



The Immediate Future of EVMS Within DoD and It's Industrial Base

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EVMS Issue Categories

▶ Institutional

- WSARA, PARCA and their implications for EVMS

▶ Technical

- AV SOA and the emerging AT&L decision-data infrastructure

▶ Policy & EV's changing role

- AT&L preferred model of decision-making is changing
- EVMS Compliance will be a ***Program evaluation factor***



Institutional Issues: Weapon Systems Acquisition Reform Act (WSARA)

- ▶ ***Creates Director, Cost Assessment & Program Evaluation***
 - Requires Senate Confirmation
 - Establishes two Deputies
 - Deputy Director, Cost Assessment
 - Deputy Director, Program Evaluation

- ▶ ***Creates Director, Developmental Test & Evaluation***
 - Appointed by SECDEF

- ▶ ***Creates Director, Systems Engineering***
 - Appointed by SECDEF

- ▶ ***Creates Senior Official for Performance Assessment & Root Cause Analysis (PARCA)***
 - Appointed by SECDEF



Current PARCA Vision

- ▶ PARCA has ***not*** been established yet
 - Package is in DepSecDef's office
 - Comments below reflect last draft of office charter

- ▶ Three functions of PARCA office
 - “Performance Assessment”; function in statute
 - “Root Cause Analysis”; function in statute
 - “EVMS”; more on this to follow . . .

- ▶ PARCA's institutional role
 - Responsible for providing USD(AT&L) execution-phase situational awareness of programs for which he is responsible
 - Performs forensics for troubled programs
 - ***Annually reports to the four defense committees on activities***



PARCA Does NOT . . .

- ▶ Forecast program requirements, in general; for example:
 - Funding requirements
 - Total Life Cycle Cost
 - Program completion

- ▶ Evaluate alternative means to execute; for example:
 - Acquisition strategies
 - Contracting terms/incentives
 - Competitive award strategies

- ▶ Compare alternative means to achieve an end; for example:
 - Comparisons of existing systems vs. new system
 - Evaluations of alternate approaches
 - Cost - effectiveness

