# Overview and Role in DoD Governance
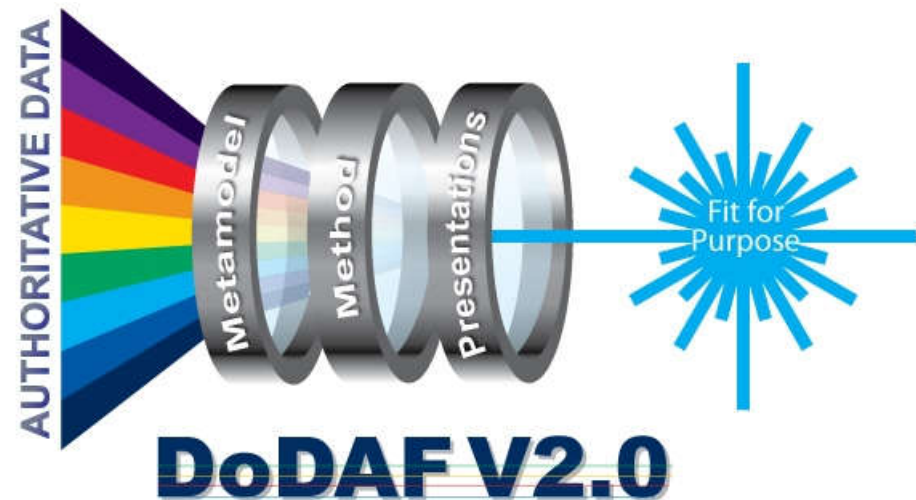
6 June 2011

David McDaniel (ctr)

DoD CIO

# Agenda

- Requirements
- Data Centric paradigm
- Metamodel
- Method
- Presentation
- Fit-for-purpose
- CM

# Requirements

# DoD's 6 Core Processes

| | Core Process | Governance | |
|---|---|---|---|
| **OPS** | Operations | JCS | |
| **JCIDS** | Joint Capability Integration Development System | JCS | |
| | | JCS | |
| **DAS** | Defense Acquisition System | USD (AT&L) | DoD Architectures Directive (Draft) OASD (CIO) |
| **SE** | Systems Engineering (SE) | USD (AT&L) | |
| **CPM** | Capability Portfolio Management (CPM) | USD (P) OASD (CIO) | |
| **PPBE** | Programming Planning and Budget Execution (PPBE) | USD (P) | |
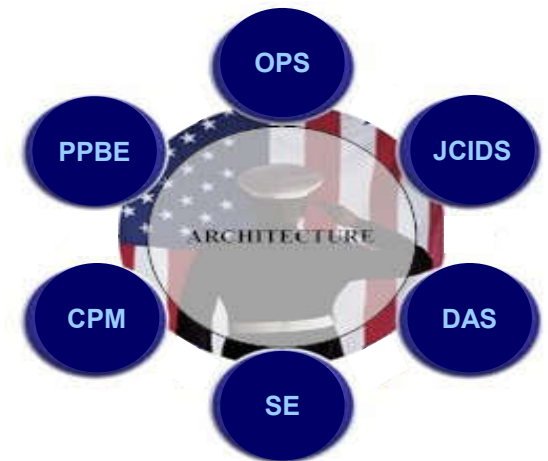
# The Processes are Intertwined
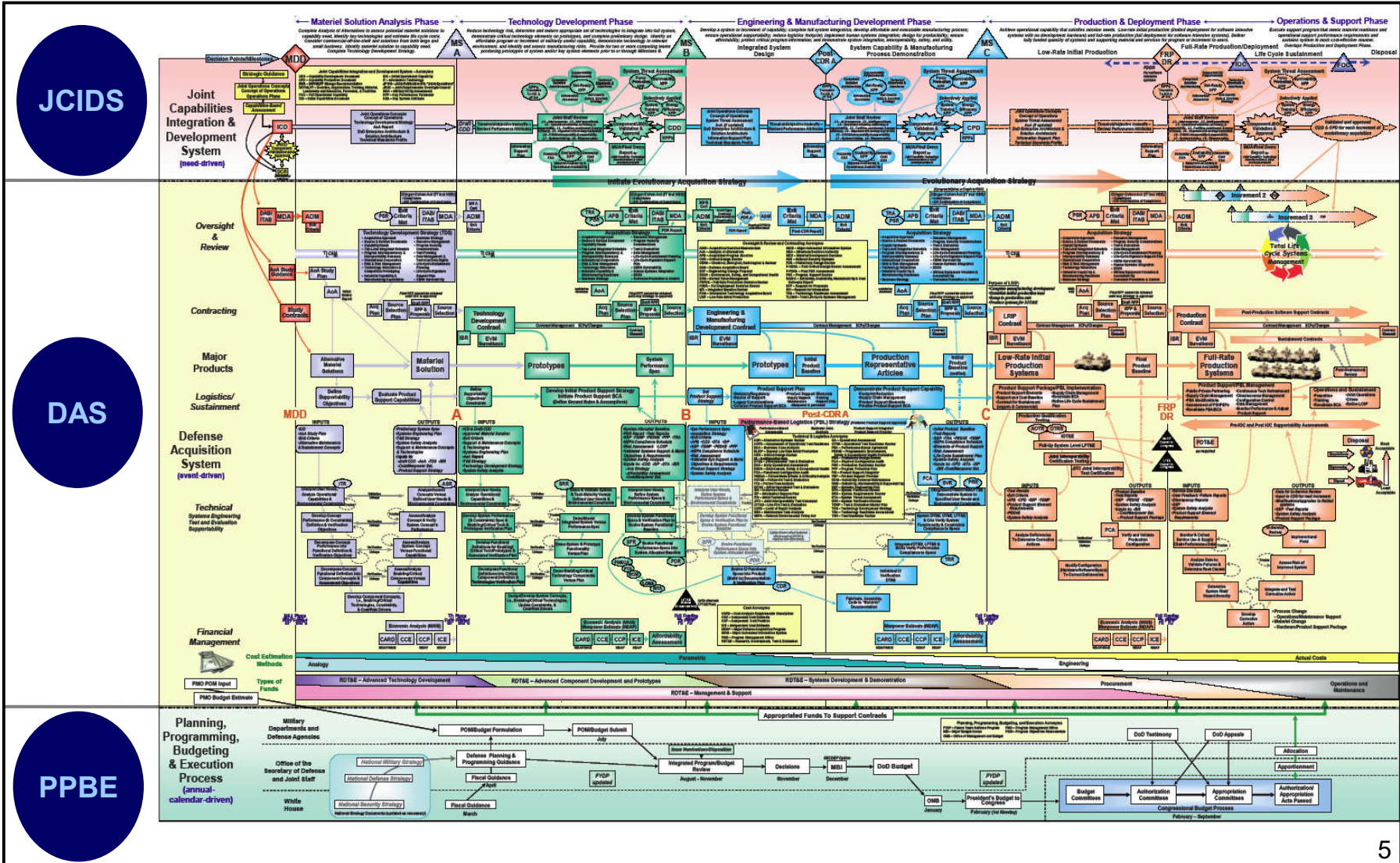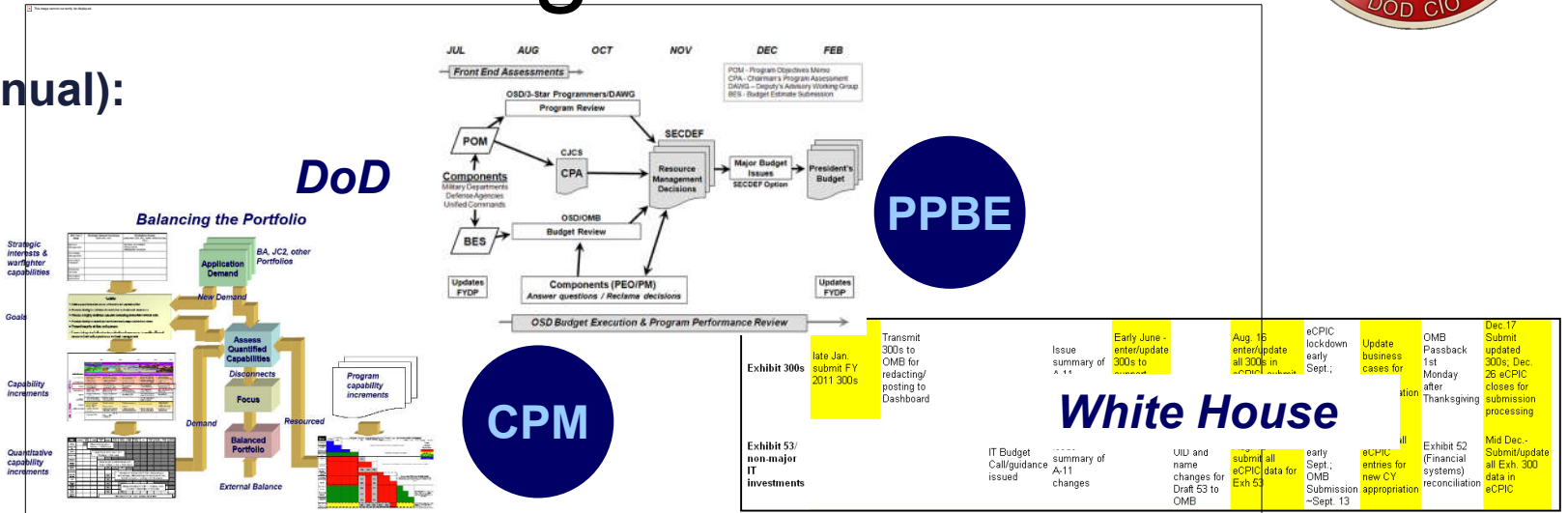
# … and asynchronous and multi-organizational

