Solving the Digital Engineering Information Exchange Challenge

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Abstract. As more organizations and disciplines move toward a model-based engineering (MBE) approach, there is a growing need to share, cross-reference, integrate, reuse, and extend models to digitally represent a total system model. Industries and governments have a long history of using a document-based engineering exchange approach; they must now convert to model-based digital artifacts with their currently disjointed use of models. This panel discussion will focus on the challenges of digital artifact exchange, and key concepts and steps to facilitate exchange between disiplines and stakeholders throughtout the engineering lifecycle.

Biography

Terri Chan (Boeing Commercial Airplanes)
Terri is a Sr. Systems Engineer in the Boeing Commercial Airplane Product Development organization, focusing on Architecture Integration across the lifecycle with dynamic functional modeling. She has over twenty years of experience, beginning at JPL on the Cassini: Mission to Saturn program and future network architecture integrator of the Air Force Satellite Control Network. Terri has worked across the product lifecycle on military programs from conceptual design through integration/testing and operations. She has also consulted executive leadership as a competitive intelligence analyst, where the benchmarking of model capabilities for the enterprise played a pivotal role in the current MBE transformation strategy.
Position Paper
Terri Chan is the moderator. Terri works on the commercial side of the Aerospace and Defense Industry, bringing an operation and sustainment perspective rather than product development.

Philomena Zimmerman (US DoD)
Ms. Philomena (Phil) Zimmerman is the Director for Engineering Tools and Environments within the Department of Defense Office of the Deputy Director for Engineering. Her portfolio includes Digital Engineering, Engineering Infrastructure, Chief Information Officer collaboration, and model and simulation technical leadership. She supports elements of the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) related to policy, practice, and workforce development, as well as the R&E use of digital practices. She has a bachelor of science in Mathematics from St. John Fisher College, with an emphasis in Computer Science from Rochester Institute of Technology. She is DAWIA Level 3 certified in Engineering and Test and Evaluation.
Position Paper
Phil Zimmerman presents the challenges in implementing Digital Information Exchange from a Acquisition point of view (DoD).

Celia Tseng (Raytheon)
Celia is a systems engineer with 16 years of experience in missile defense, radar systems and command and control systems. She has a masters degree in systems engineering from Cornell University (2004) and is a certified systems engineering professional (INCOSE CSEP), certified system modeling professional (OMG OCSMP), and certified agile scrum master (SAFe). Celia had experience throughout the development lifecycle in the capacity of system qualification lead, system IPT lead, systems modeling lead, and cost account manager. Celia is also co-chair of the joint INCOSE/ NDIA Digital Engineering Information Exchange Working group and work across industries on MBSE adoption best practices. She is currently a systems engineer in Raytheon Technologies.
Position Paper
Celia Tseng discusses the need for standards to enable Digital Engineering Information Exchange. Discuss current applicable standards and gaps.

Sean McGervey (John Hopkins University Applied Physics Laboratory)

Sean McGervey is a Systems Engineer at the Johns Hopkins University Applied Physics Laboratory, where he was Architecture Lead on a Major Defense Acquisition Program (ACAT-1) for the US Navy and is a key contributor to efforts supporting the Digital Engineering Transformation of APL's DoD Sponsors. Sean founded and leads the APL MBSE Community of Practice, teaches three courses in MBSE at APL, and teaches an "Applied Analytics for MBSE" course for JHU's graduate program in Systems Engineering. Sean is also Chairperson of the INCOSE Digital Engineering Information Exchange Working Group (DEIXWG), a key element of the broader effort to drive forward OSD's Digital Engineering initiative. Prior to joining APL, Sean worked for 15 years in the Systems Engineering Department at Northrop Grumman Mission Systems in Baltimore, Maryland. While there, Sean practiced MBSE on multiple programs and founded the Northrop Grumman Corporate Model-Based Engineering (MBE) Community of Practice.

Position Paper

Sean McGervey addresses the lessons learned from the DEIX challenge, insights and future work. Focus is on stakeholder need analysis for information exchange pain points.

Tamara Hambrick (Northrop Grumman)

Tamara Hambrick serves as Systems Engineering Control director within the Systems Engineering and Integration Integrated Product Team of GBSD for the Strategic Deterrent Systems Division of Northrop Grumman Space Systems. In this role, Hambrick is responsible for leading engineers and managers in the implementation of model-based systems engineering for architecture models, integration approach, readiness assessments, and product quality metrics development and monitoring.Hambrick is a leader in driving technical innovation, influencing change and developing the next generation of thought leaders, advocates and practitioners in model based systems engineering for the last 15 years. She has held model-based advisory and IPT leadership roles for radar, open electronic warfare, avionics, cyber, space, and missile defense programs.Hambrick holds a bachelor's degree in engineering science from Pennsylvania State University, as well as a master's certificate in systems engineering from Johns Hopkins University, and a graduate certificate in architecture and systems engineering from Massachusetts Institute of Technology.

Position Paper

Tamara Hambrick discusses the Digital Viewpoint Model as a framework for defining Digital Engineering Information Exchange. Discuss why DE exchange is still a challenge for user and industry.