



**Joint Modeling and Simulation System
Defense Modeling and Simulation Office
Briefing to Industry**

**Briefer: Ms Cindy Porubcansky
JMASS Program Manager**

Date: 4 Jun 99

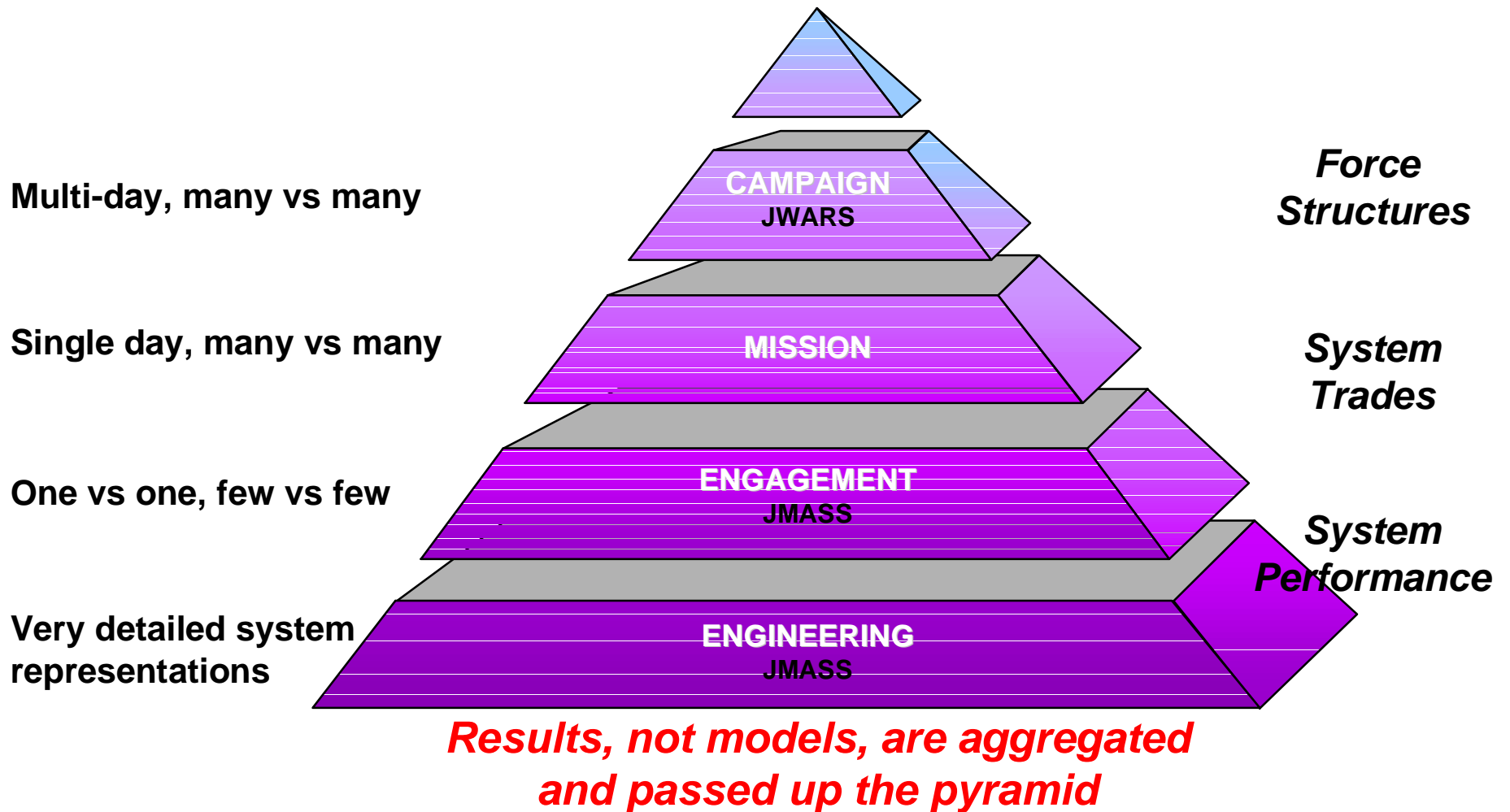


Overview

- ➔ **Background**
 - **Program status**
 - **Model development status**
 - **JMASS Master Schedule**
 - **Summary**