**Periodic (annual):**
- PPBE
- CPM



*DoD*

**PPBE**

**CPM**

*White House*

**Military Staff HQ (JCS)**

**JCIDS**

*Combatant Commands*
*Doctrine Commands*
*Training Commands*

**Event Driven:**
- JCIDS
- DAS
- SE
- OPS

*Presidential Cabinet Civilians*

**OPS**

**DAS**

*Acquisition Organizations*

**SE**

6
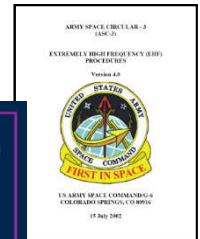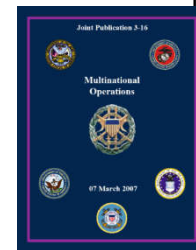
# Architectural Descriptions Support Consistency, Efficiency, and Effectiveness in the Processes

**Part of Operations Plans, including Communications Plans**

**Aligns DoD and Federal Govt budgets. Makes sure impacts are understood**

**Input to portfolio balancing decisions to optimize Capabilities**

**Defines required Capabilities, gaps / overlaps, and candidate solutions**

**Indicates acquisition cost, schedule, performance including interoperability, supportability, net-centricity, and other DOTMLPF factors**

**Provides guidance for SE designs**

OPS
JCIDS
DAS
SE
CPM
PPBE

ARCHITECTURE

# Federation of Architectures in DoD

| | | | |
|---|---|---|---|
| **Enterprise Architecture** | The explicit description and documentation of the current and desired relationships among business and management processes and information technology. (OMB Circular A-130) | **Capability Architecture** | A set of descriptions that portrays the context and rules required to achieve a desired effect through a combination of doctrine, organization, training, materiel, leadership and education, personnel, and facilities.  (Draft DoDD 8210.bb) |
| **DoD Enterprise Architecture** | A federation of descriptions that provides context and rules for accomplishing the mission of the Department of Defense. These descriptions are developed and maintained at the DoD, capability area, and Component levels and collectively define the people, | **Segment Architecture** | Detailed results-oriented (baseline and target) and a transition strategy for a portion or segment of the enterprise.  (FEA Practice Guidance, December 2006) |
| **Reference Model** | An abstract framework for understanding significant relationships among the entities of some environment.  (Reference Model for Service Oriented Architecture 1.0, Organization for the Advancement of Structured Information Standards (OASIS)) | **Solution Architecture** | A set of descriptions that portray the fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution.  (Draft DoDD 8210.bb) |
| **Reference Architecture** | An authoritative source of architecture information (within a domain) that guides and constrains the instantiations of solution architectures by providing rules, principles and holistic models and patterns of the abstract architectural elements together w | **Component\* Architecture** | A framework or structure that portrays relationships among all elements of an organizational grouping within the Department of Defense responsible for safeguarding the national security of the United States.  (Draft DoDD 8210.bb) |

*e.g., Air Force, Navy & Marine Corps, Army, Defense Logistics Agency, Defense Information Systems Agency, National Geospatial Agency, Business Transformation Agency, National Security Agency, Defense Threat Reduction Agency, Defense Intelligence Agency, Defense Technical Information Center.

# Role of Federated Architecture Types in Core Processes
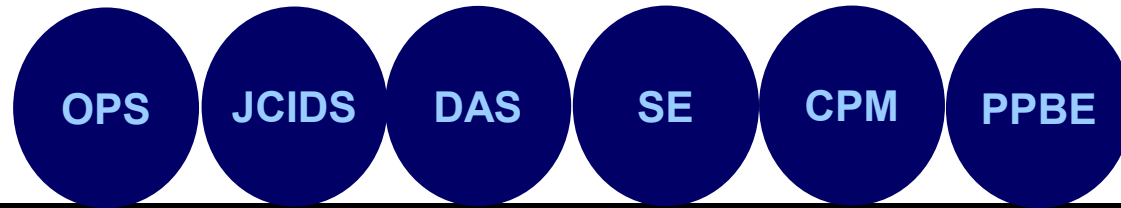
| | OPS | JCIDS | DAS | SE | CPM | PPBE |
|---|:---:|:---:|:---:|:---:|:---:|:---:|
| Enterprise Architecture | | | | | | X |
| DoD Enterprise Architecture | | | | | | X |
| Reference Model | | | | | | X |
| Reference Architecture | | | | X | X | |
| Capability Architecture | X | X | X | | X | |
| Segment Architecture | | | X | X | | |
| Solution Architecture | X | X | X | X | X | X |
| Component Architecture | | | | | | X |

# Authoritative Data and Meta Model
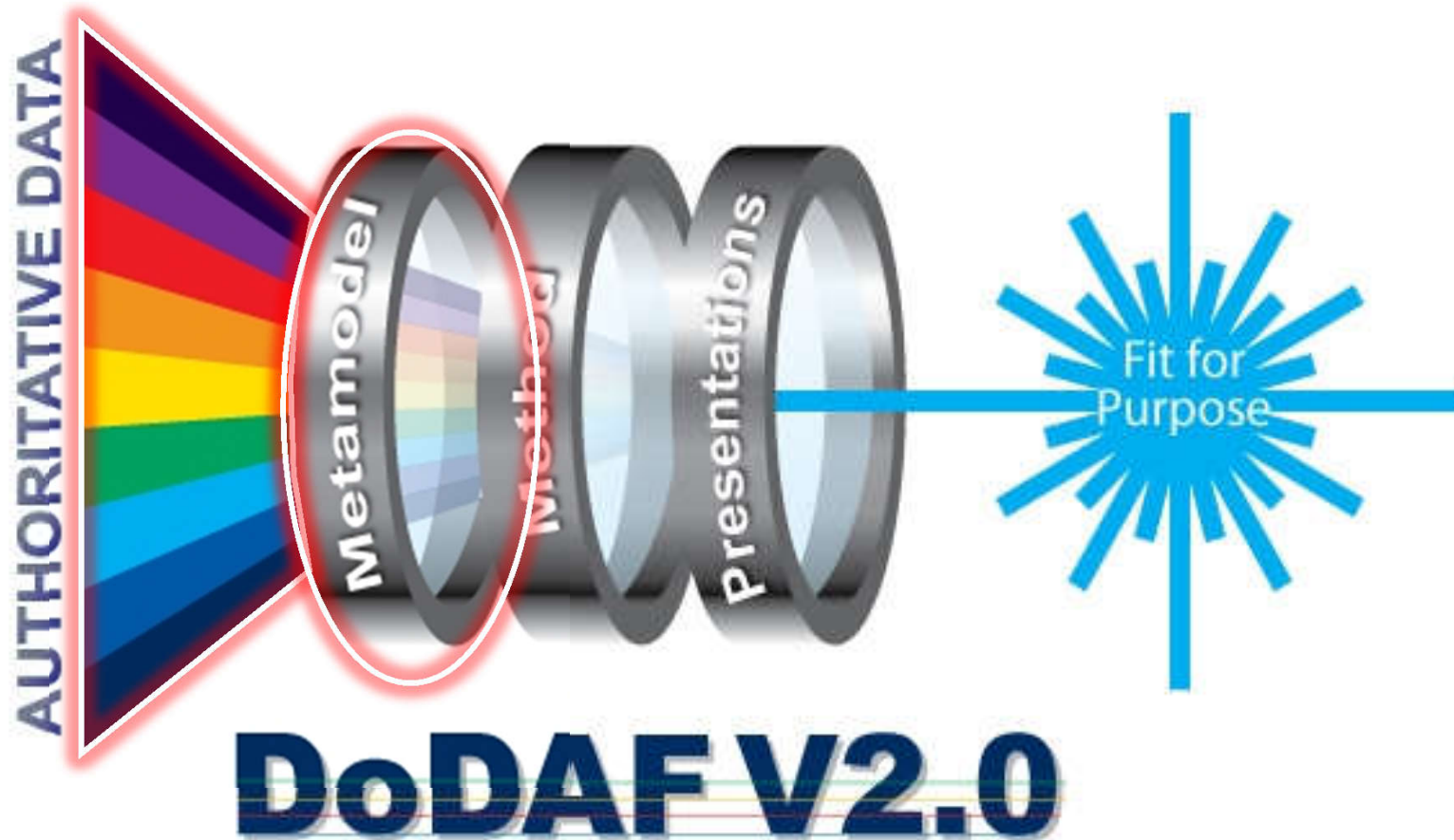
# Data-Centric Paradigm

- Prior versions of DoDAF emphasized 'products' (i.e., graphical representations or documents).

