



Fostering Partnerships in T&E and Acquisition

Emerging Technology Acquisition and T&E
Air Force Acquisition Modeling and
Simulation Improvement

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Air Force Acquisition Modeling and Simulation Improvement

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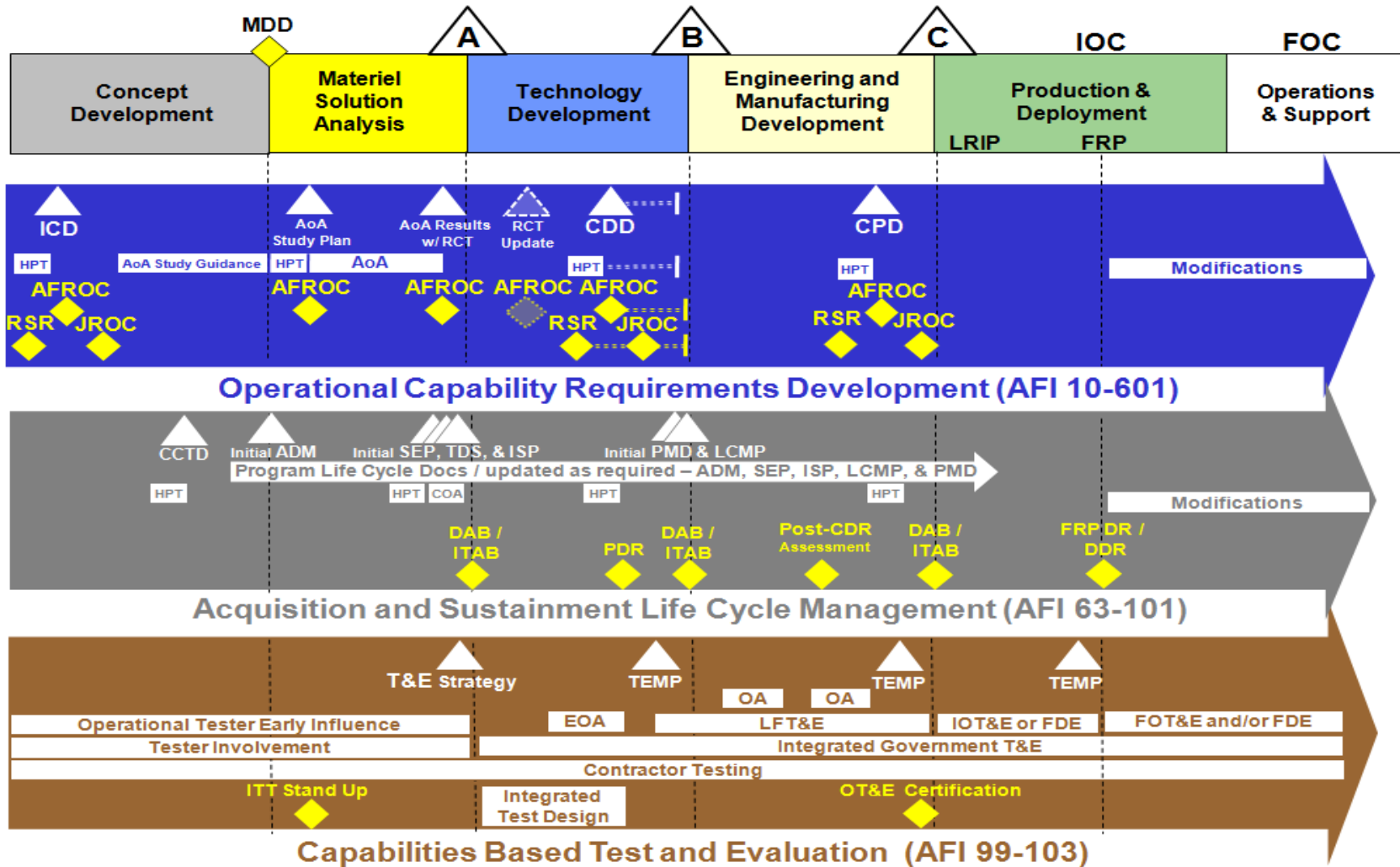
Overview



