OUSD(A&T)
Software Assessment Initiative

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OUSD(A&T) Software Engineering Program Assessment Initiative

- **Background**

  - ➢ **DoD Has Found Software to be a Leading Cause of System Schedule Slips, Cost Overruns, and Operational Failures**

  - ➢ **OUSD(A&T) Requested Increased Visibility Into Software Development and Integration Issues.**

  - ➢ **Initiative Developed to Provide Software/System Assessments of Programs DoD-wide.**

  - ➢ **Program Level Focus**

Initiative is OSD Sponsored and Service Executed

OUSD(A&T) Software Engineering Program Assessment Initiative

- **Software Assessment Initiative Objectives**
  - ➢ **Strengthen DoD Software Intensive System Acquisition & Technical Performance**
  - ➢ **Provide Objective Software Assessment Information to Support DoD Program and Executive Level Decisions**
  - ➢ **Improve Acquisition Policy, Education and Training**
  - ➢ **Build a Knowledge Base of Software Cost, Schedule and Performance Factors and Related Issues**

- **Focus is on Providing PMs With Timely Solutions**
  - ➢ **Recommendations that Facilitate Success**
  - ➢ **Geared Towards Making PMs Self-Sufficient**

OUSD(A&T) Software Engineering Program Assessment Initiative

- **DoD Multi-Level Decision Support**
  - ➢ **Critical Program Milestone Decisions (e.g., OPEVAL)**
  - ➢ **Resource Allocation and Investment (e.g., Limited Rate Production)**
  - ➢ **Program Planning and Implementation - Preventative**
  - ➢ **Program Problem and Risk Identification and Prioritization**
  - ➢ **Resolution of Key Program Software Product and Process Issues**
  - ➢ **Software Acquisition and Technical Policy Definition**

- **Work Underway to Expand to System-level Issues**

Accomplishments

- **Completed Assessments**
  - ➢ **3 Army, 2 Navy, 1 Air Force, 1 Joint (Air Force/Army)**
  - ➢ **Range from ACAT I to ACAT III**
  - ➢ **Wide variety of user domains (weapon, intelligence/space, electronic warfare, and automated information system)**
  - ➢ **Encompass both "Expanded" and "Limited" assessments**

- **Developed Program Assessment Architecture**
  - ➢ **Leverage existing models, tools and techniques**
  - ➢ **Tailor to specific program assessment needs**
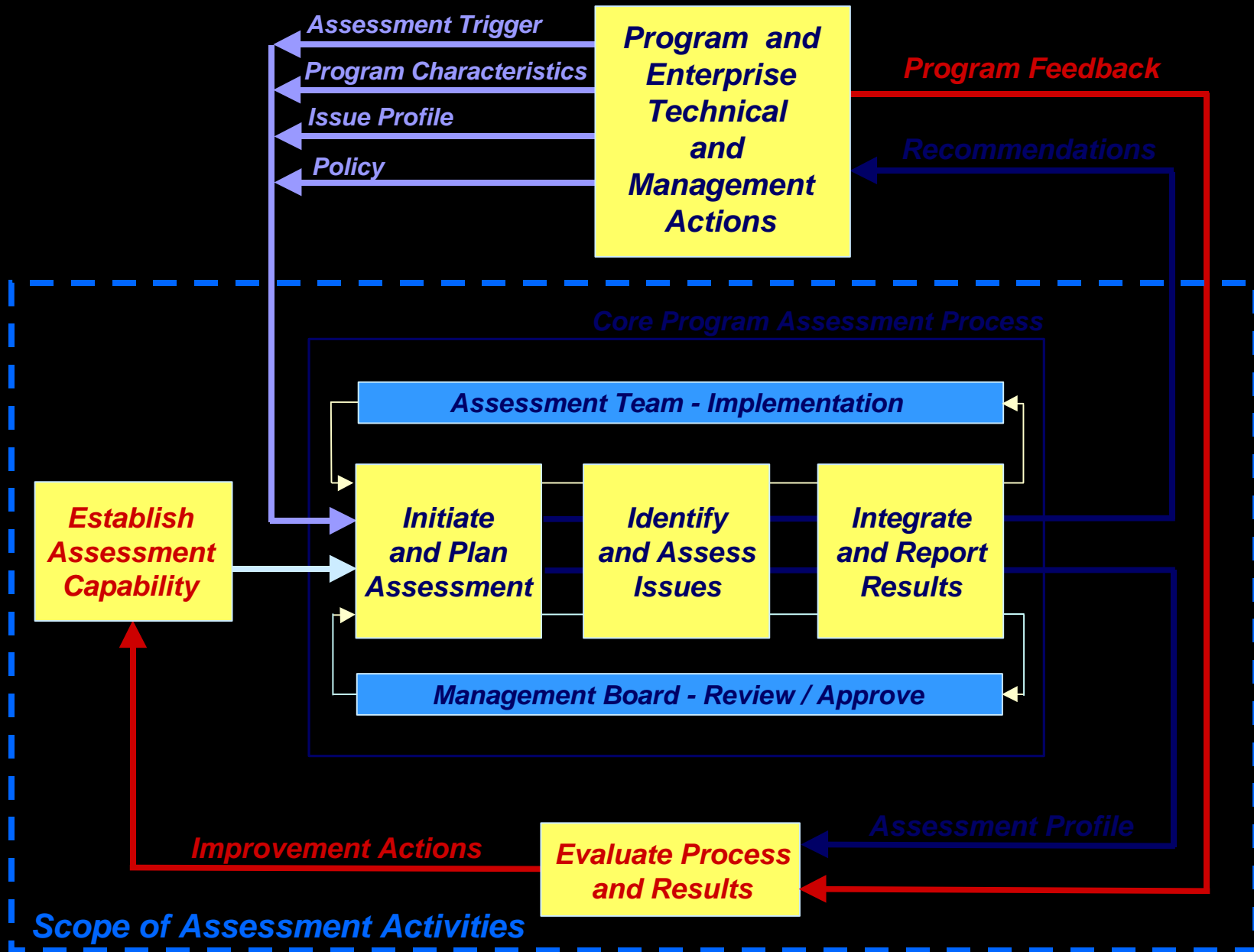
Program Assessment Architecture