- DoDAF V2.0 emphasizes the capture and analysis of data and its relationships

- DoDAF Meta Model (DM2) provides:
  1. Precise unambiguous definition of DoDAF terms and their inter-relationships
     - Architecture views use DM2 terms in their text descriptions
  2. Exchange specifications so views can be rendered from DM2 data
     - XML, RDBMS, or OWL schemas
  3. Precision semantics for architecture integration and analysis

# Conceptual Level of DM2 is Simple
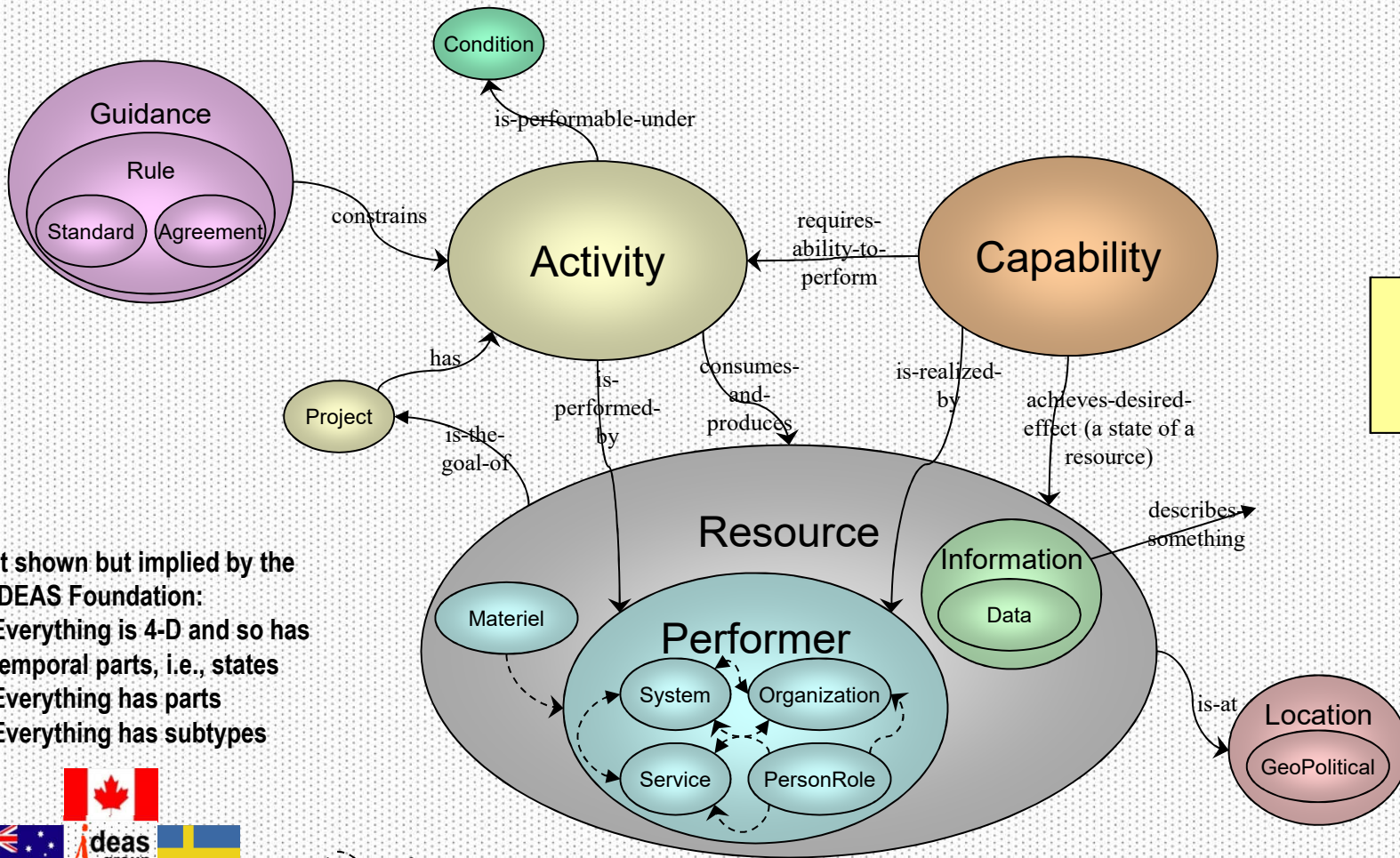


Backup slide has *term definitions*

Not shown but implied by the IDEAS Foundation:
- Everything is 4-D and so has temporal parts, i.e., states
- Everything has parts
- Everything has subtypes

