NAVAL POSTGRADUATE SCHOOL

Advanced Simulation Course for Army Simulation Management Professionals

Gene Paulo
Department of Systems Engineering
Naval Postgraduate School
eppaulo@nps.edu
(831)656-3452

Stephanie Few
Department of Systems Engineering
Naval Postgraduate School
smfew@nps.edu
(704)274-5178

Monterey, California

WWW.NPS.EDU

NPS tasked by the Army Simulation Proponent Division to develop, deliver, and sustain an executive level course

Course sponsored by the Simulation Proponent Division, office of the Army Modeling & Simulation Directorate for the US Army

Course Developed & Delivered by

WWW.NPS.EDU

Course Purpose:

Two week senior leaders course for LTC/COL level FA57 and senior civilians in the Army M&S Community.

Focus:

Provide a NON-technical perspective of significant M&S issues.

Scope:

- Equip students with better M&S management skills at Direct Reporting Unit (DRU), Army Command (ACOM), and Program Executive Officer (PEO) level.

- Familiarize students with current M&S management concerns throughout the Acquisition Life Cycle, specifically the different M&S applications in use during each phase.
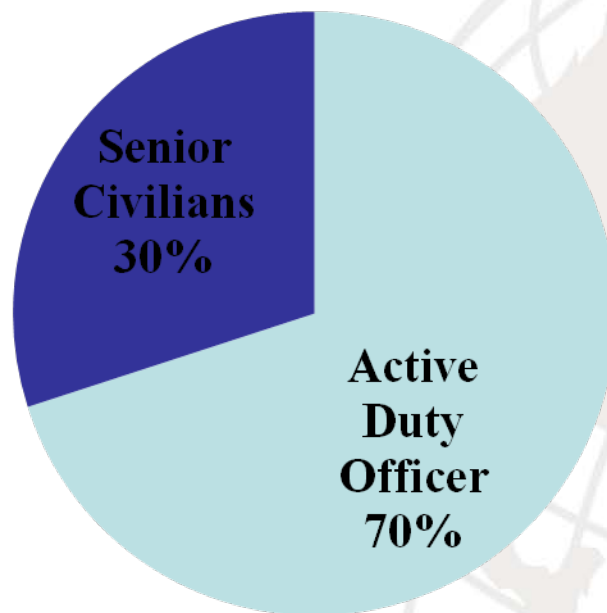
Prototype Course:

- **Objective:** Discover educational gaps, identify appropriate target audience, and determine potential for future offerings.

