experimentation in support of Operational Networks and Net-Centric Systems.

Biography
Dr. Nancy M. Bucher is currently leading the ASA(ALT) System of Systems Engineering and Integration (SoSE&I) Directorate's initiative "Always On-On Demand". ASA(ALT) SoSE&I has identified a critical need for an authoritative persistent integrated environment for analysis, research, design, test, evaluation, training and experimentation on operational networks and network enabled systems. Dr. Bucher is also the ASA(ALT) SoSE&I modeling and simulation (M&S) lead for the Army's Programs of Record. In this capacity, she assists the programs in the execution of the requirements of AR 70-1 by creating and fostering a PEO/PM Acquisition M&S community; identifying and maintaining a knowledgebase of resident M&S capabilities; identifying and communicating potential technical solutions to PM M&S issues; providing collaborative assistance in mitigating M&S gaps; and providing subject matter expertise to PMs in assuring M&S planning is adequately documented. Dr. Bucher is also the Lead for Battlespace Integration Technologies initiatives at her home organization, the U.S. Army Aviation & Missile Research, Development, and Engineering Center (AMRDEC). In addition to her current duties, Dr. Bucher is the US Army Science and Technology representative on the OSD Test Resources Management Center (TRMC) Networked Systems Testing Broad Agency Announcement Working Group

Dr. Christina Bouwens is the Chief Technologist for MSCI where she supports system of systems engineering analysis and architecture development for ASA(ALT) SoSE&I Always On – On Demand Initiative. Before coming to MSCI, she spent 18 years at SAIC / Leidos supporting simulation systems engineering, distributed simulation development, high performance computing and more recently, cloud-based simulation initiatives. Her research interests include system of systems architectures, architecture frameworks, and analysis of emergent behaviors in distributed systems of systems. Christina has a BS in Mathematics from Geneva College, an MS in Mathematical Science and a Ph.D. in Industrial Engineering from the University of Central Florida.