

# Minutes: 10-Apr-2019 NDIA Systems Engineering Division Meeting

## DATE:

April 10, 2019

## LOCATION:

Lockheed Martin, Global Vision Center, Washington, D.C.

## BRIEFINGS AND MATERIALS:

[http://www.ndia.org/Divisions/Divisions/SystemsEngineering/Pages/Past\\_Projects.aspx](http://www.ndia.org/Divisions/Divisions/SystemsEngineering/Pages/Past_Projects.aspx)

## ATTENDEES

Alex, Robert	Booz Allen Hamilton	Henry, Steve	DAU
Allsop, David	Boeing	Hurst, Kyle	USAF
Battle, Jay	USAF	Lee, Dona	OUSD(R&E)
Boleng, Jeff	OUSD(A&S)	Manas, Joe	Raytheon
Chesebrough, Dave	NDIA	Monje, Andy	OUSD(R&E)
Coolahan, Jim	Coolahan Assocs.	Moshinsky, Ed	Lockheed Martin
Dahmann, Judith	Mitre	Murphy, Thomas	Silver Bullet Solutions
Daly, John	Booz Allen Hamilton	Nidiffer, Ken	Software Engineering Inst.
Draper, Geoff	Harris	Ocker, Cory	Raytheon
Dunlap, Holly	Raytheon	Pagnanelli, Christi Gau	Boeing
Elm, Joseph	L3 Technologies	Scheurer, Bob	Boeing
Elmazaj, Esma	Harris	Schreiber, Chris	Lockheed Martin
Forbes, Sherman	SAF/AQRE	Shinko, Martin	Logistics Management Inst.
Gelosh, Don	Worcester Polytechnic	Theilin, Steve	Raytheon
Gill, Karen	Booz Allen Hamilton	White, Timothy	Raytheon
Griffin, Pat	Astronics		

## MINUTES

### **OUSD (R&E) Systems Engineering Update: Andy Monje, Acting Director, Systems Engineering, OUSD(R&D)**

- OSD reorganization still evolving, but clarifying.
- Strong focus on identifying technology needs and maturing the technology
- Change the way we do business – focus on modernization
  - Requires cross cutting Model Based Systems Engineering (MBSE) and Open Architecture
- SE cross-cutting initiatives: MBSE, modernization, etc. Real focus on modernization (technology, cycle time).
- Focus on speed of capabilities to the warfighter - OTA, materiel acquisition.
- R&E: Dr. Michael Griffin (USD R&E), Dr. Lisa Griffin (Deputy), Jim Faist.
- DoD technology priorities
  - Hypersonics
  - fully networked C2
  - machine learning
  - biotech
  - cyber
  - autonomy
- Mission engineering includes architecture design, architectural trade studies and performance measures.
- Engineering policy and guidance: DoDI 5000.02.
  - Comment from Jeff Boleng: complete rewrite, minimal requirements (tailor up, not down). Expecting something this Fall. “We can change the words all we want, but the bigger challenge is changing the behavior.” The overarching objective is speed.
- 15288 – Increasingly used in defense acquisition. CM – MIL-HDBK-61 and MIL 649-C are being updated. Real challenge is how to establish CM on programs and system of systems. Still struggling on how to do this in MBSE
- Specialty engineering – focus is on R&M – working to integrated into DFARS. Working on contract language. Mapping standards to IEEE 15288. Developing strategies to start transition to MBSE

- MBSE – it’s here, you are either on the bus or you’re left behind. Taking steps for transformation to a model-based environment, strategy to implementation. AIA conference on MBSE early May.
- HSI – steering committee. Capability-based assessment.
- Workforce – engineering, production, manufacturing, quality workforce. Using more industry methods to manage the workforce.
- INCOSE – working on a path for ASEP/CSEP certification through DAU.
- Digital engineering – strategy is done, focus on implementation. Phil Zimmerman involved in Mission Engineering. Section 870 report to Congress, IP, tech data access.
- Defense standardization – DSPO. Robin Brown, DMSMS. Counterfeit, expanded FAR reporting requirement. Additive manufacturing.
- Defense M&S office – manage M&S across the enterprise, standardization. 15288 process framework used to map standards, data, and handbooks to identify gaps.
- International outreach.
- DoD SERC – focus on major activities to drive velocity. Trust. SoS. Transforming SE into the future. ERS – Engineering Resilient Systems.
- Science and Tech Conference – Jim Faist. Get briefings. At S&T conference addressed TE and V&V and how to establish trust on autonomous systems
- Phil Zimmerman is hosting a sustainment data summit in Annapolis in Jun.

**OUSD (A&S): Jeff Boleng, Special Assistant for Software Acquisition**

- DoD and defense industrial base
- DOD SWAP study: accepted last Thu, delivered to Congress on May 3. Supportive of 10 recommendations. 4 major lines of effort: Restructure statutes, define Defense software pathway, digital infrastructure for DEVOPS, and change culture
- Speed, speed, speed. Flip the paradigm – SW is a more important component than HW, design our processes around that. It is a choice how to architect and emphasize a system.
- Statute, funding colors of money. DevSecOps capability. Workforce (Jose Gonzalez, human capital lead). Changing the culture. Require source code delivery for all non-COTS SW – for security, reliability; need to untangle source code from IP. “The government doesn’t want your IP – they want you to make lots of money from it so our costs are lower.”
- Industrial base will always be predominant for SW workforce – but DoD needs to build its own capabilities.