*anything can have* Measures

# Method

# Methodology Neutral: DoDAF V2.0 Six-Step Architecture Development Process



- Determine **Use**, **Scope** and **Data Requirements** of Architecture
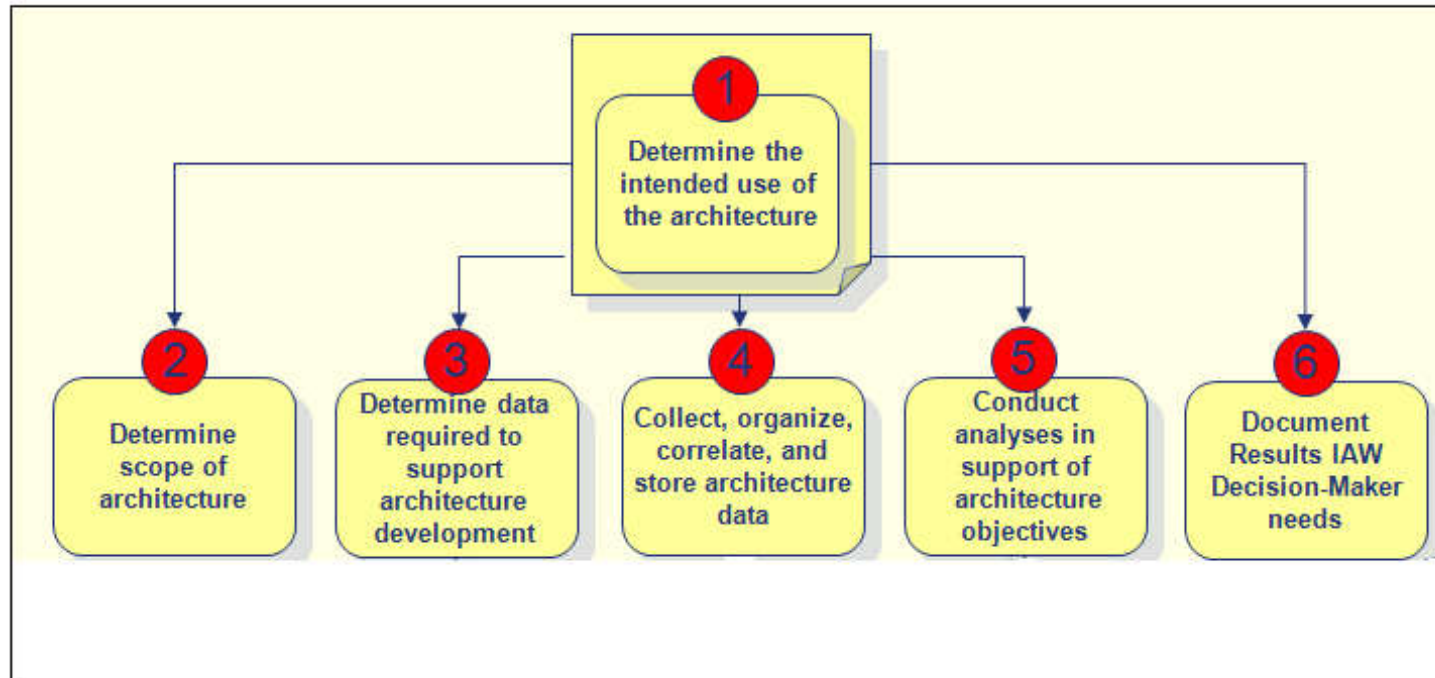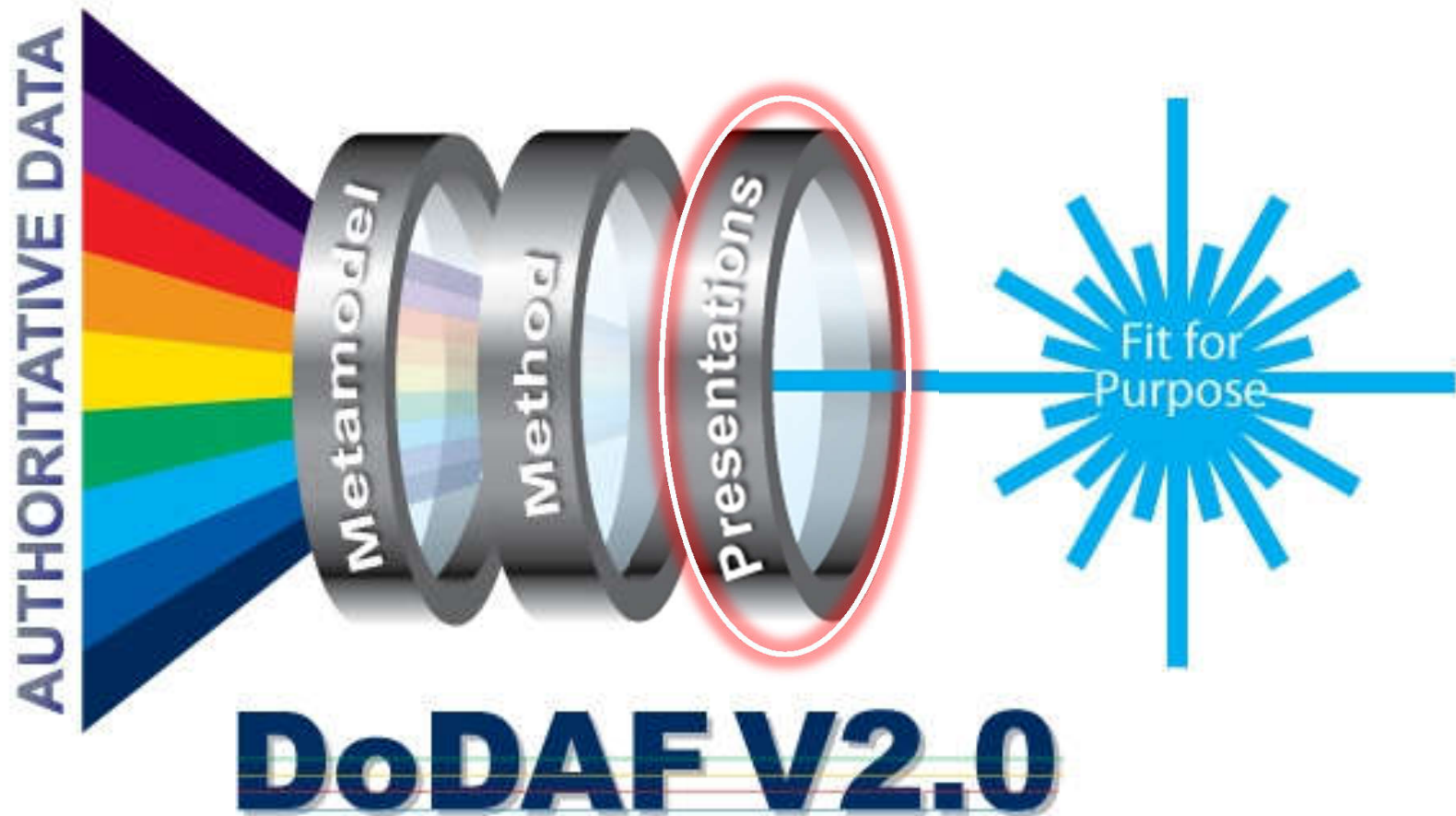
- **Architect** (build models), **analyze** and **present** (report)

# Presentations

# Viewpoints



**All Viewpoint**
Overarching aspects of architecture context that relate to all models

**Data and Information Viewpoint**
Articulate the data relationships and alignment structures in the architecture content

**Standards Viewpoint**
Articulate applicable Operational, Business, Technical, and Industry policy, standards, guidance, constraints, and forecasts

**Capability Viewpoint**
Articulate the capability requirement, delivery timing, and deployed capability

**Operational Viewpoint**
Articulate operational scenarios, processes, activities & requirements

**Services Viewpoint**
Articulate the performers, activities, services, and their exchanges providing for, or supporting, DoD functions

**Systems Viewpoint**
Articulate the legacy systems or independent systems, their composition, interconnectivity, and context providing for, or supporting, DoD functions

**Project Viewpoint**
Describes the relationships between operational and capability requirements and the various projects being implemented; Details dependencies between capability management and the Defense Acquisition System process

# Capability Views: Strategic Goals

| | |
|---|---|
| **CV-1: Vision** | The overall vision for transformational endeavors, which provides a strategic context for the capabilities described and a high-level scope. |
| **CV-2: Capability Taxonomy** | A hierarchy of capabilities which specifies all the capabilities that are referenced throughout one or more Architectural Descriptions. |
| **CV-3: Capability Phasing** | The planned achievement of capability at different points in time or during specific periods of time. The CV-3 shows the capability phasing in terms of the activities, conditions, desired effects, rules complied with, resource consumption and production, and measures, without regard to the performer and location solutions. |
| **CV-4: Capability Dependencies** | The dependencies between planned capabilities and the definition of logical groupings of capabilities. |
| **CV-5: Capability to Organizational Development Mapping** | The fulfillment of capability requirements shows the planned capability deployment and interconnection for a particular Capability Phase. The CV-5 shows the planned solution for the phase in terms of performers and locations and their associated concepts. |
| **CV-6: Capability to Operational Activities Mapping** | A mapping between the capabilities required and the operational activities that those capabilities support. |
| **OV-1: High-Level Operational Concept Graphic** | The high-level graphical/textual description of the operational concept. |

# Operational Views: Business Services

| | |
|---|---|
| **OV-2: Operational Resource Flow Description** | A description of the Resource Flows exchanged between operational activities. |
| **OV-3: Operational Resource Flow Matrix** | A description of the resources exchanged and the relevant attributes of the exchanges. |
| **OV-4: Organizational Relationships Chart** | The organizational context, role or other relationships among organizations. |
| **OV-5a: Operational Activity Decomposition Tree** | The capabilities and activities (operational activities) organized in a hierarchal structure. |
| **OV-5b: Operational Activity Model** | The context of capabilities and activities (operational activities) and their relationships among activities, inputs, and outputs; Additional data can show cost, performers, or other pertinent information. |
| **OV-6a: Operational Rules Model** | One of three models used to describe activity (operational activity). It identifies business rules that constrain operations. |
| **OV-6b: State Transition Description** | One of three models used to describe operational activity (activity). It identifies business process (activity) responses to events (usually, very short activities). |
| **OV-6c: Event-Trace Description** | One of three models used to describe activity (operational activity). It traces actions in a scenario or sequence of events. |

# Data and Information Views

| | |
|---|---|
| **DIV-1: Conceptual Data Model** | The required high-level data concepts and their relationships. |
| **DIV-2: Logical Data Model** | The documentation of the data requirements and structural business process (activity) rules. In DoDAF V1.5, this was the OV-7. |
| **DIV-3: Physical Data Model** | The physical implementation format of the Logical Data Model entities, e.g., message formats, file structures, physical schema. In DoDAF V1.5, this was the SV-11. |
| **StdV-1 Standards Profile** | The listing of standards that apply to solution elements. |
| **StdV-2 Standards Forecast** | The description of emerging standards and potential impact on current solution elements, within a set of time frames. |

