

**National Defense Industrial Association
Systems Engineering Division
Modeling and Simulation Committee**

**Prepared for the NDIA Systems
Engineering Division Meeting
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- **The mission of the NDIA SE M&S Committee is to advance the understanding and use of modeling and simulation in the practice of systems engineering**
- **2020 meetings (continue to be scheduled for the day before the NDIA SE Division meeting)**
 - 11 February (LM GVC – Crystal City)
 - 15 April (LM GVC – Crystal City)
 - 17 June (LM GVC – Crystal City)
 - <TBD> August workshop (LM GVC – Crystal City)
 - 19-22 October Conference
 - December Planning



- **2019 Systems & Mission Engineering Conference in Tampa, FL was extremely successful**
 - 3 concurrent tracks over 2 days of M&S Committee related content (MEGATRACK)
 - 2 MBSE and 1 Digital Engineering
 - ~70 presentations:
<https://www.ndia.org/events/2019/10/21/22nd-annual-systems-and-mission-engineering-conference/proceedings>
 - Conference proceedings:
<https://ndia.dtic.mil/2019/2019systems.html>

- **Chris Schreiber (LM)**
 - 2019 Applications
 - DEIXWG (joint INCOSE, OSD, NDIA effort)
 - MBAcq Workshop (NDIA, NAVAIR, Aerospace Corp.)
 - MBSE Survey (INCOSE, NDIA, et al.)
 - Continued MBSE + M&S topics
 - 2020 Plans
 - Continue DEIXWG work (DVM, standards)
 - MBAcq workshop (follow-on activity with NAVAIR?)
 - Digital integration “application” topics
 - MBSE
 - M&S/Analysis
 - OSD Sponsor wants more guidance on how to apply MBSE
 - Descriptive modeling practices
 - Use of MBSE
 - Request for MBSE “success stories”



DEIXWG Summary [Sean McGervey]

- The DEIXWG's Digital Viewpoint Model (DVM) development kicked off at the INCOSE IW to address issues related to well-defined, self-consistent exchange of Digital Artifacts and the Digital Views that represent them
- An aggressive DVM 2019 Roadmap drove outstanding contributions from the DVM Feature Teams in developing milestone-specific User Stories, Digital View specifications, and DVM Concept Model extensions
- The DEIXWG is working to release a DEIX Challenge at INCOSE IS 2020, with development of a Challenge "RFP" underway

MBSE Effectiveness Survey



Topics	Summary of Survey Questions
1. MBSE Usage	1. MBSE strategy documented at enterprise level 2. MBSE processes & tools integrated, inform enterprise staff 3. <i>Q: Primary value of cross-functional MBSE integration?</i>
2. Model Management	4. Taxonomy for modeling across organization 5. Well-defined processes/tools for model management. 6. Standard org guidance for model management/tools 7. <i>Q: Business value from consistent model management?</i>
3. Technical Management	8. Modeling basis for enterprise org processes 9. MBSE process support for technical reviews 10. <i>Q: Value of MBSE (or digital engrg) in technical reviews?</i>
4. Metrics	11. Modeling provides measurable improvement across projects 12. Consistent metrics across programs/enterprise? 13. <i>Q: Most useful metrics?</i>
5. Model Quality	14. Defined processes/tools for V&V of models 15. Defined processes/tools for data/model quality assurance
6. Data Management	16. Org approach for data interface between tools 17. Data managed independent of tools for portability 18. <i>Q: Data management roles/processes?</i>

Topics	Summary of Survey Questions
7. Model Sharing and Reuse	19. Teams establish, share, reuse org model libraries 20. Org interface around models for stakeholder use 21. Shared models used to consistently manage programs across lifecycle 22. <i>Q: org implementation for data/model discovery, reuse?</i>
8. Modeling Environments	23. Modeling environment security 24. Modeling environment protects IP 25. Cross-discipline processes for tools, data interoperability 26. <i>Q: value from collaborating on models across disciplines</i>
9. Organizational Implementation	27. <i>Q: most challenging org obstacles for MBSE?</i> 28. <i>Q: Best organizational enablers for MBSE?</i> 29. <i>Q: Biggest changes our org needs for MBSE?</i>
10. Workforce	30. Organization defined critical roles to support MBSE 31. <i>Q: Top MBSE roles in your organization?</i> 32. Org staffing adequate to fill MBSE-related roles?
11. MBSE Skills	33. Defined critical skills for MBSE 34. <i>Q: The most critical skills for MBSE?</i>
12. Demographics	Organizational size, domain, MBSE experience

Survey content is derived from the draft INCOSE Digital Engineering Capabilities Definition