- **Delivered:** 11-22 May 2009

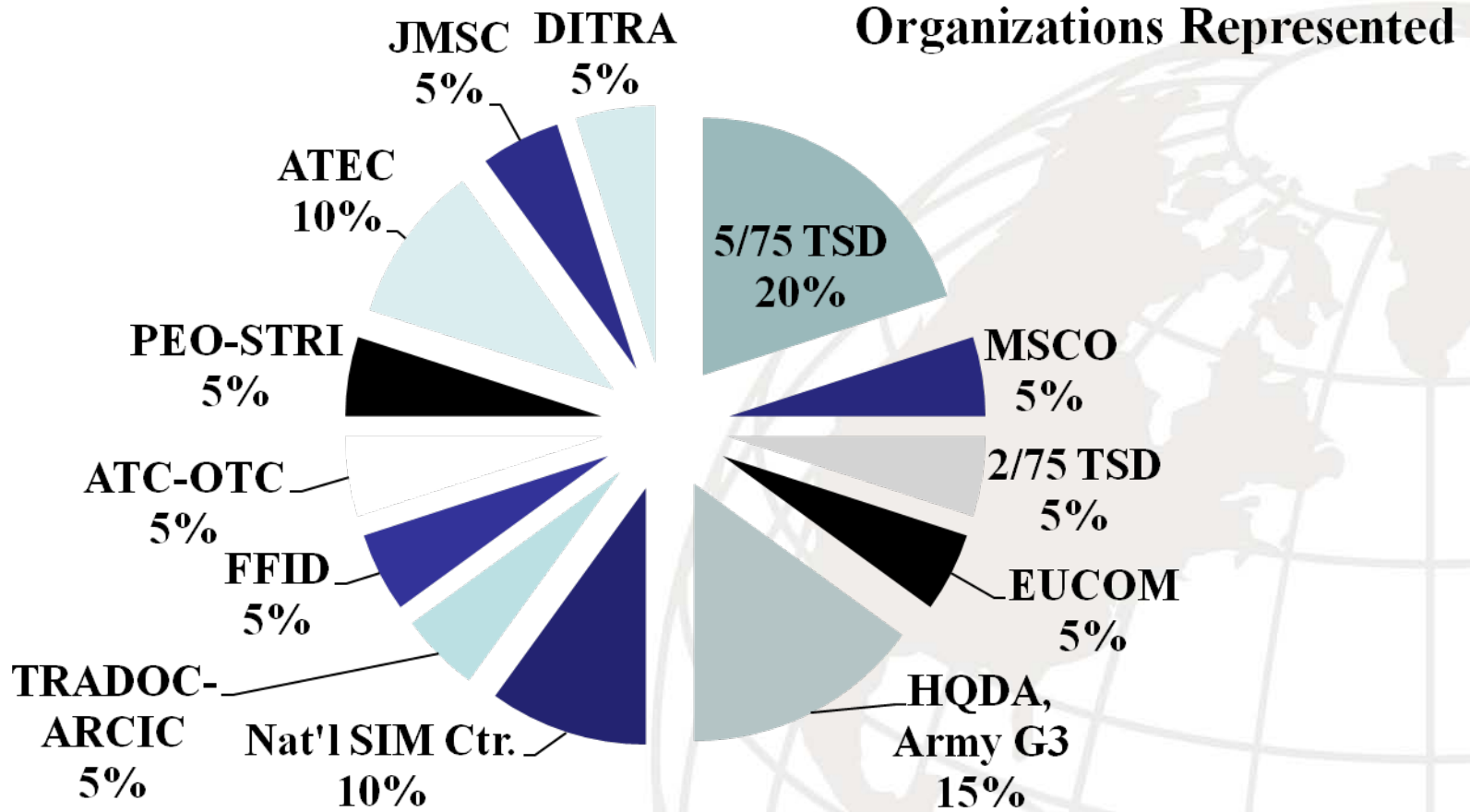- **Location:** NPS Center for Executive Education (CEE)

Prototype Course:

Student Body: 20 Total

Senior Civilians 30%

Active Duty Officer 70%

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Organizations Represented

- JMSC 5%
- DITRA 5%
- ATEC 10%
- 5/75 TSD 20%
- MSCO 5%
- PEO-STRI 5%
- 2/75 TSD 5%
- ATC-OTC 5%
- EUCOM 5%
- FFID 5%
- HQDA, Army G3 15%
- TRADOC-ARCIC 5%
- Nat'l SIM Ctr. 10%

Prototype Course: NPS Department Participation

- Computer Science

- Graduate School of Business & Public Policy

- Modeling, Virtual Environments, and Simulation (MOVES)

- Operations Research & Simulation Experiments & Efficient Designs (SEED) Center

- Systems Engineering

Prototype Course: SME Participation

- NPS Thesis Students
- GSResearch LLC

Prototype Course: Breakdown

- **Module 1: Management Concerns Regarding M&S**
    - Week 1 (Lessons 1-5)

- **Module 2: Lifecycle M&S Issues**
    - Week 2 (Lessons 1-4, plus Guest Lectures)

Prototype Course: Topics

Module 1: Management Concerns Regarding M&S

- **M&S Education (Lesson 1)**
  - Role of SIM professional, development & significance of MSBOK, and *what* should an M&S curriculum contain for DoD M&S professionals

- **M&S Requirements (Lesson 2)**
  - Overview of DoD M&S, M&S Standards, LVC, M&S Requirements Generation, M&S Fidelity and Resolution, VVA, DoD Stakeholders, DoD Organizations, Governing Docs, Army M&S Domains

- **M&S in Testing (Lesson 3 & 4)**
  - T&E Overview, Why We Test, Different Testing Types (DTE, OTE, LFTE and Military Experimentation)

- **M&S in Analysis (Lesson 5)**
  - Overview of DoD Analysis Domain and Development of Analytical Simulation Study

Prototype Course: Topics

Module 2: Lifecycle M&S Issues

- **M&S Acquisition (Lesson 1 & 2)**
  - Focus of M&S in Acquisition, JCIDS and use of M&S in JCIDS, DoD Life Cycle and M&S in DoD Life Cycle, M&S Challenges in Acquisition over the DoD Life Cycle, M&S Contracting Considerations, SIM Based Acquisition (SBA)