*There may be cross-referenced data and information standards.*

# Service and System Views: Enabling Applications

| | |
|---|---|
| **SvcV-1 Services Context Description** | The identification of services, service items, and their interconnections. |
| **SvcV-2 Services Resource Flow Description** | A description of Resource Flows exchanged between services. |
| **SvcV-3a Systems-Services Matrix** | The relationships among or between systems and services in a given Architectural Description. |
| **SvcV-3b Services-Services Matrix** | The relationships among services in a given Architectural Description. It can be designed to show relationships of interest, (e.g., service-type interfaces, planned vs. existing interfaces). |
| **SvcV-4 Services Functionality Description** | The functions performed by services and the service data flows among service functions (activities). |
| **SvcV-5 Operational Activity to Services Traceability Matrix** | A mapping of services (activities) back to operational activities (activities). |
| **SvcV-6 Services Resource Flow Matrix** | It provides details of service Resource Flow elements being exchanged between services and the attributes of that exchange. |
| **SvcV-7 Services Measures Matrix** | The measures (metrics) of Services Model elements for the appropriate time frame(s). |
| **SvcV-10a Services Rules Model** | One of three models used to describe service functionality. It identifies constraints that are imposed on systems functionality due to some aspect of system design or implementation. |
| **SvcV-10b Services State Transition Description** | One of three models used to describe service functionality. It identifies responses of services to events. |
| **SvcV-10c Services Event-Trace Description** | One of three models used to describe service functionality. It identifies service-specific refinements of critical sequences of events described in the Operational Viewpoint. |

| | |
|---|---|
| **SV-4 Systems Functionality Description** | The functions (activities) performed by systems and the system data flows among system functions (activities). |
| **SV-5a Operational Activity to Systems Function Traceability Matrix** | A mapping of system functions (activities) back to operational activities (activities). |
| **StdV-1 Standards Profile** | The listing of standards that apply to solution elements. |
| **StdV-2 Standards Forecast** | The description of emerging standards and potential impact on current solution elements, within a set of time frames. |

*There are normally cross-referenced application and technical service standards.*

# System Views: Host Infrastructure

| | |
|---|---|
| **SV-1 Systems Interface Description** | The identification of systems, system items, and their interconnections. |
| **SV-2 Systems Resource Flow Description** | A description of Resource Flows exchanged between systems. |
| **SV-3 Systems-Systems Matrix** | The relationships among systems in a given Architectural Description. It can be designed to show relationships of interest, (e.g., system-type interfaces, planned vs. existing interfaces). |
| **SV-5b Operational Activity to Systems Traceability Matrix** | A mapping of systems back to capabilities or operational activities (activities). |
| **SV-6 Systems Resource Flow Matrix** | Provides details of system resource flow elements being exchanged between systems and the attributes of that exchange. |
| **SV-7 Systems Measures Matrix** | The measures (metrics) of Systems Model elements for the appropriate timeframe(s). |
| **SV-10a Systems Rules Model** | One of three models used to describe system functionality. It identifies constraints that are imposed on systems functionality due to some aspect of system design or implementation. |
| **SV-10b Systems State Transition Description** | One of three models used to describe system functionality. It identifies responses of systems to events. |
| **SV-10c Systems Event-Trace Description** | One of three models used to describe system functionality. It identifies system-specific refinements of critical sequences of events described in the Operational Viewpoint. |
| **StdV-1 Standards Profile** | The listing of standards that apply to solution elements. |
| **StdV-2 Standards Forecast** | The description of emerging standards and potential impact on current solution elements, within a set of time frames. |

*There are normally cross-referenced infrastructure standards.*

21

# Information Security

## Explicitly:

| | |
|---|---|
| **OV-6a: Operational Rules Model** | One of three models used to describe activity (operational activity). It identifies business rules that constrain operations. |
| **SvcV-10a Services Rules Model** | One of three models used to describe service functionality. It identifies constraints that are imposed on systems functionality due to some aspect of system design or implementation. |
| **SV-10a Systems Rules Model** | One of three models used to describe system functionality. It identifies constraints that are imposed on systems functionality due to some aspect of system design or implementation. |
| **StdV-1 Standards Profile** | The listing of standards that apply to solution elements. |
| **StdV-2 Standards Forecast** | The description of emerging standards and potential impact on current solution elements, within a set of time frames. |
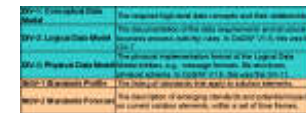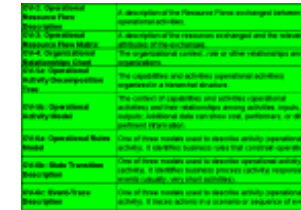
## Implicitly:
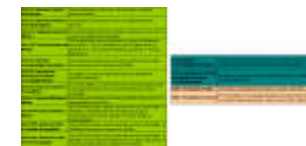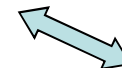
# Views are traceable and reifiable

*Same pattern applies to a an evolutionary acquisition spiral, just repeated iteratively*



| Architecture | Strategic | Executive | Architect | Engineer | Technician | Worker |
|---|---|---|---|---|---|---|

| Acquisition | | MS A | | MS B | | MS C | | |

| Systems Engineering | Initiate/CBA | ICD | SRR | SDR | CDD PDR | CDR | TRR | CPD | CDR TRR | IOC/FOC |

