

# NDIA Systems Engineering Division

## **M&S Committee** **Mission, Background and Objectives**

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# Mission

***Advance the understanding and use of modeling and simulation in the practice of systems engineering for DoD programs***

# Background

- **Gov't and industry consensus remains: M&S is a powerful, essential element for acquisition improvement**
- **For past 5 yrs, DoD & NDIA have prominently addressed M&S under the “Simulation Based Acquisition” rubric, with mixed results**
- **OSD leadership/advocacy of SBA has receded**
- **The discipline of systems engineering is maturing, but its process models and practices typically do not address M&S adequately**

# Challenge

- **DoD interest in NDIA M&S Committee helping carry M&S support to acquisition/logistics forward**
  - Ideas/activities are diffuse across gov't & industry and are largely associated with systems engineering
  - Desire for stronger industry role and an open forum
  - Supportive letter from Dr. Garber in Aug 02
- **Opportunity for a new approach**

# Objectives

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- 1. Identify high-value target applications of M&S to help systems engineering**
  - Where and how M&S can help, with specific examples, particularly from a systems of systems perspective**
  - Developed from own analysis, program successes, views of DoD leadership, etc.**
  - Inform system engineering community of benefits that can be attained, in a concrete (versus abstract) way**

# Objectives

2. **Contribute to definition of optimal systems engineering practices, mapping appropriate M&S use into:**
  - **Recognized System Engineering process standards**
    - **ISO/IEC 15288 System Life Cycle Processes**
    - **EIA 632 Processes for Engineering a System**
    - **IEEE 1220 Standard for Application and Management of the Systems Engineering Process**
  - **Emergent process/policy recommendations by NDIA SE Division, Test Community, others**
    - **E.g., Task Group on Systems Engineering in Evolutionary Acquisition, Top Five Systems Engineering Issues**
    - **Designate a representative to serve as a member of these, with M&S Committee to be rep's resource for developing solutions**

# Objectives

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3. **Identify, and seek to overcome, obstacles to effective use of M&S in system engineering for DoD systems**
  - **Understand state of the practice (successes, failures, obstacles)**
    - Harvest from own experiences, invited speakers, conference presentations, etc.
  - **Develop strategies to overcome**
  - **Periodically report to industry and DoD**
    - Progress, obstacles, strategies, recommendations

# Build a respected membership

- **Need experts at the intersection of SE and M&S**
- **Networking to identify and enlist best people**
- **Phone calls to key players known by committee**
- **Requests to SE Division principals to find good reps**
- **Letters to companies explaining committee's charter and benefits of participation**
- **Deliver value to participants**

# Consider full range of issues

## Enabler Categories for M&S-support to System Engineering

1. Policy and process
2. Standards
3. Authoritative information
4. Software tools
5. Secure networks
6. Business case
7. Educated workforce

# Summary

- **New approach to a critical challenge**
- **Systems engineering and M&S as an integrated process**
- **Industry in the leading role, with broad participation from DoD, academia, others**
- **Opportunity to make a profound difference**