- **Integrated Life Cycle Management**
- **Air Force Acquisition Improvement Plan (AIP)**
- **Fostering Modeling & Simulation (M&S) Collaboration**
 - **Defense M&S Governance; Acquisition M&S Master Plan**
 - **Air Force M&S Governance; M&S Vision and Concepts**
- **Air Force Acquisition M&S Integrated Product Team**
 - **Air Force Acquisition M&S Policy**
 - **Air Force Acquisition M&S Strategic Plan**
- **Partnership successes**



AF Integrated Life Cycle Management



Testing doesn't cost; it pays



Acquisition Improvement Plan



- **#1: Revitalize the Air Force Acquisition Workforce**
- **#2: Improve Requirements Generation Process**
- **#3: Instill Budget and Financial Discipline**
- **#4: Improve Air Force Major Systems Source Selections**
- **#5: Establish Clear Lines of Authority and Accountability within Acquisition Organizations**



Fostering M&S Collaboration



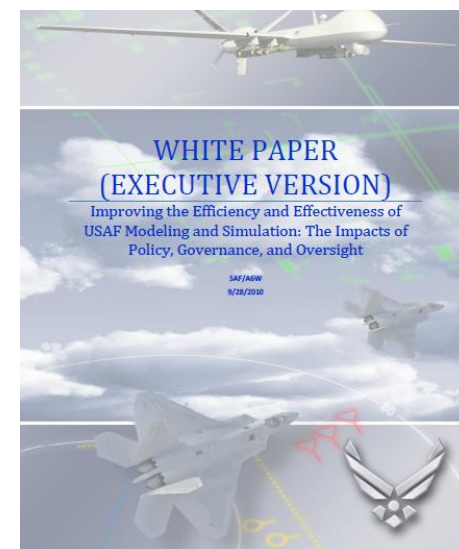
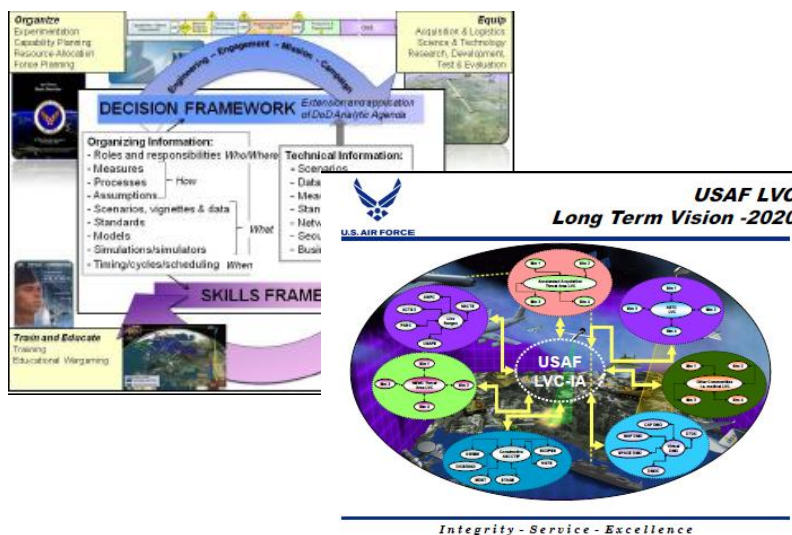
- **Defense M&S Governance**
 - Defense Acquisition M&S Master Plan
- **Air Force M&S Governance**
 - Vision
 - Enabling Concept
 - Enterprise Architecture for Live, Virtual, Constructive
 - M&S White Paper

Headquarters United States Air Force

Air Force
Modeling and Simulation Vision
for the 21st Century

Prepared by the Office of Warfighting Integration and
Chief Information Officer
(SAF/XC)