23
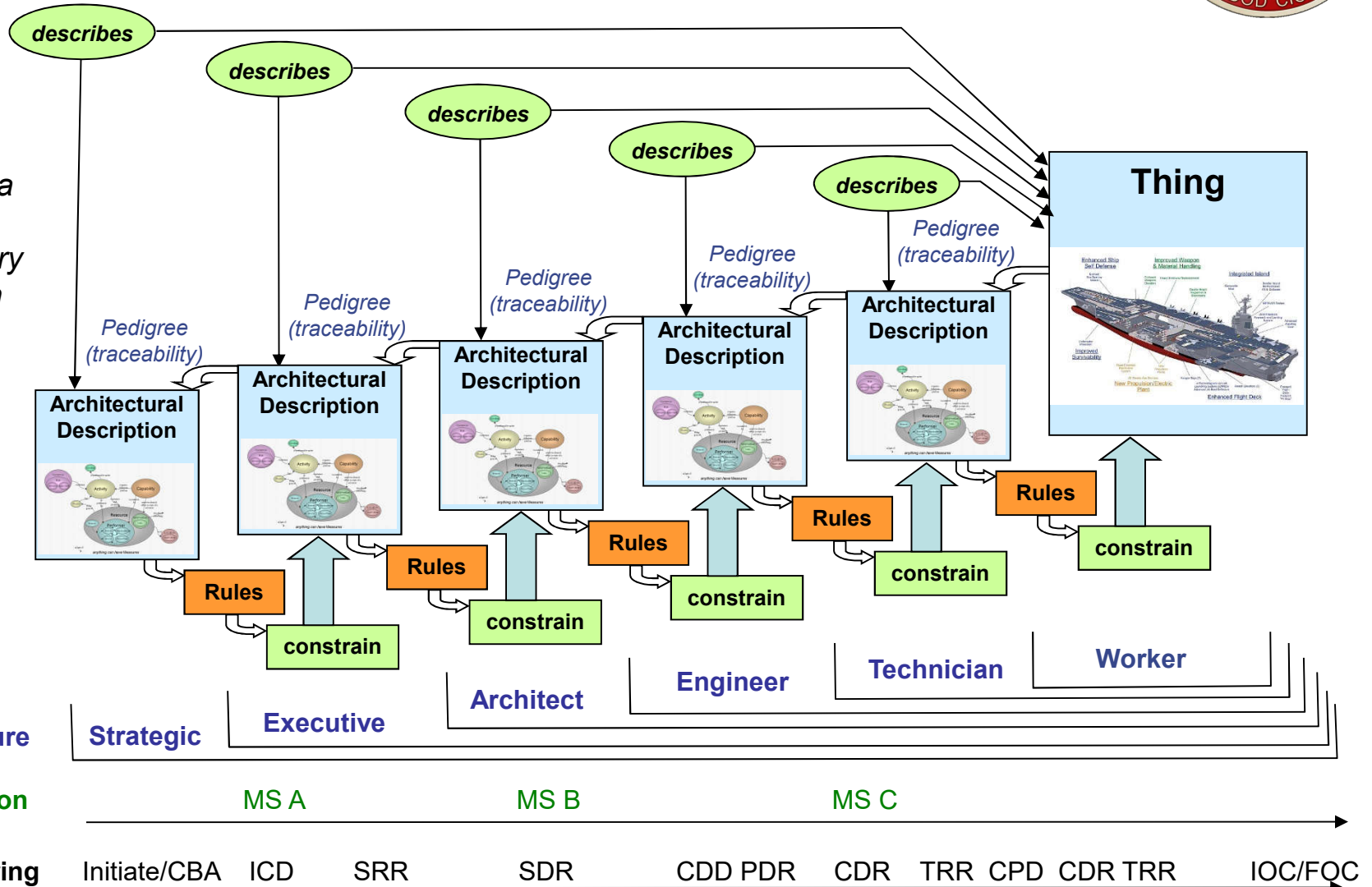
# Fit for Purpose:
*custom architectural views focused on information needs of stakeholder processes*
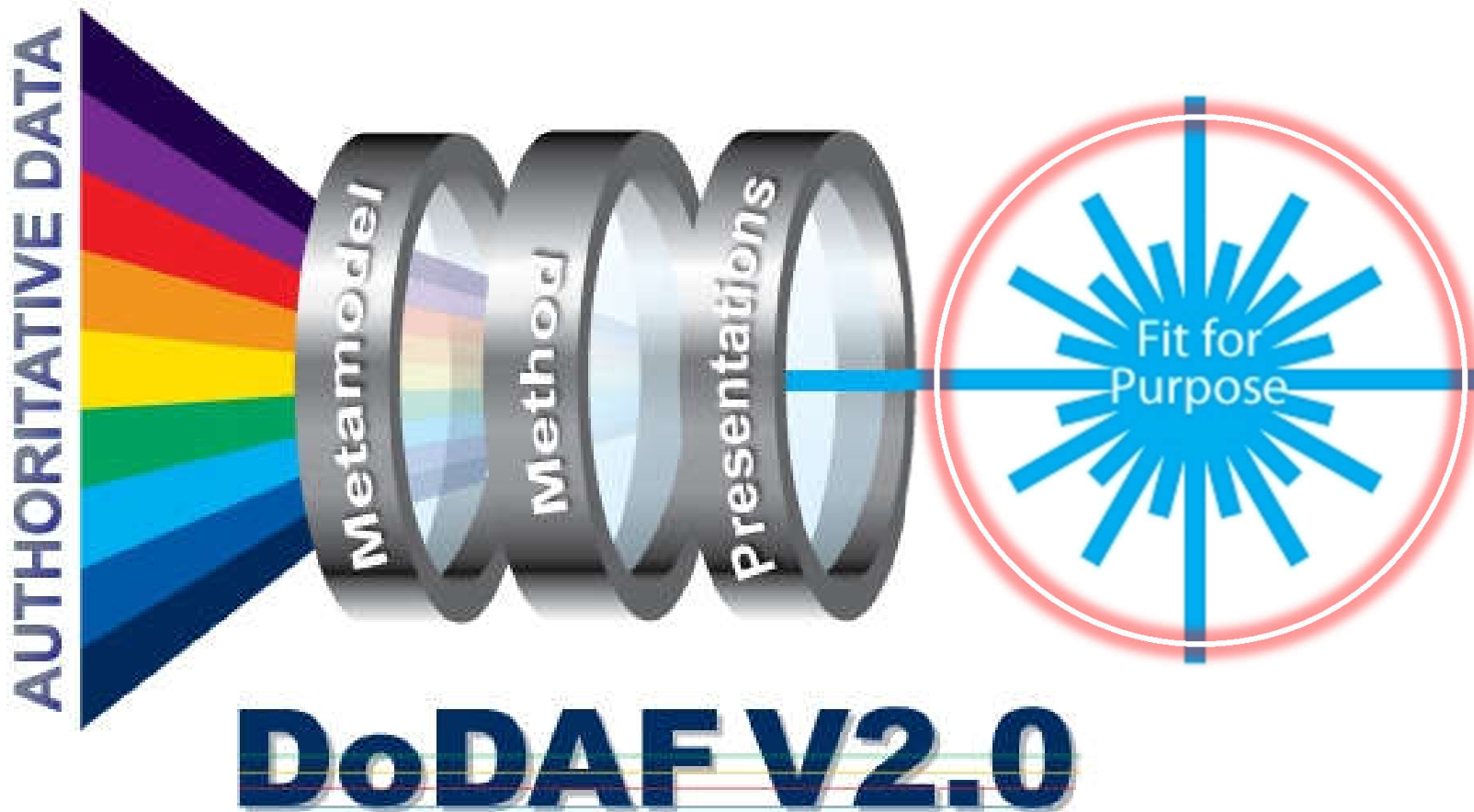
# DM2 Enables the Construction of Consistent FFP Views

1. Model (view) specifications
   - Operational
   - Capabilities
   - Services
   - Systems
   - Data and Information
   - Standards
   - Projects

2. DM2
   - Conceptual Data Model
   - Logical Data Model
   - Physical Exchange Specification

The 52 DoDAF models and the DM2 are related via a matrix*

* 52 DoDAF models X 250 DM2 data elements, referred to as the "monster matrix" because it has ~ 13,000 decision cells

# DoDAF Must Relate to Core Processes

| DoD Core Process/ Sub-Process | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Defense Acquisition System (DAS) Essential Acquisition Instruments | Work Breakdown Structure (WBS) | DoD 5000.2-R DoDD 5000.4 Mil-HDBK-881A | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | Integrated Master Plan and Schedule (IMP/IMS) | Integrated Master Plan and Integrated Master Schedule Preparation and Use Guide, Version 0.9 October 21, 2005 | ● | ● | | ● | ● | ◉ | ● | ● | | ◉ | ◉ | |
| | Risk Management Plan (RMP) | DoD 5000.2-R DoDD 5000.4 Defense Acquisition Guidebook (DAG), Section 11.4) RISK MANAGEMENT GUIDE FOR DOD ACQUISITION, Version 0.9 October 21, 2005 | ● | | | ● | ● | ● | ● | ● | | ◉ | ◉ | |
| | Technology Development Strategy (TDS) | DoDI 5000.02 Enclosure 2 Defense Acquisition Guide, Section 2.2 | ● | | | ◉ | ◉ | ● | ● | | ● | | ● | |
| | Milestone and Gate Reviews | | ● | ◉ | ⊙ | ◉ | | ● | ○ | ○ | | ◉ | ○ | ○ |
| | Acquisition Strategy (AS) | OMB Circular No. A-11 Chapter 2 Defense Acquisition Guidebook | ● | | | | | ◉ | ● | ● | | | ◉ | |

# DoDAF Must Relate to Core Processes

| DoD Core Process/ Sub-Process | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Systems Engineering -Acquisition- | System Engineering Plan (SEP) | Systems Engineering Plan Preparation Guide, Version 2.01, April 2008 | ● | ● | ◉ | ● | ● | ◉ | ● | ● | ◉ | ● | ◉ | ● |
| | Specification Development Plan (SDP) | DoD 5000.2, DoD Acquisiton Guide Book, Chapter 4 | ● | ◉ | ● | ● | ● | ◉ | ◉ | ◉ | ◉ | ◉ | | |
| | System Segment or SoS Specifications | DoD 5000.2, DoD Acquisiton Guide Book, Chapter 4 | ● | ● | ● | ● | ● | ● | ● | ◉ | ● | ● | ● | ● |
| | Interface Requirement Document (IRD)-- May be part of SoS Specification | DoD 5000.2 DoD Acquisiton Guide Book, Chapter 4 | ● | ● | ● | ◉ | | | ● | ◉ | | ● | ● | |
| | Statement of Work/Performance (SOW/P) | DoD 5000.2 DoD Acquisiton Guide Book, Chapter 4 | ● | | | ◉ | ◉ | ● | ● | ◉ | ◉ | ◉ | ● | ◉ |
| | Test and Evaluation Master Plan (TEMP) | DoD 5000.2 DoD Acquisiton Guide Book, Chapter 4,7,9 | ● | ◉ | ◉ | ◉ | ● | ● | ● | ◉ | ◉ | ◉ | ● | ● |
| | Interoperability Test Proeedures (Tied to ISP and NR-KPP)-JITC Joint Interoperability Certification | DoDD 4630.05, May 5, 2004 CJCSI 6212.01E/F DoD Acquisiton Guide Book, Chapter 4,7 | ● | ● | ● | | ● | ● | ● | ◉ | ◉ | ◉ | ● | ● |
| | Operational Test Procedures (Mission Thread Oriented) | DoD 5000.2 DoD Acquisiton Guide Book, Chapter 4,7,9 Measures Development Standard Operating Procedure (SOP) ,September 15, 2010, Director, Operational Test and Evaluation (DOT&E) sponsored Joint Test and Evaluation Methodology - Transition (JTEM-T) | ● | ● | ● | | ● | ● | ● | ◉ | ◉ | ◉ | ● | ● |

