



**NAVMSMO**  
Navy Modeling and Simulation Management Office

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# **Technical Session T7 Department of the Navy Verification, Validation, and Accreditation (VV&A) Policy and Standards**

*Presented by:*

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# **Outline**

- **Overview**
- **VV&A Policy Infrastructure**
- **VV&A Process**
- **VV&A Roles**
- **VV&A Standards**
- **VV&A Tool**
- **Summary**

# Overview

- **Mission**

- Coordinate and integrate M&S efforts across assessment, training, acquisition, and support to operations

- **Vision**

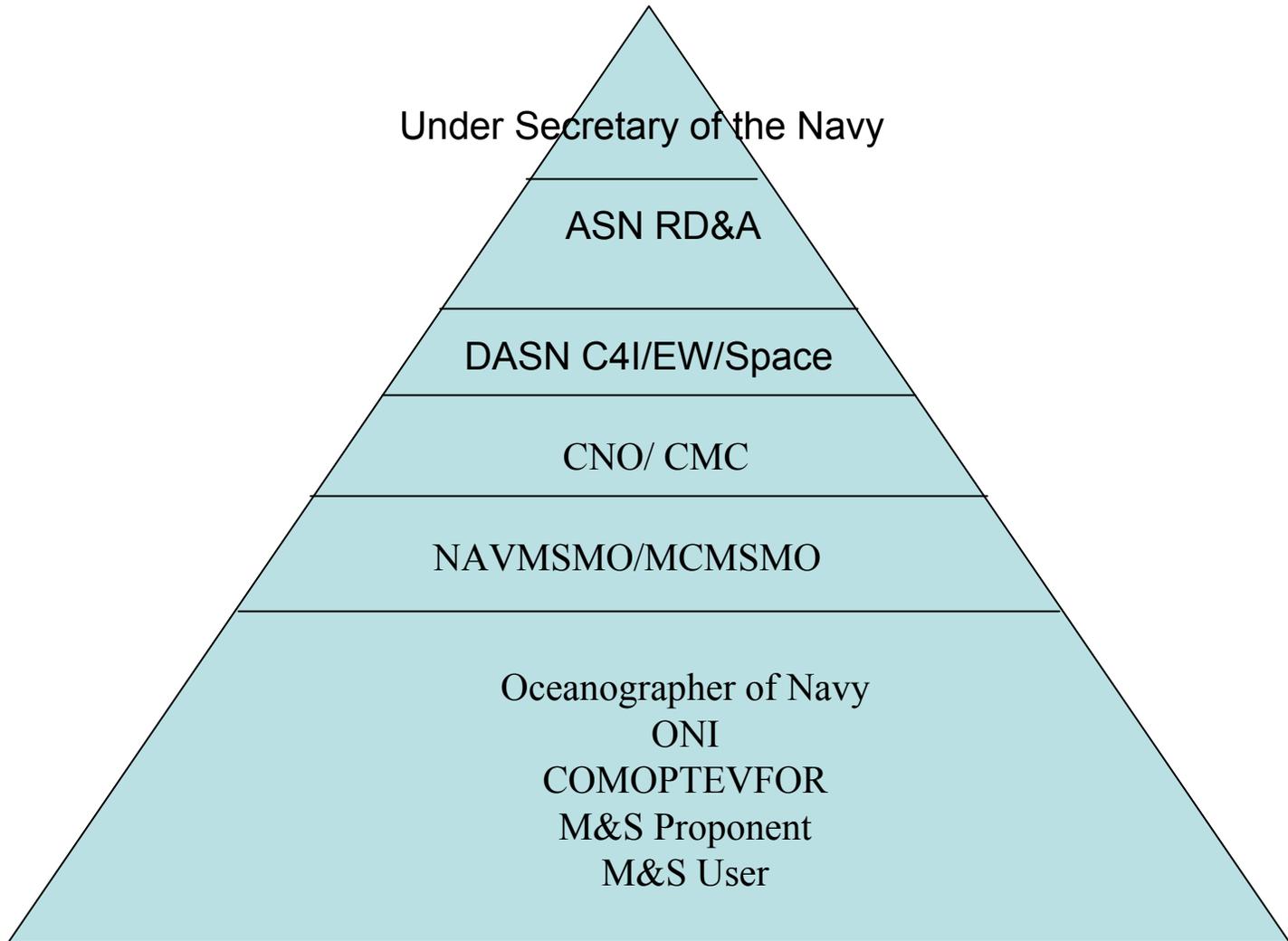
- M&S will provide a pervasive set of tools for operational units and also to support analysis, training, and acquisition throughout the Department of the Navy.