xx August 2009





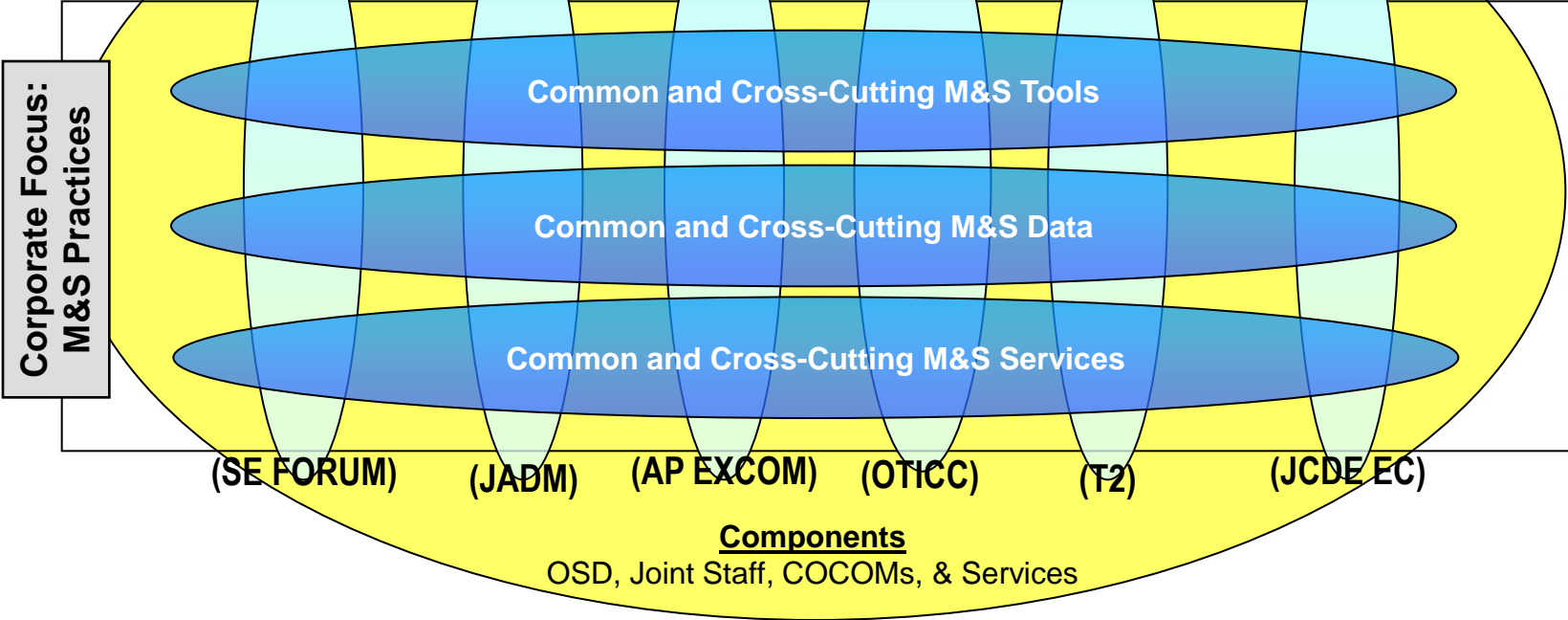
Defense M&S Governance



Organized by Communities
DoD M&S management structured to support the Communities

1/2 -Star Tri-Chair M&S Steering Committee (M&S SC) provides management.
 M&S Coordination Office (M&S CO)-- supports the M&S IPT and SC.

Acquisition AT&L	Analysis PA&E	Planning JS	Testing DOT&E	Training P&R	Experimentation JFCOM
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Goals: Interoperability, Reuse, Efficiency



Defense Acquisition M&S Master Plan



- #1: Provide necessary policy and guidance
- #2: Enhance the technical framework for M&S
- #3: Improve M&S capabilities
- #4: Improve M&S use
- #5: Shape the M&S workforce



Thematic Agendas: NEW AMSWG Schedule / Battle Rhythm



AMSWG Meeting	Acquisition Phase Focus Area	Related Milestones	Potential Discussion Areas (Metrics, Models & Simulations)
26 May 2011	(Pre-MDD) Development Planning	MDD	<ul style="list-style-type: none"> Prototyping Capability Based Assessment (CBA) Analysis of Alternatives (AoA) Model Management RFPs & Contracting Language Total Ownership Cost Modeling Life Cycle and Sustainment Data Collection Strategy/Plan ICD, CDD, CPD, PPP JODS Process Domain Modeling Dissemination / Release-ability Developmental Planning
21 Jul 2011	Matériel Solution Analysis / Concept Refinement (DP)	MS A	<ul style="list-style-type: none"> Design Material Solution Analysis (MSA) Overnight and Review / Contracting Concept of Operations Modeling Produce-ability SoS Modeling M&S Support Plan Interoperability & Warfighter Integration SEP, TES, TDS, PPP JODS, Specifications Vulnerability Modeling RAM & Supportability Modeling Obsolescence strategy Document Streamlining Certifications
15 Sep 2011	Technology Development	MS B	<ul style="list-style-type: none"> Development Systems Modeling System Threat Assessment Manpower Estimation (System manning) M&S Support Plan Hot Bench, WRAP Around Simulation DAPS Methodology Improvement Model Based Requirements Trade Study, Cost versus Capabilities Requirements Modeling Economic Analysis Affordability Assessment Environmental Safety and Occupational Health (ESOH) Metric and Models CDD, SEP, TEMP, PFP, TRA System-System Interfacs Vulnerability Modeling HMI Supportability Certifications Training Live-Fire TSE Waivers HWL, SL