PARCA is the police in the highway median with the radar gun



PARCA and EVMS

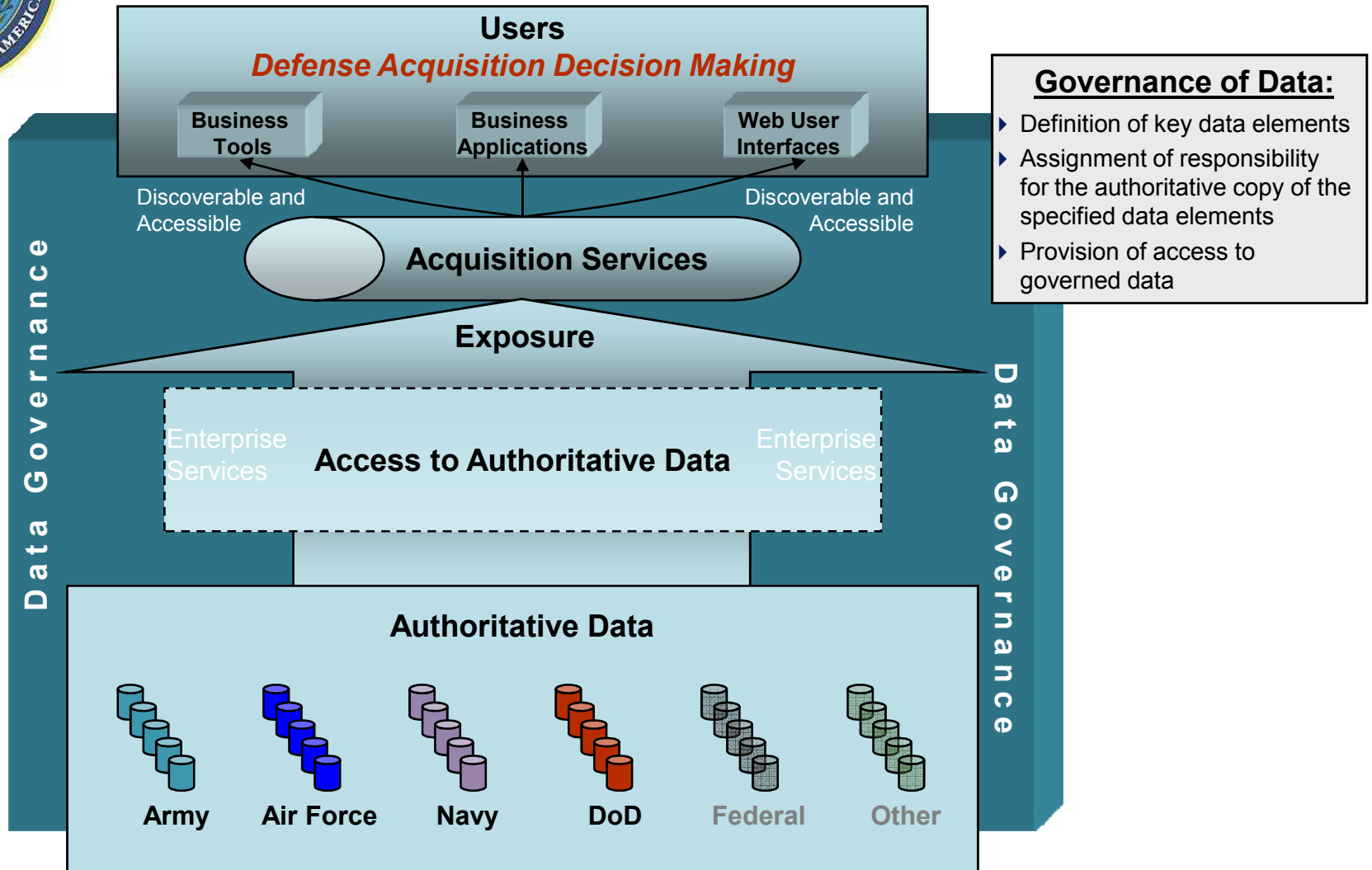
- ▶ Within AT&L, what office cares most about EV data? PARCA
 - Establishment of office is a chance to bring coherence to EV policy

- ▶ PARCA EVMS division will perform the following:
 - EVMS policy
 - Collection, validation and dissemination (i.e., Central Repository)
 - Compliance (more to follow . . .)

- ▶ PARCA will *not* be responsible for EVMS:
 - Field-level implementation and monitoring (DCMA)
 - Human capital initiatives (A&T)



