M&S Leadership Summit – 11 Feb 2008

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Standard Form 298 (Rev. 8-98)
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The problem

• M&S is not realizing its potential for cost savings in DoD
  – Customers of M&S do not know how to employ M&S effectively
    • *Which* tools to use, *when* to use them, *how* to use them, *how* to get them.
  – Customers of M&S do not understand *risk* and *benefits* of using M&S

• Education can help drive wider acceptance and use
The approach

- Identify requirements using a wide set of stakeholders for focused initial audience
- Develop educational offerings using the best US university programs
- Make them widely available
  - Web
  - DAU CLMs
  - University Courses
  - Short courses
  - Public domain
- Track return on investment longitudinally
Our initial audience

Why start with Acquisition?
128,000 workforce members controlling over $150B/year*

Results to date

- Requirements identified and vetted
- Module and course syllabi developed and distributed
- Both requirements and syllabi available at https://diana.nps.edu/MSAcq
- Case studies to support courses developed and web-enabled
  - Ship Shock Case Study
P 14.1 Define the different methods by which a model or simulation can be reused. (To explain reuse methods, they include: reapplying the model “as is” in a similar application; federating the model as a federate to a simulation composability approaches; and integrating the model as source code with other models using standard software engineering practices.)

P 14.2 Given a model and a proposed reuse application for it, identify suitable methods to implement the reuse.

P 14.3 Classify proposed reuse applications of a model, data set, or simulation as appropriate or inappropriate based on modeling paradigm, level of resolution, and bounds of validity.

P 14.4 List current simulation interoperability protocol standards, interoperability frameworks and middleware libraries, and composability approaches that support reuse, and describe the advantages and disadvantages of each. Identify the assumptions behind a model, data set, or simulation, and determine how those assumptions affect the reuse of models, data sets, and simulations.

P 14.5 Identify the assumptions behind a model, data set, or simulation, and determine how those assumptions affect the reuse of models, data sets, and simulations.

P 14.6 List existing resources available for reuse, including model repositories, implemented federations, standalone simulations, and acquired and accredited data sets, and describe the procedures for searching for and accessing those resources within repositories of them.

P 14.7 List existing resources available for reuse, including both unauthenticated (for on-site examination) and authenticated (for off-site examination) resources. Identify the levels of conceptual interoperability possible between federated simulations, and describe the characteristics of those applications that made the reuse successful.

P 14.8 Identify the levels of conceptual interoperability possible between federated simulations, and describe the characteristics of those applications that made the reuse successful.

P 14.9 Identify the levels of conceptual interoperability possible between federated simulations, and describe the characteristics of those applications that made the reuse successful.

P 14.10 Identify the levels of conceptual interoperability possible between federated simulations, and describe the characteristics of those applications that made the reuse successful.

For a complete set of 2007 deliverables, please see: [https://diana.nps.edu/MSAcq/](https://diana.nps.edu/MSAcq/).
This year

- Develop and test the courses
- Develop web-delivered summary versions
- Develop CLMs for DAU
- Develop short course versions
- Develop assessment plan
- Publish “Program Manager’s Guide to M&S” Details
11 Courses planned for development

M&S in the Acquisition Life Cycle, Parts One and Two
M&S Strategy and Support Plans
M&S Requirements and Evaluating M&S Proposals
Contracting for M&S
M&S In Decision Risk Analysis and Mitigation
Best Practices in M&S
M&S Environments
M&S Data Strategies
M&S for Test and Evaluation, Introduction and Advanced
Physics-based M&S
Basic Engineering Concepts in M&S, parts 1 & 2
Topics in the Application of Engineering M&S

Four Certificate programs:

• M&S Management
  – Intro to DoD M&S
  – Modeling and Simulation in the Acquisition Life Cycle, Parts 1 & 2
  – Best Practices in M&S

• M&S Acquisition
  – M&S Strategy and Support Plans
  – M&S Requirements & Evaluating Proposals
  – Contracting for M&S
  – M&S in Decision Risk Analysis

• M&S Test and Evaluation
  – M&S for Test and Evaluation, Introduction and Advanced
  – M&S Environments
  – M&S Data Strategies

• M&S Engineering Integration
  – Physics-based M&S
  – Basic Engineering Concepts in M&S, Parts 1 & 2
  – Selected Topics in the Application of Engineering M&S

Certificates can be credited toward resident and non-resident NPS degree programs
Issues

• Incentivizing workforce
• Funding tuition
• Embedding content into DAU core courses
• Extending to other communities
• Scaling
• Documenting cost avoidance and cost savings
Program Benefits

• Comprehensive educational program focused on consumers of M&S. Significant step towards satisfying DoD M&S educational needs.

• Partnership of government and academia - opportunity to influence the culture of M&S education.

• Improved workforce capabilities across all Services, activities and programs that utilize M&S.

• Increased use of M&S in acquisition to realize potential savings from simulation based acquisition in the DoD not being realized today.

• All learning materials created from this project will be public domain – the nation will not have to pay for this work again.

• 80% of course materials will support all 6 communities, and the program is constructed in a way to facilitate reuse.
Conclusion

Current path will result in products that provide the education and training that acquisition and T&E professionals need to use M&S effectively in their jobs.

For more information about this project, please see https://diana.nps.edu/MSAcq, or contact:

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Questions?
Summary of Project Milestones
15 Nov 06 NPS Project Kick-Off
30 Jan 07 Stakeholder Input Conference
04 Apr 07 Academic Partners Conference
10 Oct 07 Formal IPR (Spiral 1)
13 Dec 07 Formal IPR (Spiral 2)
15 Sep 08 Formal IPR (Spiral 3)
01 Dec 08 Product Launch
01 Dec 08 Assessment (Spiral 4)