# M&S VV&A Policy

- **SECNAV Instruction 5200.38A, Department of the Navy (DON) M&S Management, 28 Feb 2002**
  - Establish policy and procedures for DON M&S
- **OPNAV Instruction 5200.34, Navy M&S Management, 28 May 2002**
  - DON M&S VV&A Implementation Handbook provides amplifying information, guidance, and assistance to those responsible for conducting M&S VV&A
- **SECNAV Instruction 5200.40: Verification, Validation, and Accreditation of Models and Simulations, 19 April 1999**
  - Applies to **all** DON organizations involved with M&S activities
  - Applies to **all** categories of M&S used by DON activities



# M&S VV&A Organization



# VV&A Policy Statement

- **All models and simulations acquired, developed, managed, and used by DON activities**
  - All categories of M&S used by DON activities including live, virtual, and constructive simulations; distributed simulations; federates and federations; emulators; prototypes, simulators; and stimulators.
    - M&S may be legacy systems, new developments, and modified or enhanced legacy M&S. These include but are not limited to embedded and stand-alone M&S systems.
    - M&S managed by Federally Funded Research and Development Centers, industry, academia, and other Federal or non-Federal government organizations used to support a DON activity.
  - Commercial-off-the-shelf, government-off-the-shelf, and new M&S tools used to train, develop, test, implement, monitor, analyze, or manage models and simulations.
  - Data needed to verify M&S requirements, build the conceptual model, validate the M&S, perform experiments, and run combat support M&S decision aids.

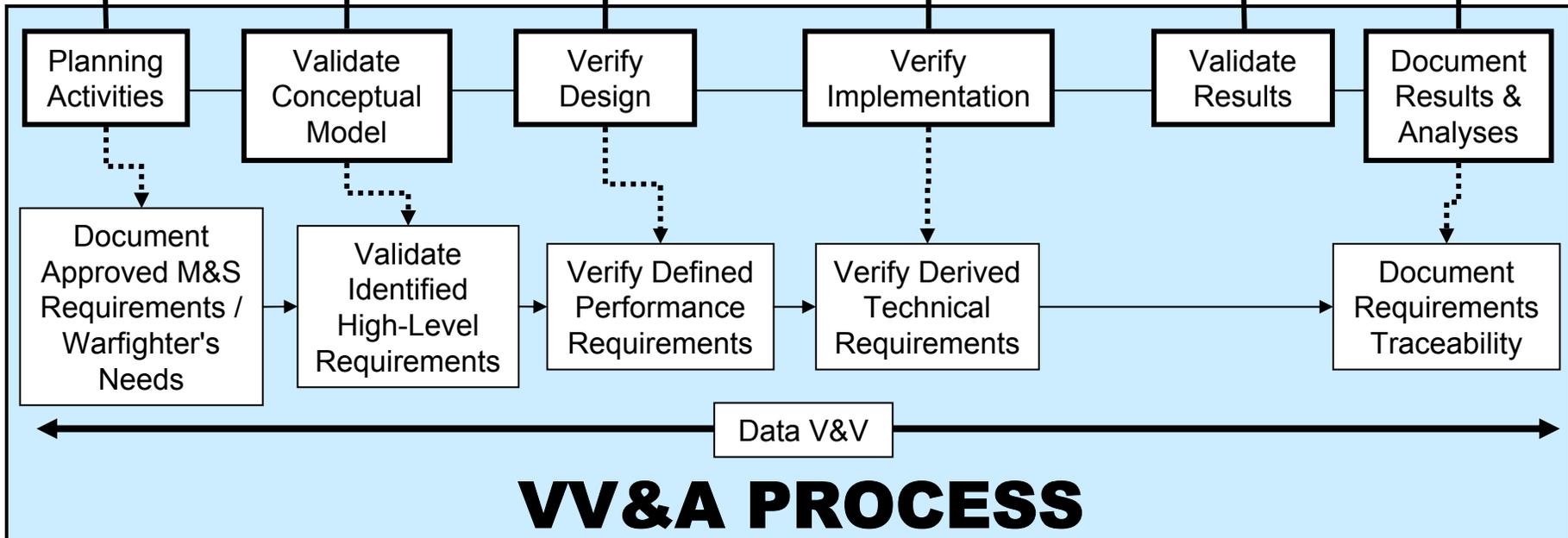
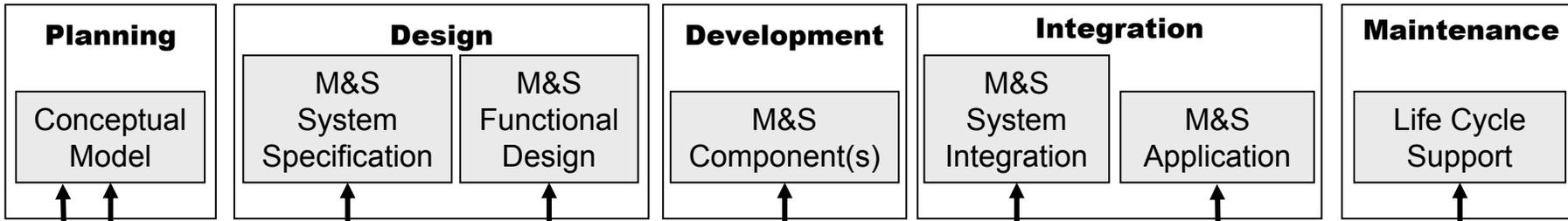
# Implementing Documents