# DoDAF Must Relate to Core Processes

**DRAFT**

| DoD Core Process/ Sub-Process | | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Planning, Programming, Budgeting and Execution (PPBE) | Planning and Programming | **Joint Programming Guidance (JPG)** **Strategic Planning Guidance (SPG)** **OMB Fiscal guidance** **National Strategy for Homeland Security (NSHS)** **Quadrennial Defense Review (QDR)** | OSD (PA&E)<br><br>DoD Directive 7045.14, The Planning, Programming, Budgeting, and Execution System (PPBE), (PBBE) Integrated PBBE Guide, DSN 785-0071, 23 May 1997<br><br>Other--E-GOV, President's Management Agenda; High interest projects with Congress, GAO, OMB, or the general public; Cross-cutting initiative, e.g., Homeland Security. | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | **Program Objective Memo (POM)** **Budget Estimate Submission (BES)** | Service/Agency Submissions | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | **Chairman's Program Assessment (CPA)** | Joint Staff Review: CJCSI 8501_01 JOINT STAFF PARTICIPATION IN THE PPBE | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | **POM Issue Papers and Reclama's** | Services, Joint Staff, and OSD directorates | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | **Program Decision Memoranda (PDMs)** | DEPSECDEF | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |

**DRAFT**

**DRAFT**

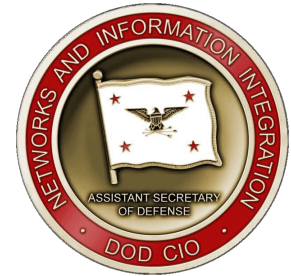| DoD Core Process/ Sub-Process | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Planning, Programming, Budgeting and Execution (PPBE) — Budgeting and Execution | *BES Review:* **Program Budget Decisions (PBDs)** | USD(C) office and OMB | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | **Major Budget Issues (MBIs)** | USD (Acquisition, Technology & Logistics) and D, PA&EUSD (Acquisition, Technology & Logistics) and D, PA&E, Services, PEOs, PMs | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | **President's Budget--FYDP:** | FYDP Program Structure Handbook (DoD 7045.7-H) Summarizes forces, resources, and equipment associated with all DoD programs approved by the SECDEF: Budget Exhibits- -Major Force Program (MFP)--Macro-level force mission or a support mission of DoD and contains the resources necessary to achieve a broad objective or plan -Program Element (PE)--Primary data element in the FYDP and normally the smallest aggregation of resources controlled by the Office of the Secretary of Defense (OSD) --R-Forms, P-Forms, Other Forms | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | DoD Regulation 7000.14-R, Financial Management Regulation, Volume 2 | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | DoD Regulation 7000.14-R, Financial Management Regulation, Volume 2 | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | *Submission to Congress:* **DoD submits a biennial budget in which the first two years of the six-year FYDP period are submitted to Congress as fully supported "stand alone" budgets.** | OSD | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | **Program Change Proposals (PCPs) Budget Change Proposals (BCPs)** | Services, Defense Agencies, and COCOMs | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | **Execution Review** | Concurrent with the Program and Budget reviews | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |

# DoDAF Must Relate to Core Processes

| DoD Core Process/ Sub-Process | | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cappability Portfolio Management (CPM) | Information Technology Portfolio Management DoDD 8115.01 | **Component Portfolio--IT investments align to Mission Area, and subportfolio or capability area portfolios as appropriate:** <br>**-Warfighting Mission Area (WMA)** <br>**-Business Mission Area (BMA)** <br>**-DoD portion of Intelligence Mission Area (DIMA)** <br>**-Enterprise Information Environment (EIE) Mission Area (EIEMA)** | DoD <br>DoDD 8115.01 October 10, 2005, Information Technology Portfolio Management <br>OMB <br>Circular A-11, Exhibits 53 and 300 <br>Congressional <br> -E-Government Act of 2002 (Public Law 107-347), December 17, 2002 <br> -FY03 DoD Appropriation House Report 4546, Title III, Section 351 <br> -FY05 National Defense Authorization Act, "Defense Business Enterprise Architecture, System Accountability, and Conditions for Obligation of Funds for Defense Business System Modernization," Sec 332 § 2222 (h) Budget Information <br><br>Note: <br>Investments > $30M, information similar to EX 300/Capital Investment Report (CIR) <br>For Investment >$10M but <$30M, minimal program information (Name, Description, Funding request) | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | **Identify opportunities for IT investments, and resolve cross-Mission Area issues** <br>**Establish guidance for managing portfolios** <br>**Provide strategic direction for the Enterprise portfolio** | | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |

**DRAFT**

# DoDAF Must Relate to Core Processes

| DoD Core Process/ Sub-Process | | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cappability Portfolio Management (CPM) | Capability Portfolio Management (CPM) DoDD 7045.20 | **Joint Capability Profiles (JCA Tier 1):** <br>-**Command and Control** <br>-**Battle Space Awareness** <br>-**Net Centric** <br>-**Logistics** <br>-**Building Partnerships** <br>-**Protection** <br>-**Force Support** <br>-**Force Application** <br>-**Corporate Management and Support** | DoDD 7045.20 Capability Portfolio Management 2008 <br> -Deputy's Advisory Working Group (DAWG) <br> -Joint Requirements Oversight Council (JROC) <br> -Defense Acquisition Board (DAB) <br> JCA Management Plan (JCAMP), 27 January 2010 | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |
| | | **Capability Portfolio Strategic Plans** <br> **CPM Recommendations** | DoDD 7045.20 Capability Portfolio Management 2008 <br> -Deputy's Advisory Working Group (DAWG) <br> -Joint Requirements Oversight Council (JROC) <br> -Defense Acquisition Board (DAB) | ● | | | ● | ◉ | ◉ | ● | ● | | ◉ | | |

# DoDAF Must Relate to Core Processes

**DRAFT**

| DoD Core Process/ Sub-Process | | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Joint Capabilities Integration and Development System (JCIDS) | Requirements Development | Joint Capabilities Document (JCD) | CJCSI 3170-01G | ◉ | ◉ | ◉ | ◉ | ● | ● | ● | | ◉ | ◉ | ◉ | ● |
| | | Initial Cpabilities Document (ICD) | CJCSI 3170-01G | ● | ◉ | ◉ | ◉ | ● | ● | ● | | ◉ | ◉ | ◉ | ● |
| | | Cpabilities Development Document (CDD) | CJCSI 3170-01G | ● | ● | ● | ◉ | ● | ● | ● | ◉ | ◉ | ◉ | ● | ● |
| | | Cpabilities Production Document Document (CPD) | CJCSI 3170-01G | ● | ● | ● | ◉ | ● | ● | ● | ● | ◉ | ◉ | ● | ● |
| | Interoperability | Net Readiness Key Performance parameter (NR-KPP) (Mission Analysis (MA) , Information Analysis (InA), Systems Engineering (SE)) | CJCS 6212_01E/F | ● | ● | ● | ◉ | ● | ◉ | ● | ● | ◉ | ◉ | ● | ● |
| | | Information Support Plan (ISP) Enhanced Information Support Plan (EISP) Tailored Information Support Plan (TISP) | CJCS 6212_01E/F | ● | ● | ● | ◉ | ● | ● | ● | ● | ◉ | ● | ● | ● |

**DRAFT**

# DoDAF Must Relate to Core Processes

| DoD Core Process/ Sub-Process | | Core Process Primary Products | Primary Directive, Instruction, or Decision Authority | Performer | Resource Flow | Information And Data | Reification Levels | Organizational Structure | Capability | Services | Project | Pedigree | Rules | Measure | Location |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operations Planning | Joint Strategic Planning System (JSPS) | -National Military Strategy (NMS) -Joint Strategic Capabilities Plan (JSCP) -Guidance for Employment of The Force (GEF) -CJCS Risk Assessment -Unified Command Plan (UCP) | CJCSI 3100_01B | ◉ | ◉ | ◉ | ◉ | ● | ● | ● | ◉ | ● | ● | ● | ● |
| | | Guidance for the Development of the Force (GDF) | CJCSI 3100_01B | ● | ● | ◉ | ◉ | ● | ● | ● | ◉ | ● | ● | ● | ● |
| | Joint Operations Planning and Execution System (JOPES) | Operations Plans (OPLANS) -Time-Phased Force and Deployment Data (TPFDD) -ROE/Rules for the Use of Force (RUF) -Commander's Critical Information Requirements (CCIRs) | CJCSM 3122.02B CJCSM 3122.01 CJCSM 3122.03 | ● | ● | ◉ | ◉ | ● | ● | ● | ◉ | ● | ● | ● | ● |
| | | Communications System Estimate (CSE) | CJCSM 3122.01 | ● | ● | ● | ◉ | ◉ | ● | ● | | | ◉ | ● | ● |
| | | Functional Plans (FUNCPLAN) | CJCSM 3122.01 | ● | ● | ● | ● | ● | ● | ● | | | ● | ● | ● |
| | | Operation Orders (OPORDs) | CJCSM 3122.01 | ● | ● | ● | ● | ● | ● | ● | | | ● | ● | ● |

