Overview

- Background
  - Program status
  - Model development status
  - JMASS Master Schedule
  - Summary
Results, not models, are aggregated and passed up the pyramid.
Dr. Gansler affirmed support for program, 15 Oct 98, “…confident … JMASS will become a key technology that will enable us to fully integrate modeling and simulation into the Department’s acquisition process”
System Description

- **Model Standards**
  - Software Structural Model for Reuse
  - Model Application Programming Interface

- **Simulation Support Environment**
  - Simulation Engine
  - Visual Development Tools
  - Analysis Tools
  - COTS & Legacy Tool Interface

- **Model Library & Repository**
  - Local Model and Data Library
  - Modeling and Simulation Resource Repository

Yield is common, reusable, interoperable models
Requirements

  - Air Force signed, 20 Sep 98
    - Lt Gen Marvin Esmond, DCS for Air and Space Operations
  - Army signed, 6 Dec 98
    - Maj Gen Joseph M. Cosumano, Jr., Ass’t DCS for Operations and Plans, Force Development
  - Navy signed, 6 May 99
    - Vice Admiral Conrad C. Lautenbacher, Deputy Chief of Naval Operations, Resources, Warfare Requirements and Assessments
Requirements Synopsis

(Joint Operational Requirements Document (JORD), dated 31 Aug 98)

- JMASS will provide the acquisition community:
  - Systems-level architecture
    - Structure for simulations, component models
  - Standards, guidelines and tools
    - Building JMASS compliant models
    - Assembling the models into simulations
    - Executing simulations over time
    - Analyzing results
  - Compliance testing suites
  - Comprehensive technical and user documentation

Implemented in a streamlined software package
Requirements Synopsis

(Joint Operational Requirements Document (JORD), dated 31 Aug 98)

- Other factors:
  - Optimize implementation to support models operating from the engineering through engagement levels
  - Initially limit services to those required by weapon system performance modeling community
  - Use to develop "pedigreed data"
    - Supports aggregated simulation systems
      - JSIMS, JWARS
JMASS Relationship to SBA
(from OUSD/DTSE&E white paper, dated 18 Feb 99)

- JMASS is one critical segment in the technical environment portion of the overall SBA strategy:
  - **Distributed Product Descriptions (DPD):** JMASS models can be extended to be a performance-based, one-dimensional DPD with the incorporation of DPD-specific features such as user-selectable views
  - **DoD/Industry Resource Repository (DIRR):** JMASS models will be placed in the DIRR, either individually or as a JMASS library node/pointer
  - **Data Interchange Formats (DIF):** JMASS will use currently existing DIFs or develop new ones where they don’t exist
  - **Collaborative Environments (CE):** JMASS development environment can serve as a basis for a collaborative environment, targeted to the areas that JMASS will support
Overview

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➤ Program status

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Program Status

- **JMASS 98:**
  - Departure point for joint program
  - Developed and supported by Dynetics, Inc., Huntsville, AL
  - Analyst, model developer training available

- **Additional tools:**
  - Scenario Laydown Development Tool, SAIC, Albuquerque, NM
  - Run-time Analyst Tools, Dynetics, Inc., Huntsville AL
  - Analyst Toolkit, BDM, International, McLean, VA
  - Automated Model Conversion Tool (AMCTool), SPARTA, Inc., Laguna Hills CA

- **Joint program risk reduction activities:**
  - Real-time risk reduction effort, Amherst, Buffalo, NY;
Common Test & Evaluation Investment Program Projects

- Common Test & Evaluation Investment Program (CTEIP) JMASS projects:
  - Investigate JMASS model decomposition and reuse
    - Use HLA Run Time Infrastructure to support component-to-component communication
  - Define and prototype JMASS compliant EO/IR/UV environment model
Program Status

• Program Research and Development Announcement
  – Solicitation for COTS, GOTS tools and services to meet JORD requirements
  – Contract awards expected NLT 1 Nov 99
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Model Development Status

- Surface-to-Air threat models developed by Missile and Space Intelligence Center (MSIC)
  - Target Acquisition Radars developed by National Air Intelligence Center (NAIC)
  - Model deliveries on track
    - Sep 99: 3 emulative, 7 analytic models
    - Jul 00: 4 analytic models

- Air-to-Air threat models developed by NAIC
  - Aircraft, radar and missile template models
  - 8 analytic models on track for Sep 00 delivery
Model Development Status

- Air Defense Artillery analytic model developed by National Ground Intelligence Center (NGIC)
  - On track for Sep 99 delivery
JMASS Customers

- B-1 Defensive System Upgrade Program (DSUP)
  - Blue Digital System Model (DSM)
  - Electronic Countermeasures (ECM) system model
  - Threat models

- F-22
  - Blue DSM
  - Threat models

- Joint Strike Fighter (JSF)
  - Blue DSM
  - Threat Models
JMASS Customers

- Joint Air-to-Surface Strike Missile (JASSM)
  - Blue DSM
  - Threat Models
  - JMOOSE upgrades

- F-15
  - Blue DSM
  - ECM model

- AFIWC
  - Chaff Dispenser
  - Flares
  - RWR
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  ➡ JMASS Master Schedule
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## JMASS Master Schedule

**Time Now**

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→ Summary
Summary

- JMASS 98 departure point for Joint program
- JMASS model population steadily increasing
- JMASS-compatible analyst tools increasing
- JMASS gaining wider acceptance across the modeling and simulation community
To contact JMASS Program Office

www.jmass@wpafb.af.mil