- **OPNAVINST 3960.15, Validation Of Navy Air Defense Threat Simulators, 6 May 1991**
- **NAVAIRINST 3960, Validation of Navy Air Defense Threat Simulators, 4 May 1992**
- **COMOPTEVFORINST 5000.1: Use of Modeling and Simulation in Operational Testing, 5 September 1995**
- **PEOTSC INST 5200.3, Verification, Validation, and Accreditation of Modeling and Simulation, 4 February 2000**
- **PEOW INST 5232.1A, TOMAHAWK Simulation Management Policy, 27 Feb 2001 (draft)**
- **NSWC Carderock Division, A Process for Verification and Validation of Carderock Division Modeling and Simulation Software, NSWCCD-20-TR-2000/01 June 2000**
- **Oceanographic and Atmospheric Master Library (OAML) Configuration Management Plan, Feb 1996**



# VV&A Process

## M&S PROCESS

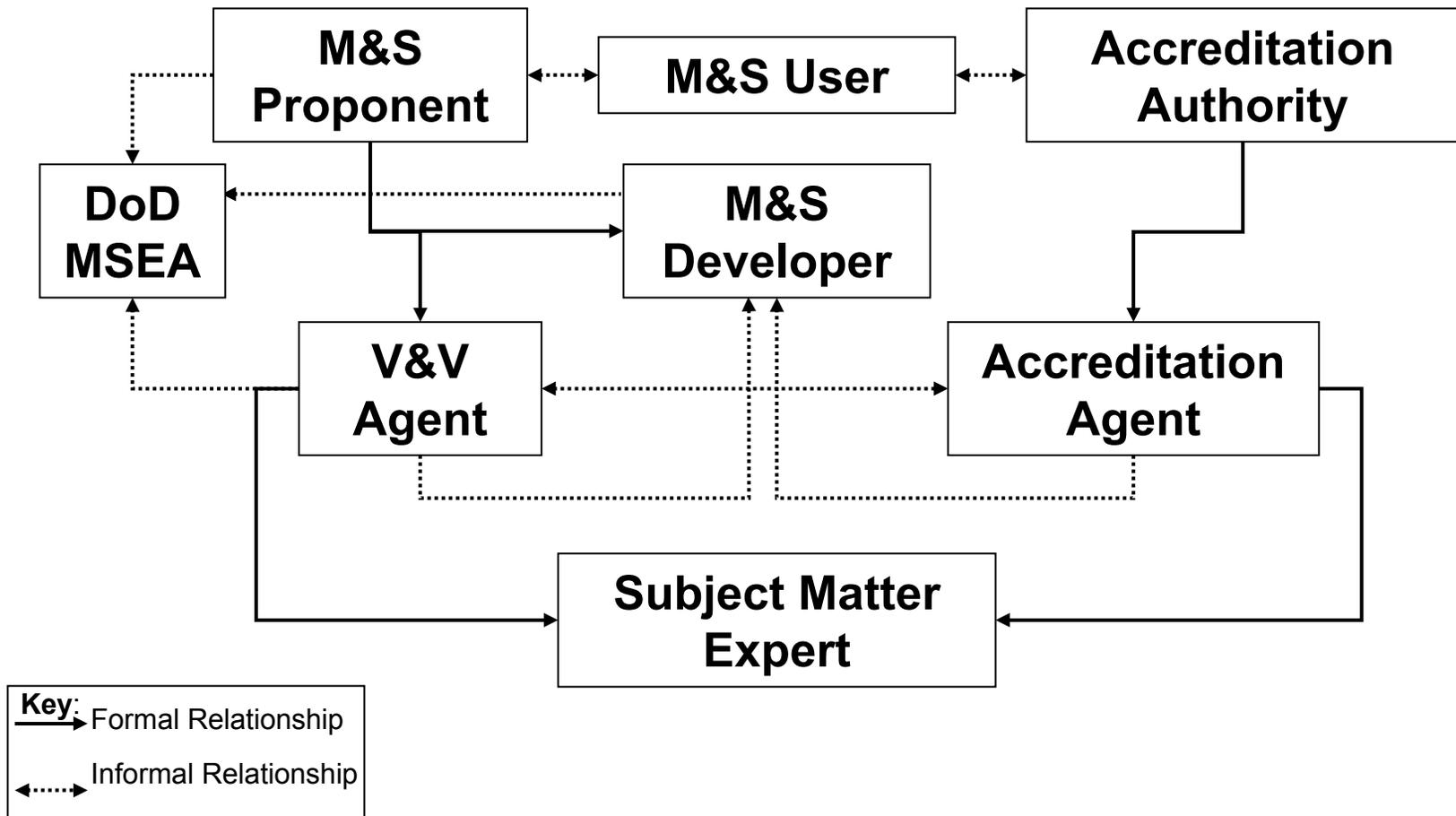


## VV&A PROCESS

**V&V EXAMINES PRODUCTS OR ARTIFACTS OF THE M&S PROCESS**

**ACCREDITATION ASSESSES EVIDENCE DOCUMENTED DURING V&V**

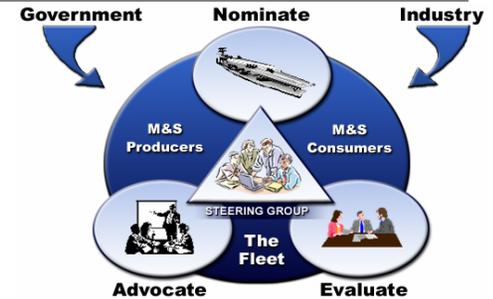
# VV&A Roles and Relationships



# VV&A Standards

- **Navy M&S Standards Project**

- Navy M&S Standards Steering Group (MS3G)
  - Nominate, Evaluate, Advocate
- VV&A Technology Area Group (VV&A TAG)
  - Provide VV&A technical expertise to address VV&A standard needs
  - Evaluate and shepherd proposed standards through the Navy M&S Standards Process



- **Approved VV&A standard**

- DON M&S VV&A Implementation Handbook
  - Approved as Navy M&S best practices guide in April 2001

- **In standards review process**

- Air Defense and Related Threat Simulation Validation Process and Report