**Geoff Draper: Continuous Iterative Development Working Group Status Report**

- Providing industry perspective on addressing the seven recommendations of the Defense Science Board report on software development for defense systems (Feb-2018 report)
  1. Software Factory maturity as a source selection criterion
  2. Use of Continuous Iterative Development (CID) methods
  3. Program Risk Reduction via competitive prototyping and down-selects / CID Metrics
  4. Transition of Legacy systems to software factories and CID, when appropriate
  5. Workforce development to support modern software development methods
  6. Sustainment
  7. Machine Learning research
- Developed a detailed brief addressing the following topics for each recommendation
  - Assumptions
  - Picture of Success
  - Current State
  - Obstacles
  - Path Forward
- Developed an Executive Summary succinctly addressing the Picture of Success and the Path Forward.
- Current Status – both briefs completed, approved, and in-transit to OUSD(A&S) and OUSD(R&E).
- Both briefs will be posted on NDIA SE Division web pages.

### ACTION ITEM REVIEW:

- 2018-03: Collaboration on JFAC and Assurance. SSE collaboration ongoing w/ JFAC (SW, SSE, conferences). – CLOSED
- 2018-12: Autonomous Systems and SE Challenges – Serna, T&E, Roedler. – ON HOLD (possibly cancel)
- 2017-01: USAF Virtual Technical Reviews – Chris Schreiber: discussed in committee yesterday, coordinate with Col Abbott or alternative. Get committee approval, then executive committee approval.
- 2017-02 USAF develop engineering workforce – Don Gelosh: reaching out to government POCs, waiting on response.
- 2017-03 Industry ChEng visits to OSD – CLOSED. But add new action for cross-company engagement with Mr. Faist, on topic(s) to be defined, e.g., modernization, AI/machine learning. Is there interest in a forum w/ Chief Engineers?  
**NEW ACTION:** NDIA SED to consider a regular SE forum on technology topics of interest. SED (Joe, John, Holly) provide a written concept to Dona for socialization through R&E.
- 2017-04 USN Affordability workshop (Michael Doctor): NDIA SED (Steve Henry) to provide a summary of prior NDIA affordability workshop results and white paper to USN. Determine if additional follow-up is needed.
- 2017-05 JFAC Software Assurance workshop: Nidiffer/Daly – on hold pending discussion with Tom Hurt.
- 2017-06 IP/Data Rights: CLOSED – superseded by NDIA IP report already developed and submitted separately.
- 2017-07 Tool Interoperability workshops – CLOSED. Will be addressed in the call for papers for SE Conference.
- 2017-08 Liaise with DEXWG on DE deliverables – Schreiber: CLOSED
- 2017-07 NDIA HQ shared workspace – OPEN – Joe Elm still coordinating w/ NDIA.
- **NEW ACTION:** Develop a proposal on a study, workshop, or benchmarking to quantify the benefits/ROI for DevOps and MBSE. Brief concept at next NDIA meeting June '19.
- **NEW ACTION:** Consider M&S topics for NDIA SED meeting (model-based acquisition virtual technical reviews and source selection).

### COMMITTEE REPORTS:

- Architecture Committee (Bob Scheurer): 2019 focus on MOSA (requirements, standardization MOSA WG). See summary of MOSA white paper recommendations (strategy, implementation, 881D, architectures, DE strategy, cyber, DoD/industry collaboration, culture change, libraries).
- Automatic Test Committee: Patricia Griffin (Astronics). No open project at the moment. Last 2 cybersecurity discussions had no movement, due to IP concerns. Meeting held 3/26 at NDIA HQ. LXI (Securing Land-Based Instrumentation) TWG (Security Working Group). Provided recommendations for addressing LabView cyber security vulnerability from administrator password.
- Developmental Test & Engineering Committee (Joe Manas) – conduit for NDIA T&E Division. Annual conference next month. Coordinating with R&E DT&E prototyping director, and OT liaison for planning conference and initiatives. T&E Division committees: NDIA Industrial Committee on Test and Evaluation (ICOTE); Test Enterprise Coordination Committee; NDIA SED DT&E Committee. Annual NDIA Test and Evaluation Symposium (Q2). 2019 projects: Capability-Based Test & Evaluation (CBTE) Workshop (Apr 2019); Model-Based SE for Test, Agile/CBTE. T&E Conference agenda.
- Employee Safety & Occupational Health Committee (Sherman Forbes) – 2019 tasks: integrating ESOH into Digital Engineering MBSE, including AIA hazardous materials committee. Assess impact of DoD reorganization of Operational Safety to USD (P&R). ESOH committee meetings bi-monthly. ESOH track and NDIA SE Conference.
- Modeling & Simulation Committee (Chris Schreiber, David Allsop) – committee meeting 4/9/19; source selection using models; government progress toward model-based acquisition; Digital Viewpoint Information Exchange WG (DEIXWG, NDIA, government, INCOSE).
- System-of-Systems Committee (Judith Dahmann) – continuing regular SoS webinars, videos now available. Coordinating with other NDIA SED committees.
- System Security Engineering Committee (Holly Dunlap) – Cory Ocker co-chair. Adhering to 2019 priorities. Finalizing AF SSE Acquisition Guide. SSE meeting 4/10: deep dive on Software Assurance products (SEI PM Guidebook for Software Assurance and Developer's Handbook). INCOSE/NDIA SSE/Product Line Engineering Project Update (Beth Wilson). Anti-Tamper Cabal Industry Daft Critical Program Information Identification Guide – coming soon. NDIA/INCOSE/IEEE System Security Symposium, April 2020.
- Systems Engineering Effectiveness – Is it time to refresh the SE Effectiveness study report?

**NEXT MEETINGS:**

- 6 June; 8 Aug; 5 Dec.
- NDIA SE Conference: Oct 21-24, Tampa.