- **Objectives**
  - ➢ **Address a Wide Scope of Software, System, and Program Related Issues**
  - ➢ **Define a Consistent Assessment Application Process and a Consistent Technical Assessment Framework**
  - ➢ **Address Issues Associated with Specific Organizational Perspectives**
  - ➢ **Provide a Consolidated Multi-Program Feedback Structure**
  - ➢ **Structure the Use of Existing Assessment Models, Tools, and Techniques**

- **Two Key Components**
  - ➢ **Application Process Model**
  - ➢ **Integrated Assessment Model**

Application Process Model

Assessment Trigger

Program Characteristics

Issue Profile

Policy

Program and Enterprise Technical and Management Actions

Program Feedback

Recommendations

Core Program Assessment Process

Assessment Team - Implementation

Establish Assessment Capability

Initiate and Plan Assessment

Identify and Assess Issues

Integrate and Report Results

Management Board - Review / Approve

Improvement Actions

Evaluate Process and Results

Assessment Profile

Scope of Assessment Activities

Integrated Assessment Model

- **Four Parts**
  - ➢ **Multi-Category Issue Structure**
  - ➢ **Library of Assessment Models, Tools, and Techniques Mapped to the Issue Structure**
  - ➢ **Integrated Issue Analysis Process**
  - ➢ **Integrated Assessment Report Structure**

- **Four Primary Issue Assessment Perspectives**
  - ➢ **DoD Enterprise Managers**
  - ➢ **Acquisition Program Managers**
  - ➢ **Development Organizations**
  - ➢ **End-Users**

Multi-Category Issue Structure

- Mission Requirements / Capability / Threat
- Legislative - Policy Environment
- Process Capability
- Acquisition Capability
- Schedule and Progress
- Resources and Cost
- Product Size and Stability
- Product Quality
- System Technical Performance
- Technology Effectiveness
- Customer Satisfaction

Next Steps

- **Addition of Systems Perspective**
  - ➢ **Design Considerations**
  - ➢ **S&T Considerations**
  - ➢ **Systems / Technical Architecture**
  - ➢ **Systems Integration**
- **Fully Instantiate Program Assessment Architecture**
  - ➢ **Technical Guidance**
  - ➢ **Team Training**
- **Incremental Assessment Application - Improvement**
  - ➢ **Program**
  - ➢ **Enterprise**
- **Full DoD Implementation**
  - ➢ **PEO/PM Buy-In**
  - ➢ **Technical Collaboration**