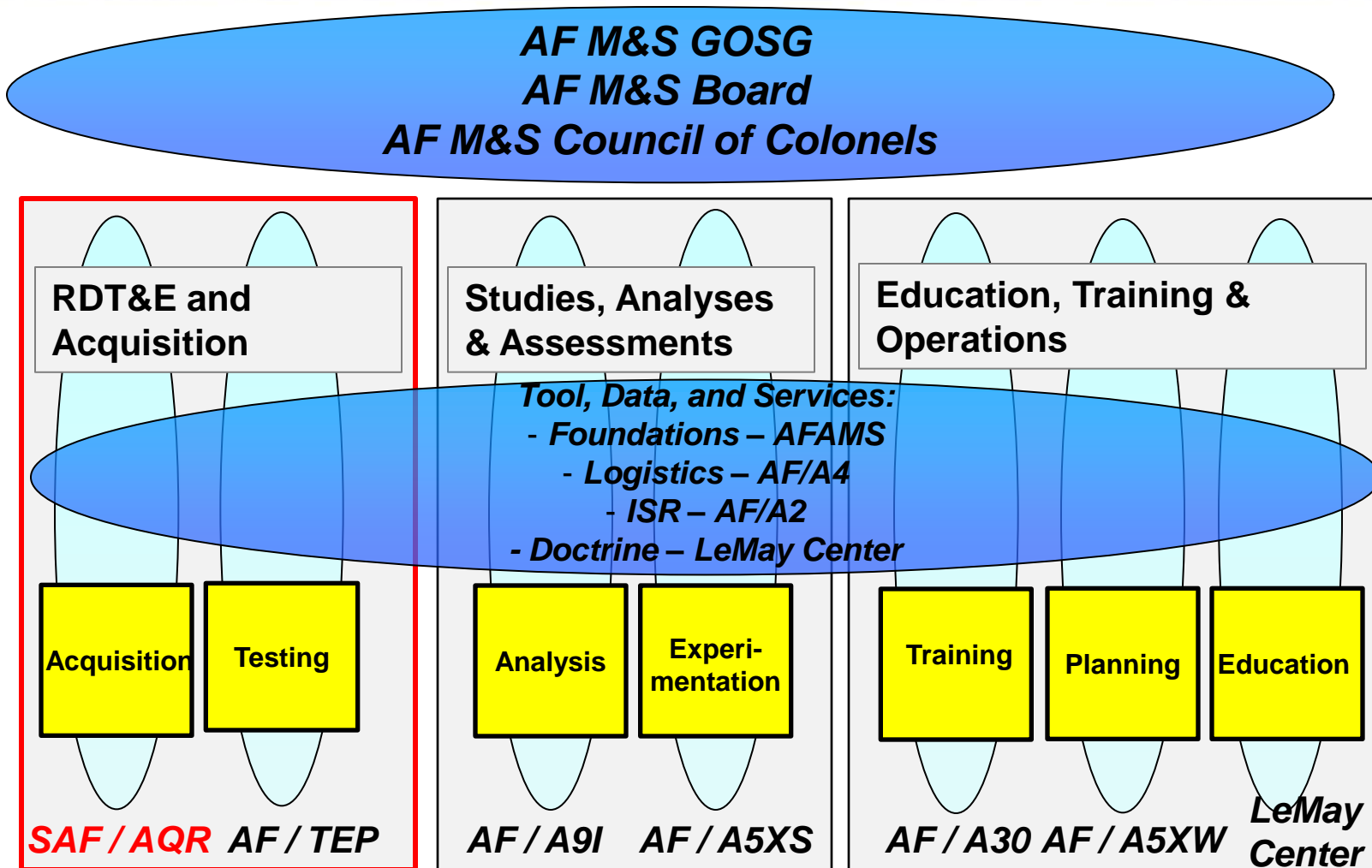
Thematic Agendas: NEW AMSWG Schedule / Battle Rhythm



