View of the State of Joint IAMD Systems Engineering from the JPEO IAMD

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JPEO MSSET Chair

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The State of IAMD Symposium

Presentation Outline

- Intro- JPEO IAMD Video Presentation
- MSSET Systems Engineering Transition to MDA
  - JPEO MSSET Deliverables
  - MDA Led IAMD Technical Assessment
  - IAMD MOU and Governance (Where SE fits)
- Crystal Ball- Future of Joint IAMD Systems Engineering

JPEO/MSSET Accomplishments and Future JTMC Tasks

FY11 | **FY12**

OCT 10: MSSET Charter Approved by DDR&E SE

AUG 11: Senior Steering Group (SSG) Approval of MSSET Tasking and JTMC Bridge Demo

SEP 11: JTMC Bridge Concept Demo- 9 node, 8 sensor Integrated Air Picture

OCT 11: MSSET Kickoff

APR 12: AMDI SC Approved Iterative Capability Strategy In lieu of MDDs

JUL 12: AMDI SC Approved Standard Interface Bridge Approach Services to Support POM-15

Accomplishments:

SEP 11: Successful Proof of Concept; JTMC Bridge Demonstration completed

DEC 11: Formulated Iterative Capability (ICs) through 2025

Ongoing: Joint Interface Standard - Interface Control Document V2.05- Aug 12

MAR 12: Delivered JTMC Bridge Employment Options Report

NOV 12: Bridge Contractor Integration Event (CIE), Raytheon and Northrop Grumman

Ongoing: Development of JIAMD Architecture System Views- JTMC SVs 2Q12

Future Tasks:

Ongoing: Produce Navy CEC Program Software and Requirements for Bridge

Ongoing: JAT Planning; Engineering Analysis support; Pre/Post Test Analysis

OCT 12: Deliver Draft System Performance Document

MAY 13: Deliver 1st Version of JIAMD Systems Architecture for Review

JUN 13: Present Way Ahead Plan to D, CAPE and D, J8

AUG 13 Deliver Bridge ICD V2.06 - Bridge ICD Updates and Includes IFC Data

FY 15/16 Integration Events to support Joint Testing

MSSET: Multi-Service System Engineering Team

MSSET JIAMD Activity in 2013

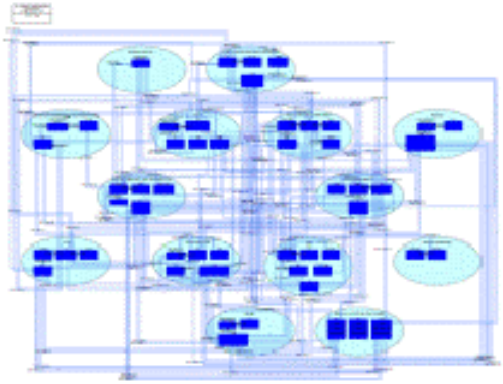
JIAMD is Joint Track Management, Classification/Discrimination/Identification, Integrated Fire Control, Automated Battle Management Aids, and Defense Planning and Defense Design

Multi-Service System Engineering Team (MSSET)	Architecture Working Group	End to End Engineering Working Group	Joint Analysis Team
Objective	Develop Concepts for the Enabling Capabilities in the Joint Kill Chain and JIAMD System Architecture Views	Support Architecture WG and recommend requirements & Engineering Changes to PoRs	Perform Analysis to Establish War-fighting Benefit of JIAMD
Activity	Concept development of Defense Planning Design, JTMC, CID, IFC, ABMA, Hit/Kill assessment, architectures Develop top level JIAMD Systems Architecture	FY-13 Focus Areas: •TBM/ABT Interoperability •Multi-network IFC (both TBM and ABT) •Advanced CID data fusion •Bridge Host Options • M&S, engineering plan for Bridge Interoperability with Link 16 •High thru-put options for RF Bridge Node JTMC Bridge ICD Development	Identification of kill chains, sensor-weapon pairs, scenarios, lay-downs, conops, metrics etc. Perform analysis using service approved models
Products	Document Concepts in Architecture Support Papers (ASPs) JIAMD System Architecture Views	Joint Performance & Capability Enhancement Documents for each technical focus area JTMC Bridge Interface Control Document	Results of Analysis using approved models (EADSIM, etc.) quantifying warfighting benefit