- **M&S in Risk, Cost, and Decision Analysis (Lesson 3)**
  - M&S in Risk and Cost Analysis in Program Management, M&S support in Decision Making

- **Future Trends in Simulation (Lesson 4)**
  - M&S Convergence of Live, Virtual, and Constructive Simulation
  - Serious Games and massively Multiplayer Games, Agent Based Models, Other New M&S Trends

- **Guest Lectures (Provided expert knowledge and techniques)**
  - Concept Refinement
  - M&S Education Opportunities for DoD Communities

12

Prototype Course: Supplemental Materials

- Case Studies

- Lesson Pre-Reads

- Handouts

- Group Exercises

- In-Class Tool Application

- Instructor Lead Discussion

Lessons Learned…

14

- **Course Assessments**
  - Each student completed a daily assessment, a weekly evaluation, and overall course evaluation.
  - Each daily evaluation focused on the topic delivered that day
  - Student feedback will be incorporated into future course offerings
- **Some Changes:**
  - FA57s Only
  - Incorporate more SMEs from DoD and Industry
  - More Practical Exercises

15

The Way Forward…

16

Next Course:

26 April – 7 May 2010

Naval Postgraduate School -CEE

Contact us for more information…

Naval Postgraduate School –SE Department

Dr. Gene Paulo
Course Facilitator & Instructor
(831)656-3452
eppaulo@nps.edu

Ms. Stephanie Few
Research Assistant
(704)274-5178
smfew@nps.edu

Questions?

Backup Slides…

NAVAL POSTGRADUATE SCHOOL

Analysis Community

Intelligence Community

Planning Community

What

Conduct Analyses on performance, effectiveness, survivability, trade offs, cost/benefit, logistical systems, personnel systems, army force structure and risk.

- Combat XXI,
- AWARS
- CASTFOREM
- Janus
- Spreadsheet Modeling
- CMS2
- APHAKS
- JICOM
- AMP
- MIDAS and GAMS

Provide actionable events designed to stimulate/simulate the proper HUMINT, SIGINT, and GEOINT intelligence disciplines gathered in real world operations.

- TACSIM
- BSS
- IEWTPT
- CSP
- MUSE
- NWARS
- QSIDS
- JCATS
- JLCCTC Federation

Conduct a system of systems approach to various planning tools (i.e. Force Management Model

- ARFORGEN
- CFAST
- APIT
- APEX
- MIDAS
- ELIST
- APOD/AST
- INFO-21
- JOPES and JFAST
- JDLM
- ADEPT

Impact

Total Army Analysis products, determining effectiveness of weapon systems, determining performance and system characteristics of equipment and system purchases, determining effectiveness of force management decisions

Training intelligence personnel for COIN operations, and OIF/OEF activities

Determining warfighting capabilities requirements, conducting research and development, and providing resources. ARFORGEN analysis and modeling.

Who

CAA, TRAC, AMSAA

Army G2, USAIC, JICTC, Intelligence soldiers in the Operational Army

HQDA, Army Command, ASCCs, DRUs, Operational Units Staffs

21

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Experimentation Community

What

Exploring, testing and validating warfighting ideas and concepts to transform the way soldiers fight future battles .

- JLCCTC Federation
- HITL sims and simulators
- Controlled field experiments
- BLCSE
- MATREX and 3CE
- ATIN
- OTC
- ACRT
- AWARS
- One SAF
- EDSIM
- CMS2
- FireSIM
- CAMEX

Impact

Conduct of experiments involving soldiers and leaders within the live, virtual and constructive environments for exploring concepts, capabilities requirements and solutions across DOTMLPF and the AC2DP process

Who

TRADOC, RDECOM, SMDC, USASOC, AMEDD, PEOs, Battle Labs, FORSCOM

Acquisition Community

Provide virtual and constructive test beds thru which weapon, equipment and ammunition factors can be prototyped, tested and evaluated during the acquisition process.

- ANSYS LS-DYNA
- ProE, ANSYS
- One SAF
- MSC Adams
- MPR3D
- AJEM
- MUVES
- CB Sim Suite
- ALOHA
- PVTM
- Visual Weight
- MUVES
- SIV
- Casualty Reduction Model
- BlastX

Reduces testing time and costs and allows measurement of phenomenon that can not be measured using traditional methods. Provides data for procurement decisions. Allows for selection and characterization of optimal material solutions.