SOA Governance and Technical Approach



SOA Separates Data from Application and Tools



Where do the contracts come from? Governance

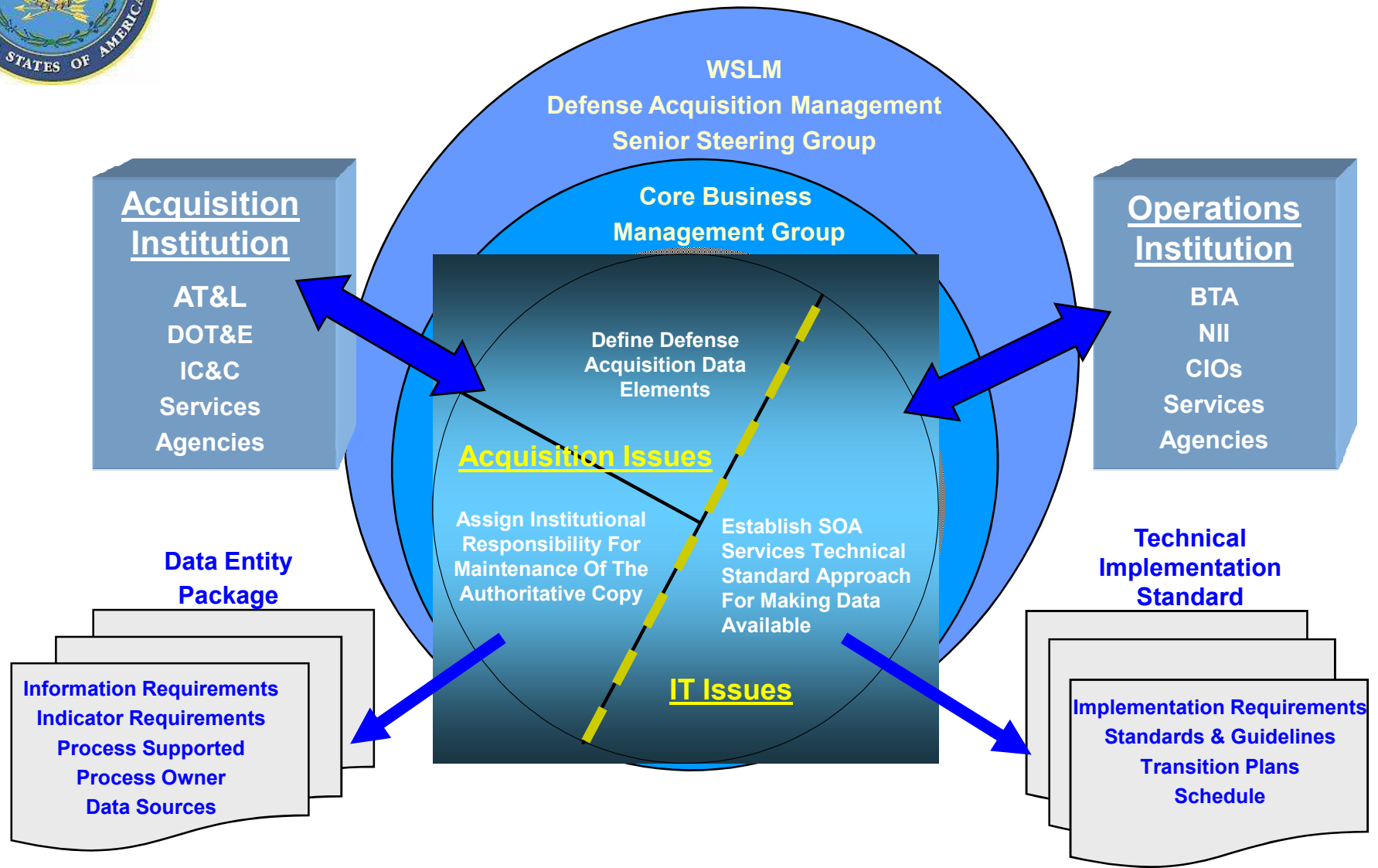
- ▶ Vision is inoperable without governance — which is almost necessary *and* sufficient
 - **Authority** to govern is mandatory for compliance

- ▶ What — precisely — must be governed?
 - Data Definitions
 - Assignment of responsibility to maintain the sole authoritative copy of data within the system for a given program
 - Data “visibility” rules: those standards that must be complied with (e.g., XML schemas, etc.) to make data accessible in system

- ▶ Of the three elements, the first two are ***inherently and permanently “Functional Management’s” responsibility***
 - Functional management can *not* expect to outsource to IT these duties
 - It takes resources to do this, not a lot, but some