AMSWG Meeting	Acquisition Phase Focus Area	Related Milestones	Potential Discussion Areas (Metrics, Models & Simulations)
10 Nov 2011	Engineering, Manufacturing & Development	MS C	<ul style="list-style-type: none"> Developmental Test and Evaluation (DT&E) Model Based Test Planning Systems Security Engineering Manufacturing Readiness Levels Live-Fire TSE Waivers (Save money?) Threat Representation Interface with CAD/CAM Product Support Modeling / Logistics Affordability Assessment M&S Feedback, Sustainment, and ECP Assessment Improve Feedback of Test Data into Models (NVA) (Modeling, and Simulation) Reuse and/or Modeling of SW Reuse CFD, SEP, TEMP, PFP Verification Program Protection Models ESOH Metric and Models Ground Testing + Modeling Risk Modeling Logical Data Models Training Certifications
26 Jan 2012	Production & Deployment	FRP	<ul style="list-style-type: none"> Operational Test & Evaluation (OT&E) Model Based Test Planning Supportability Assessment Product Support Modeling / Logistics Risk Modeling Manufacturing and Logistics Modeling M&S Feedback, Support Plan, Statement, and ECP Assessment Ground Testing (combined with real-time simulated interface saves money) Improve Feedback of Test Data into Models (NVA) PFP Validation Other Plans Training Reuse Metric and Modeling Model Management
22 Mar 2012	Operations & Support	LCS	<ul style="list-style-type: none"> Transition Sustainment and Cost Modeling Logistics, Sustainment & Supportability Modernization Cost estimating and other issues Training Contract closeout Disposal PPF PPDC Process Supportability Assessment Tech refresh HWL