ASAALT, RDECOM, PEOs

Testing Community

Employ M&S throughout program life cycle to support requirements definition; design and engineering; test planning, rehearsal, and conduct of an Army test.

- Live/Virtual/Constructive
- 4DWX
- Overarching Contamination Avoidance Model
- CBSNE
- DSOM
- JLCCTC Federation
- ECSM
- IMASE
- COLPRO
- DETES
- DMS3
- EGI/CEGS
- ETS
- NETS

Evaluate the performance of tested items , systems and/or organizations, early examination of soldier interface and missions, determines system performance and safety.

Army T&E, ATEC

22

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Training & Operational Community

Logistical Community

What

Delivering an integrated Live, Virtual and Constructive training environment that support the ARFORGEN model and mission rehearsal requirements.

- JLCCTC Federation
- Virtual Simulators
  - CCTT
  - AVCATT
  - EST 2000
- One SAF
- JNEM
- DCARS
- WARSIM
- IEWTPT
- JNTC
- LVC-IA
- Gaming

M&S develops a level of understanding of the interaction of the parts of the logistical system, and of the logistical system as a whole, seldom achievable via any other process.

- JDLM
- MIDAS
- JFAST
- ELIST
- TARGET
- PORTSIM
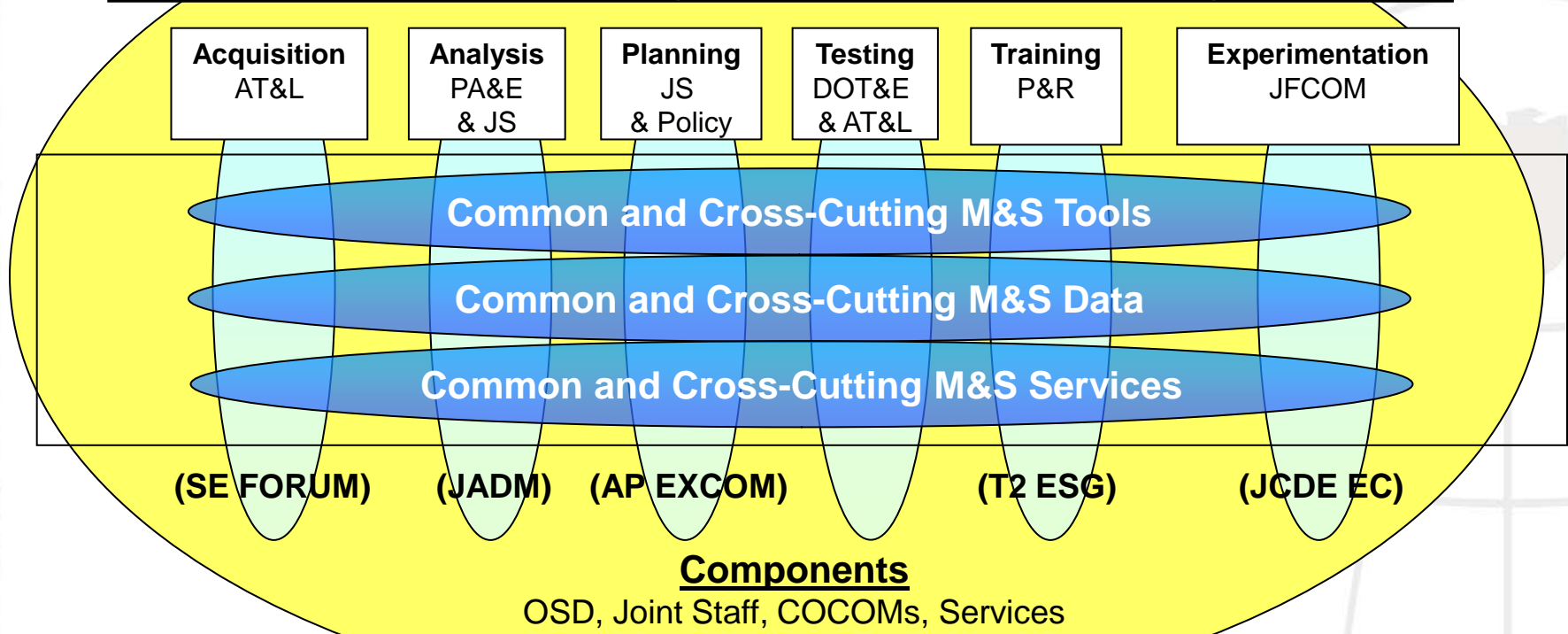- POPS
- AMP
- JCATS
- JLCCTC Federation
- LOGFED