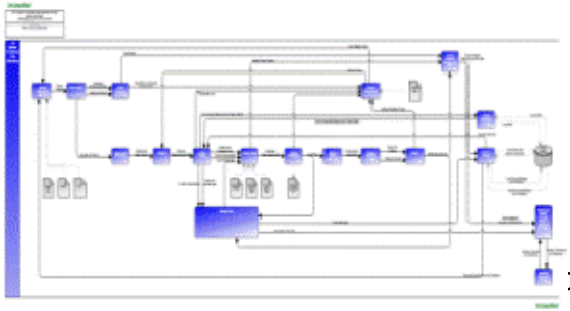
MSSET FY13 Key Tasks

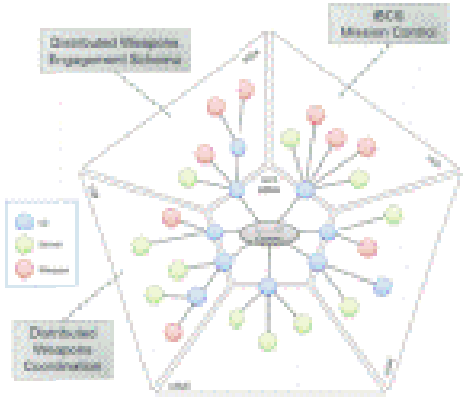
- **Systems Engineering**
  - Navy CEC Program Software Development of Requirements for the Bridge
  - Produce Bridge Interface Control Document Updates and Include IFC Data
  - Conduct Engineering Analysis to Assess Operational Benefits and Impacts of Recommendations
  - CID Data Fusion And Pedigree Engineering Assessment
  - Engineering Assessments of Multi-network Engagement Support (JIFC)
  - Assessment of High Throughput Options For An RF Bridge Node

- **Systems Architecture**
  - Use Case / Thread Pulling in Systems Architecture
  - SV-6 Development (System Data Exchanges)
  - Deliver 1st Version of JIAMD Systems Architecture for Review