Air Force M&S Governance



Due to Change



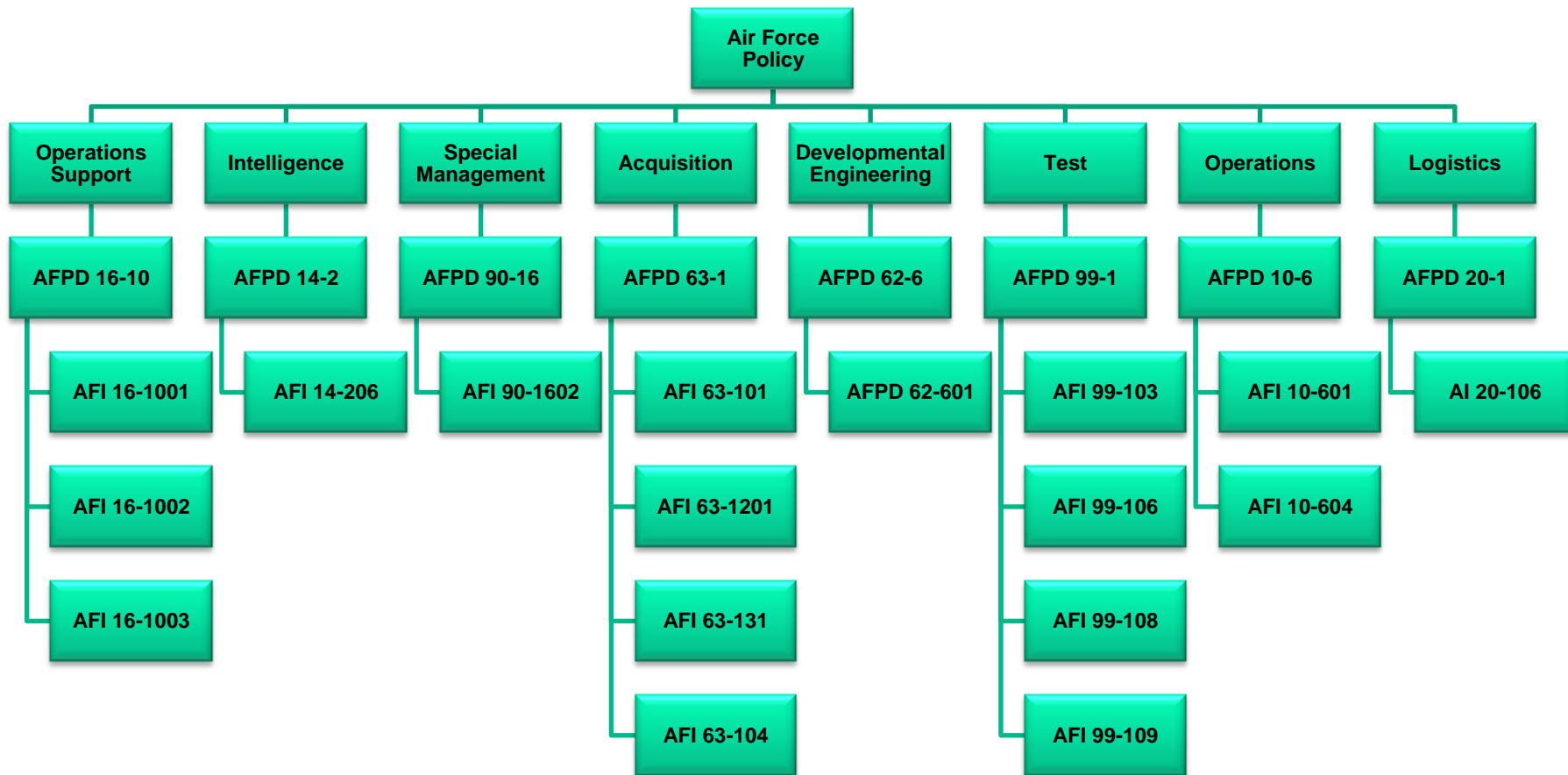
AF Acquisition M&S IPT



- **Team Charter**
 - **Forum for M&S information exchange**
 - **Consensus on common technical framework for M&S**
 - **Identify M&S capability gaps and shortfalls**
 - **Recommend integrated M&S investment strategy**
 - **Recommend M&S policy and guidance**
 - **Development**
 - **Application**
 - **Verification, validation, and accreditation (VV&A)**



AF Acquisition M&S Policy





Air Force Acquisition M&S Strategic Plan



- **#1: Promote effective M&S tools and data use [AIP #2]**
 - Provide board overview of M&S tools and data
 - Identify overarching gaps and shortfalls in M&S tools, data, services and policy
 - Provide recommendations addressing overarching gaps and shortfalls

- **#2: Foster interoperable and integrated M&S capabilities through a common framework [AIP #2, #4]**
 - Define the common framework for new and pre-existing models
 - Promote common interface and protocol standards for simulation exchange
 - Develop and implement data standards



Air Force Acquisition M&S Strategic Plan



- **#3: Improve Air Force M&S capability and credentials [AIP #2, #4]**
 - Foster effective verification and validation
 - Develop approaches for making authoritative representations of Air Force systems available across programs/domains
 - Tailor current information assurance requirements for research, development, test and evaluation (RDT&E) use
 - Improve strategies and mechanisms for sharing scenarios and scenario data

- **#4: Provide increased M&S expertise and understanding to ensure consideration of M&S in acquisition programs [AIP #1]**
 - Identify ways to prepare and certify acquisition professionals to use M&S
 - Develop methodology to encourage use of M&S in acquisition programs

Work Efforts Continue – More Successes to Follow



Partnership Successes



- **Establishment of an Acquisition Category II, Joint Interest program of record for advancing an enterprise architecture (EA) for LVC capabilities**
- **Rapid process for certifying M&S tools for use on Air Force networks**
- **High demand training course for Air Force M&S managers**
- **Policy changes to emphasize M&S as a systems engineering activity during systems acquisition**
- **Changes to the Air Force M&S governance structure (AFSO21)**
- **Re-energizing the Air Force Integrated Collaborative Environment (AF-ICE) project to use distributed Air Force assets (SIMAF, DIADS, C2 Center, etc.) for improving and refining requirements development**
- **Planning and execution of Air-Ground Integrated Layer Exploration (AGILE) Fire distributed testing event(s)**