- Oceanographic and Atmospheric Master Library VV&A Process and Standard Development Documentation

*M&S standards formally adopted by DoD or DON shall be applied to all VV&A efforts as applicable. (para 4.d, draft SECNAVINST 5200.40A)*

# Potential VV&A Standards

- **9-Step Statistics of Validation Process**
- **Process to Determine Acceptability Criteria Measures & Metrics**
- **Scales of Evidence for Informed Decisions**
- **Standard RFP/Contract/SOW Wording**
  - M&S Acquisition & Development
  - Acquisition of VV&A Products and Services
- **Conceptual Model Data Item Description**
- **Data V&V**
- **Risk Management**
- **Performance/Reliability Characteristics**
- **NIMA TMPO V&V Process**
- **USW Threat-Target Validation Process**
- **NUASM Simulator Validation Process**
- **Training Process-Based M&S Validation Process & Report**
- **Standard Validation Criteria**
- **High-Level C4ISR Communications Acceptability Criteria MOEs & MOPs**

# **VV&A Tool**

- **Automate VV&A documentation**
- **Guides the user through VV&A Implementation**
- **Has potential to cut cost of producing VV&A documentation**
- **Provides starting point**
- **Beta testing conducted in FY02**
- **Expected Build 1 release in FY03**

# Summary

- DON policy states the use of **credible** M&S throughout the Navy and Marine Corps
- DON policy is consistent with DoD policy in its context.
- NAVMSMO, on behalf of DON, provides guidance and tools to support VV&A implement and policy.
- Suggestions are welcome.