Impact

Pre-deployment training exercises, mission rehearsals, trained and ready soldiers, ABCS & digital system training

Deployment timelines, training soldiers in logistical functions and units, efficiencies of logistical operations

Who

CTCs. NTC, JFCOM, BCTCs, all Army units

AMC Logistics Support Activity , SDDCTEA, soldiers in logistical units and staffs, AMC, NSC, CASCOM

23

New M&S Governance and Management Structure Organized by Communities. Designed to Support & Integrate M&S Activities across the Department. Led by a 1 to 2 Star M&S Steering Committee (M&S SC) to provide governance.

Acquisition AT&L	Analysis PA&E & JS	Planning JS & Policy	Testing DOT&E & AT&L	Training P&R	Experimentation JFCOM

Common and Cross-Cutting M&S Tools

Common and Cross-Cutting M&S Data

Common and Cross-Cutting M&S Services

(SE FORUM)   (JADM)   (AP EXCOM)   (T2 ESG)   (JCDE EC)

Components

OSD, Joint Staff, COCOMs, Services

Goal: Establish corporate M&S management to address DoD goals: Leads/guides/shepherds the $Bs in DoD M&S investments; adds value thru metrics & ROI-driven priorities; and seeks to provide transparency.

Advance Simulation Course: Daily Assessment
Presenter(s):
Session Title:
Date:

Please rate each item on the 1 to 5 scales, where 1 is the lowest rating and 5 is the highest.
Two different topics are delivered by different instructors on some of the course dates; therefore, some questions are repeated to access each topic separately. Topic one represents either the morning session or one full day of instruction. When applicable, topic two represents the afternoon session.

1. The objectives were clearly explained: 1   2   3   4   5
2. The content was frequently reinforced with examples:
3. The content was relevant/useful to my current or future job:
4. The value of the lecture(s):
5. The value of the class discussion:

6. The instructor was well prepared for topic **one**:
7. The instructor was well prepared for topic **two** (if applicable):
8. The concepts and ideas were clearly presented for topic **one**:
9. The concepts and ideas were clearly presented for topic **two** (if applicable):
10. The instructor focused on the applications of concepts for topic **one**:
11. The instructor focused on the applications of concepts for topic **two** (if applicable):
12. The instructor interacted effectively with participants for topic **one**:
13. The instructor interacted effectively with participants for topic **two** (if applicable):
14. Overall rating for topic **one**:
15. Overall rating for topic **two** (if applicable):
16. The value of pre-reads and handouts for topic **one** (leave blank if n/a):
17. The value of pre-reads and handouts for topic **two** (leave blank if n/a):
18. The value of the case studies for topic **one** (leave blank if n/a):
19. The value of the case studies for topic **two** (leave blank if n/a):
20. The value of small group exercises for topic **one** (leave blank if n/a):
21. The value of small group exercises for topic **two** (leave blank if n/a):
22. The overall rating for topic **one**:
23. The overall rating for topic **two** (if applicable):

Comments:

20 Assessments Completed Per Day

Totaled the # of ratings (1-5) per assessment, added all assessment ratings together per day for an overall idea of the day's topic likes, dislikes, and delivery.

Each rating (1-5) total was divided by # of questions completed per day (some questions did not apply) to reach the percentages.

Comment Space provided to list
3 Likes and 3 Dislikes of the day.

1 –Lowest, 5 –Highest

25

NPS & SME Recognition

Curtis Blais: NPS CS & MOVES

Jeff Cuskey: NPS GSBPP

Chris Darken: NPS CS & MOVES

John Dillard: NPS GSBPP

Karl Gunzelman: GSResearch LLC

Tom Hoivik: NPS OR

Mathias Kolsch: NPS CS & MOVES

Tom Lucas: NPS OR & SEED Center

Dave Matthews: NPS GSBPP

Don McGregor: NPS CS & MOVES

David Olwell: NPS SE

Gene Paulo: NPS SE

Mark Rhoades: NPS SE

Susan Sanchez: NPS OR & SEED Center

26