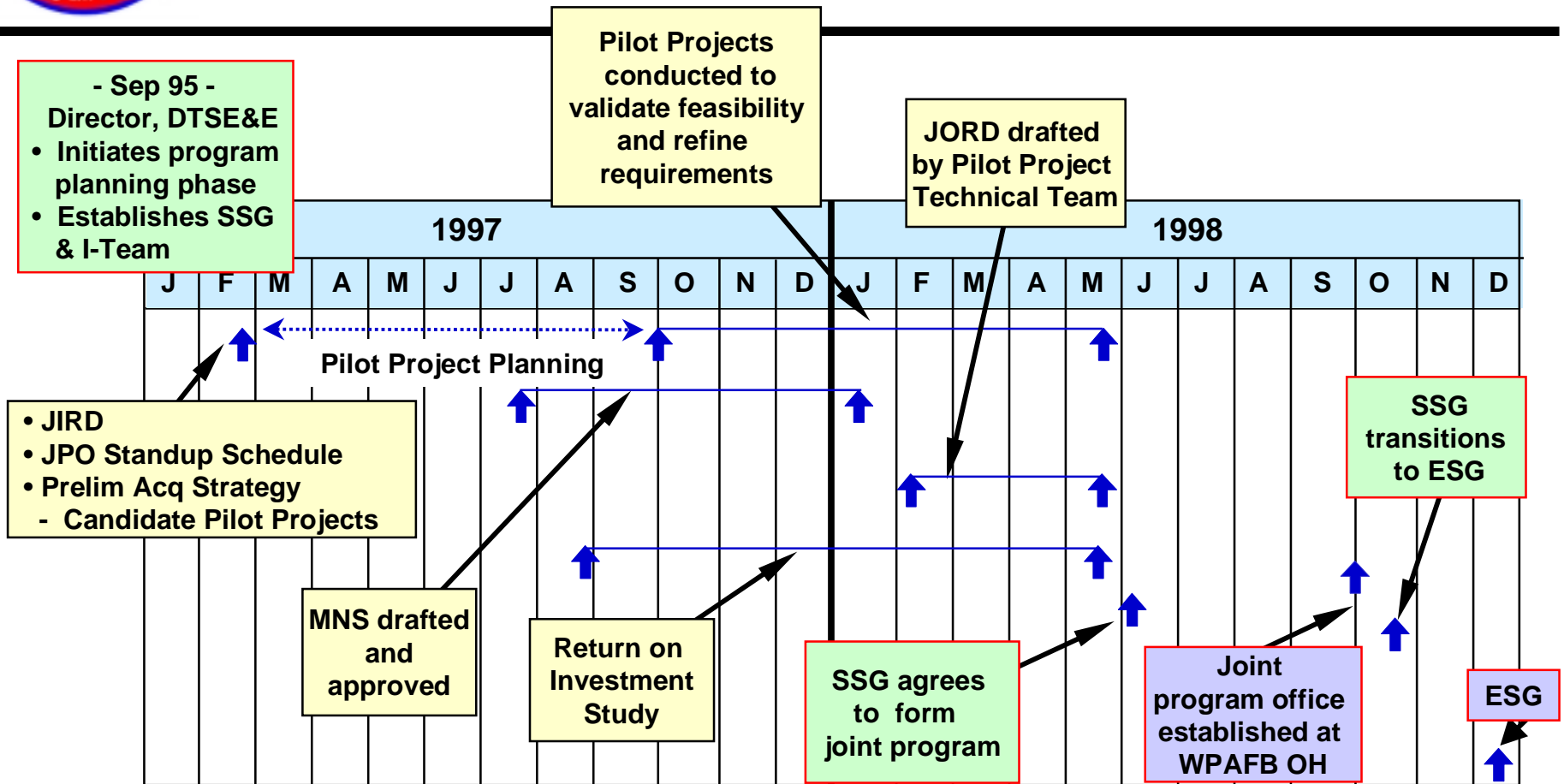


Levels of Analysis





Background

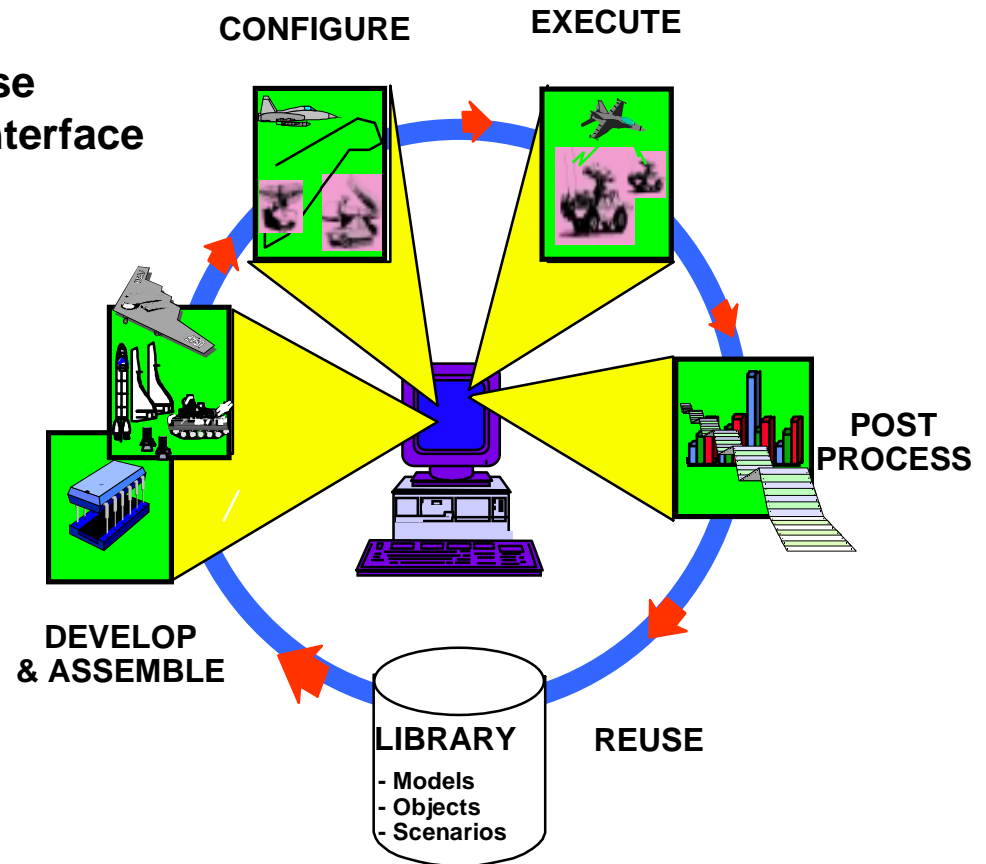


Dr. Gansler affirmed support for program, 15 Oct 98, "...confident ... JMASS will become a key technology that will enable us to fully integrate modeling and simulation into the Department's acquisition process"



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

- **Joint Modeling and Simulation System (JMASS) Operational Requirements Document (JORD) -- USAF001-98-III, 31 Aug 98**