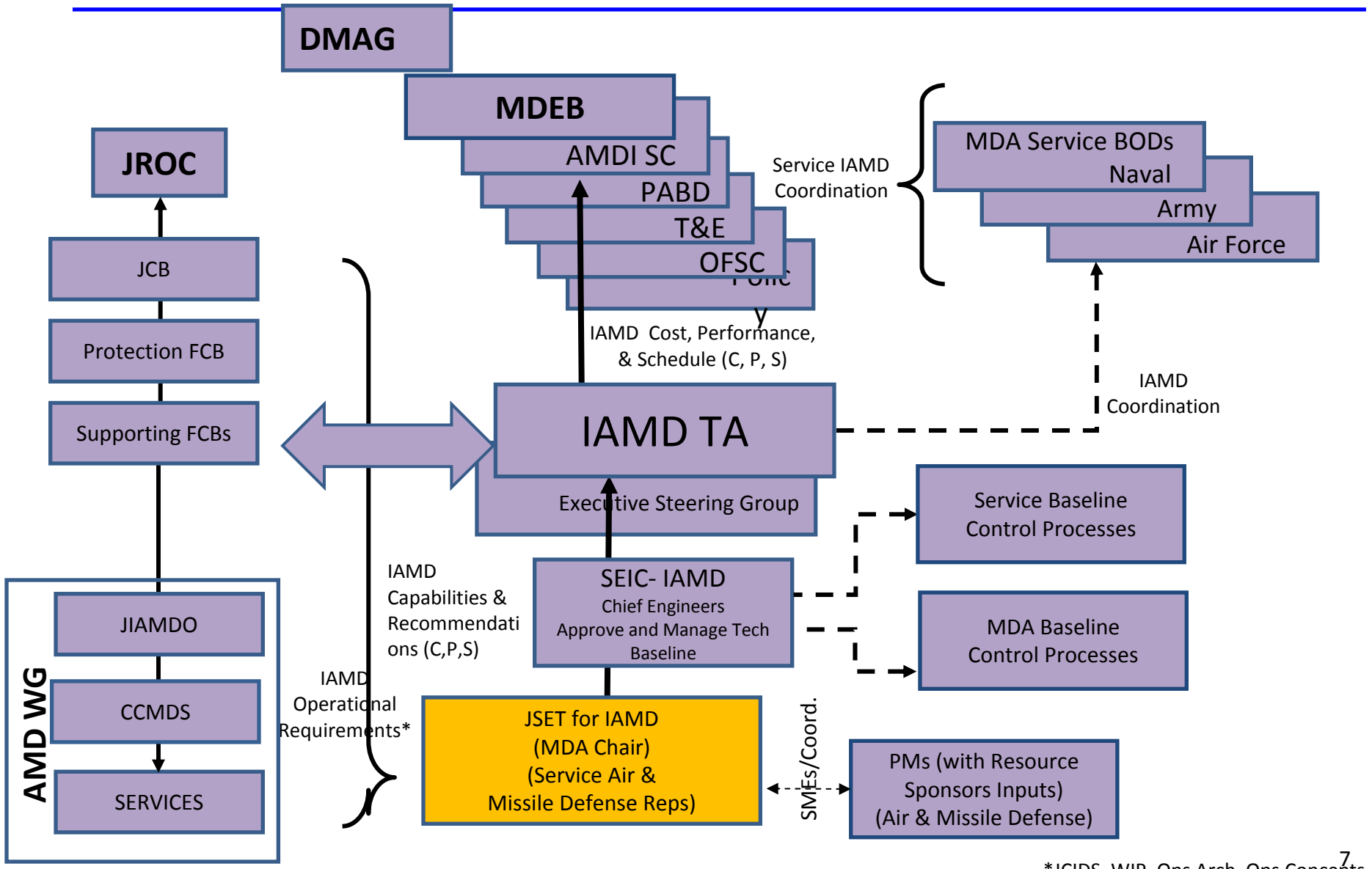


- **Requirements/Test and Evaluation**
  - Support Joint Staff CDD and CONOPS Development and VWC Event
  - Develop Test Strategy
  - Conduct Joint Analysis Team and Develop Modeling and Simulation Plan





Joint IAMD TA Process and Governance (Proposed)



*JCIDS, WIP, Ops Arch, Ops Concepts

IAMD Assessment Update

- MDA committed to lead joint re-assessment of technical approaches for achieving IAMD – focused on Joint Track Management with considerations for Integrated Fire Control

- Working with operational community to re-affirm required capabilities

- Joint Service Teams established to execute detailed assessment tasks: scenarios, requirements, technical approaches, and analysis

- POAMs established, initial Technical Interchanges conducted, collecting and reviewing existing analyses, establishing initial set of technical approaches/solutions, beginning new analyses focused on these approaches across a parametric space with metrics

Assessment Approach

- (Task 1) Understand current scenarios highlighting the need for IAMD
  - Review Blue Force laydowns, Regional Command, Control, Communications, Computers, and Battle Management (C4BM) structure for Pacific, Persian Gulf AoRs
  - *Identify two representative scenarios (from warfighter SME inputs)*
- (Task 2) Correlate Gaps as Identified by recurring DoD-Sponsored Gap Analysis and Identify opportunities for Integration-based Capability Improvements
  - Review extensive documentation of previously performed Gaps Assessments to provide prioritized Gaps list – leading to high level requirements/metrics
  - *Identify the high level requirements and performance metrics for IAMD improvements in context of warfighter-defined scenarios*
- (Task 3) Develop list of Technical Approaches and Identify models needed to address Gaps and Technical Approaches
  - Focus on Air Defense SA improvement options (via various Link/tracker architectures), updates to IAMD planning tools, consider other options qualitatively
  - *Using existing models and definitions to the maximum extent possible for evaluation of proposed technical approaches aligned with warfighter-defined scenarios*
- (Task 4) Assess Technical Approaches
  - Identify critical challenges to implementation of proposed solutions

JPEO/MSSET Next Steps

- **JPEO IAMD Transition Plan to MDA Complete**
  - Under MDA direction, FY13-14 USAF MSSE PE 606323F funding continues
  - Service MSSET SMEs and JPEO staff continue to support in FY14
  - Equipment & Software transition of JTMC Demo & Developed Bridge Capability
- **MSSET to Deliver to MDA the JIAMD Engineering Products Developed 2012-13**
  - Engineering Reports associated with Bridging of the Navy CEC with Army IFCN
  - Systems Architecture & Architecture Support Reports
  - JIAMD Iterative Capability Definitions
  - JTMC Demonstration Software and Equipment
  - JTMC Bridge Interface Control Document
- **MDA Leading Technical Assessment for Remainder of FY13**
  - MDA Developing Objectives and Plans of Assessment
  - MDA Identified Team to Lead Oversight of Technical Assessment
  - MSSET Engineering and Analysis to Support the MDA Led Technical Assessment Remainder FY13

The Future

Drivers:

✓OSD Leadership Priority

•Engineering Focus – Multiple Options to Consider

•MDA Funds for Engineering & Testing of Joint IAMD

•Military Utility of JIAMD Options

•Service Implementation Funds

The Future of Joint IAMD is _____.