

Challenges for Modeling and Simulation



James L. Johnson
Office of the Secretary of Defense
Program Analysis and Evaluation

Challenges for the Analytic Community

Peacetime Engagement/SSCs

- Prioritizing regional security objectives
- Measuring effectiveness of peacetime engagement
- Combined exercising
- Assessing long-term deployments
- Developing compellence models
- Use of force criteria for SSCs
- Effects of SSCs on MTW readiness

Crisis Response and War

- Re-defining MTWs
- MTW base case assumptions
- Improving MTW modeling to take account of information, NBC, coalition interoperability, etc.

Prepare to Meet Future Threats

- Linkages between modernization and transformation
- Facilitating meaningful trade-offs among defense capabilities

Modeling and Simulation Strengths and Weaknesses

- *Strengths*
 - Study processes that rarely or never occur
 - Evaluate a wide range of alternatives
 - Generate new ideas, new concepts, innovative solutions
- *Dilemma*
 - To provide rapid response to decisionmakers and adequate visibility to know how to implement recommendations
- *Weaknesses*
 - Time needed to complete comprehensive work
 - Current state of data management
 - Integration of multiple models

Future Initiatives

- *Improve Simulation Models*
 - JWARS
 - JSIMS
 - Coordination with Service initiatives
 - Coordination with studies program
- *Improve Data Management*
 - Joint Data Support
 - DMSO
- *Improve Collaborative Analysis*

Integrated Models Will Organize Better Data Management and Reduce Response Time

JWARS

- Destruction of strategic deployment assets
- Disruption of strategic deployment network

Strategic Logistics

(Strategic movement of units and supplies from POE to POD)

- Strategic network
- Simplified APODs and SPODs
- Movement via strategic lift assets -- aircraft and ships

Theater Logistics

(Within theater movement of units and supplies)

- Detailed theater network
- Movement via theater transportation assets

Joint Warfighting

(Combat, maneuver, C3)

- Air, land, and sea C3
- Air, land, and sea operations (-)
- Chemical defensive operations
- Naval blockade
- Detailed Air Tasking Order
- Forcible entry operations
- Theater Missile Defense

Perception

- Provide intelligence information

- Assess operational situation