# DoDAF is under configuration control

NSA | AF | DoN | Army | Marine Corps | DISA | DISA | DISA

**FAC – Voting – 23* votes**

DoD CIO

JFCOM | STRATCOM | JCS J6 | DCMO | USD(I) | P&R | AT&L | DNI CIO
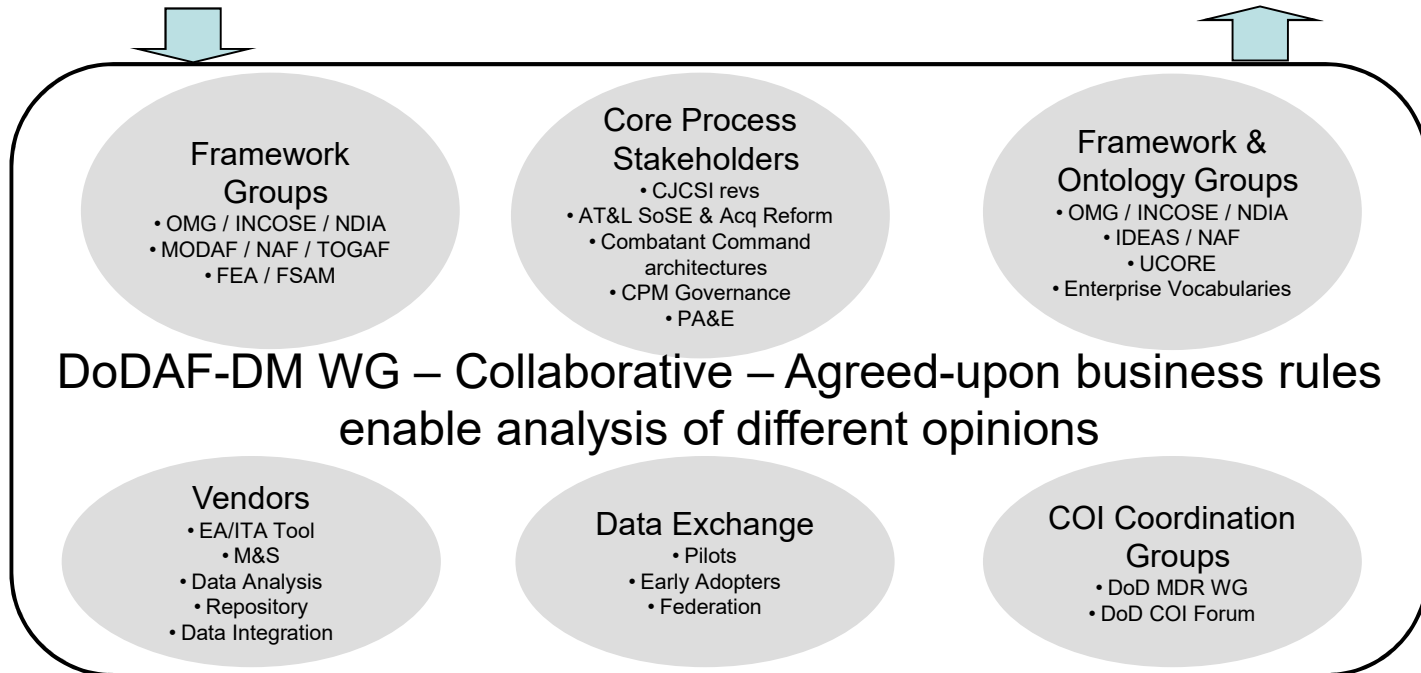
* Some Components have multiple members

CR Technical Redirection •
CR Prioritization Redirection •

- DoDAF-DM2 Configuration Status Accounting Report (CSAR)
- DoDAF-DM2 Baseline Status
- DoDAF-DM2 WG Activity Summaries
- COI Metrics and Progress Report

**Framework Groups**
- OMG / INCOSE / NDIA
- MODAF / NAF / TOGAF
- FEA / FSAM

**Core Process Stakeholders**
- CJCSI revs
- AT&L SoSE & Acq Reform
- Combatant Command architectures
- CPM Governance
- PA&E

**Framework & Ontology Groups**
- OMG / INCOSE / NDIA
- IDEAS / NAF
- UCORE
- Enterprise Vocabularies

- 500+ member
- Meets bi-weekly

## DoDAF-DM WG – Collaborative – Agreed-upon business rules enable analysis of different opinions

**Vendors**
- EA/ITA Tool
- M&S
- Data Analysis
- Repository
- Data Integration

**Data Exchange**
- Pilots
- Early Adopters
- Federation

**COI Coordination Groups**
- DoD MDR WG
- DoD COI Forum

To join, go to DoDAF 2.0 website

34

# Summary

- DoDAF 2 supports DoD's six core processes through:
  1. Data centricity and a meta model that:
     - Defines view terms and inter-relationships
     - Provides a way to develop exchangeable, integrateable, and analyzeable architecture data
  2. Methodology flexibility
  3. 8 viewpoints
     - 52 pre-defined view models
  4. Means to create Fit-For-Purpose views
- It is under a flexible CM process that allows for all to contribute but for formal accountability by Components → evolution of DoDAF to meet future DoD needs



AUTHORITATIVE DATA

Metamodel | Method | Presentations

Fit for Purpose

**DoDAF V2.0**

# Questions?

**References**

1. DoD CIO; DoDAF Architecture Framework, Version 2.02; http://cio-nii.defense.gov/sites/dodaf20/

2. Chairman of the Joint Chiefs of Staff; CJCSI 3170.01G, Joint Capabilities Integration and Development System; 9 March 2009

3. Undersecretary of Defense, Acquisition, Technology, and Logistics (USD(AT&L)); DODD 5000.2, Operation of the Defense Acquisition System; December 8, 2008

4. Chairman of the Joint Chiefs of Staff; CJCSI 6212.02E, Interoperability and Supportability of Information Technology and National Security Systems; December 15, 2008

5. Assistant Secretary of Defense, Comptroller (ASD(C); DODI 7045.14, The Planning, Programming, and Budgeting System (PPBS); November 21, 2003

6. Deputy Secretary of Defense; DTM-04-005, Control of Planning, Programming, Budgeting and Execution (PPBE) Documents and Information; May 27, 2004

7. Under Secretary of Defense, Policy (USD(P)); DODD 7045.20, Capability Portfolio Management; September 25, 2008

# Questions?

# DoDAF 2 Conceptual Data Model Terms

- **Activity**: Work, not specific to a single organization, weapon system or individual that transforms inputs (Resources) into outputs (Resources) or changes their state.
- **Resource:** Data, Information, Performers, Materiel, or Personnel Types that are produced or consumed.
  - **Materiel:** Equipment, apparatus or supplies that are of interest, without distinction as to its application for administrative or combat purposes.
  - **Information:** The state of a something of interest that is materialized -- in any medium or form -- and communicated or received.
    - **Data**: Representation of information in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. Examples could be whole models, packages, entities, attributes, classes, domain values, enumeration values, records, tables, rows, columns, and fields.
  - **Performer**: Any entity - human, automated, or any aggregation of human and/or automated - that performs an activity and provides a capability.
    - **Organization**: A specific real-world assemblage of people and other resources organized for an on-going purpose.
    - **System:** A functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements.
    - **Person Role:** A category of persons defined by the role or roles they share that are relevant to an architecture.
    - **Service:** A mechanism to enable access to a set of one or more capabilities, where the access is provided using a prescribed interface and is exercised consistent with constraints and policies as specified by the service description. The mechanism is a Performer. The capabilities accessed are Resources -- Information, Data, Materiel, Performers, and Geo-political Extents.
- **Capability**: The ability to achieve a Desired Effect under specified (performance) standards and conditions through combinations of ways and means (activities and resources) to perform a set of activities.
- **Condition**: The state of an environment or situation in which a Performer performs.
- **Desired Effect:** A desired state of a Resource.
- **Measure:** The magnitude of some attribute of an individual.
- **Location**: A point or extent in space that may be referred to physically or logically.
- **Guidance:** An authoritative statement intended to lead or steer the execution of actions.
  - **Rule:** A principle or condition that governs behavior; a prescribed guide for conduct or action.
    - **Agreement**: A consent among parties regarding the terms and conditions of activities that said parties participate in.
    - **Standard**: A formal agreement documenting generally accepted specifications or criteria for products, processes, procedures, policies, systems, and/or personnel.
- **Project**: A temporary endeavor undertaken to create Resources or Desired Effects.
- **Geopolitical Extent**  A geospatial extent whose boundaries are by declaration or agreement by political parties.