 - **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



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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, McClean, 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



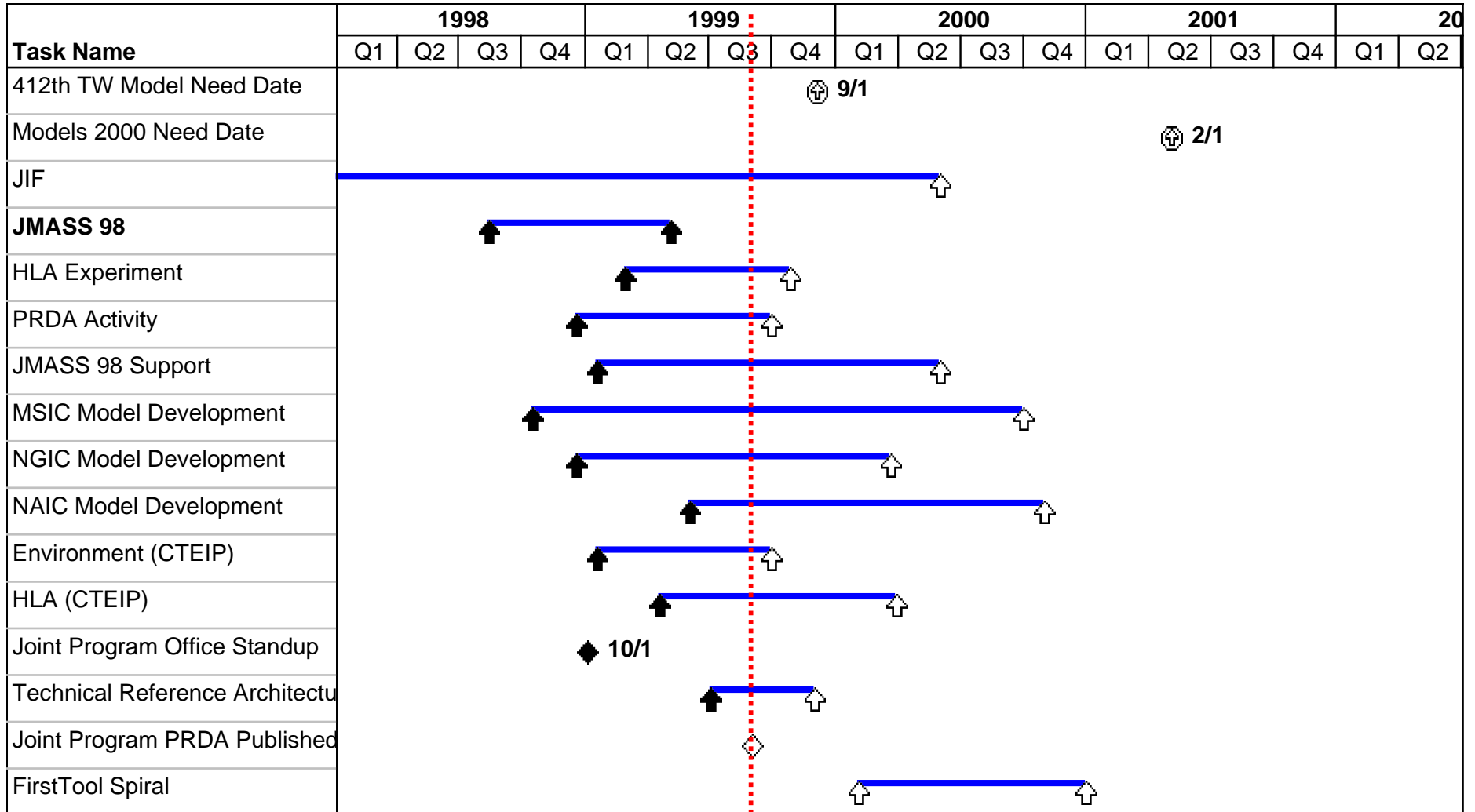
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JMASS Master Schedule

Time Now





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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

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