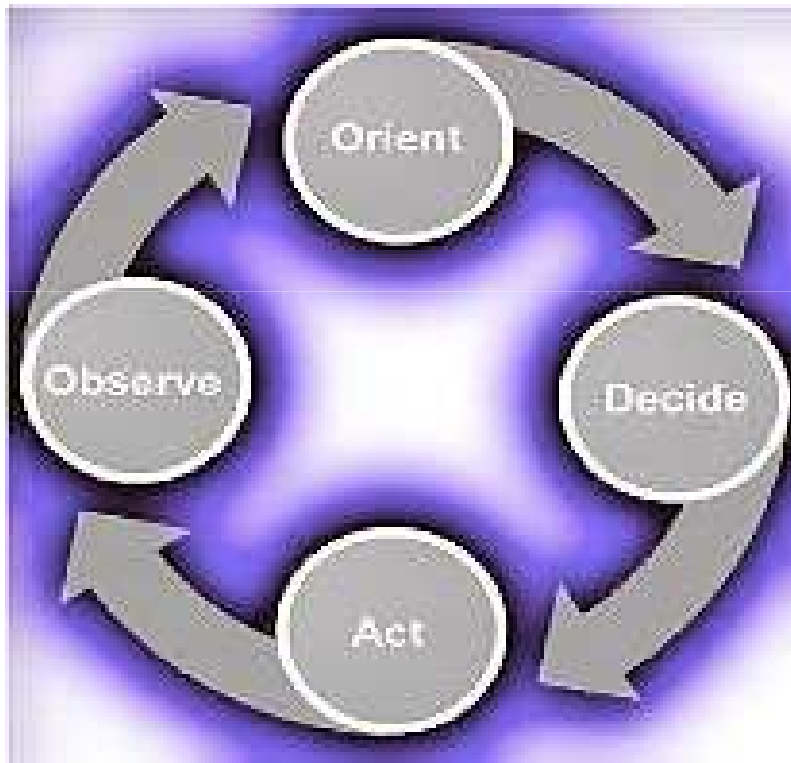


AT&L AV SOA Governance





The OODA Loop



Observe-Gather information from the environment

Orient-Develop situational awareness from data

Decide-Weigh and select from options

Act-Carry out decision



AT&L Policies & EV's Changing Role (Gary's View)

- ▶ Objective: AT&L wishes to OODA loop faster!
- ▶ All of these changes — SOA, EV reforms, CR — are being implemented with that goal in mind
- ▶ Specific policy changes to achieve this end:
 - DAES reforms
 - EVMS reforms/compliance
 - BI tools and SOA data



Specific PARCA EVMS Policy Changes (current proposal)

- ▶ **A single point of contact for EV policy**
 - Coherence, consistency and parsimony to be emphasized
 - Policy must catch up with modern management and business systems
 - Industry outreach will be crucial part of *all* EV policy decisions

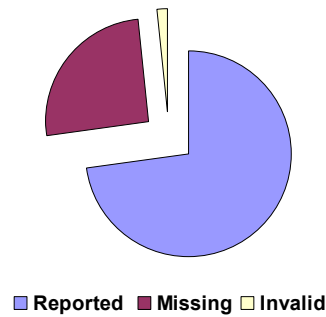
- ▶ **Aggressively move to improve reporting and compliance**
 - Detailed compliance audits will be available to USD(AT&L)
 - Standard compliance/quality dashboard will be implemented
 - Dashboard metrics will be used to evaluate PMs, contractors, Syscoms

- ▶ **PARCA will approve EV contact CDRL plans**
 - Plans developed by PM offices
 - Approval / auditing to assure consistent with policy

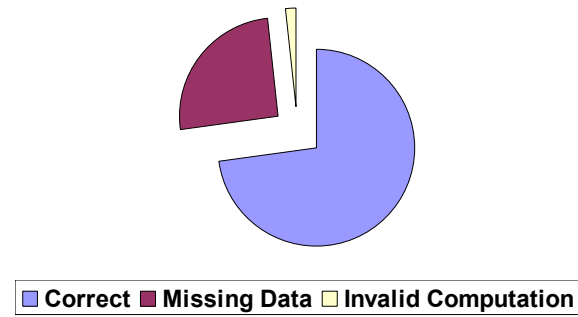


Sample Data Quality Formats; (display available by Service, PNO, etc.)

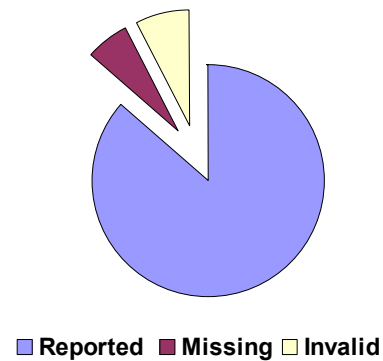
Data Completeness, by element



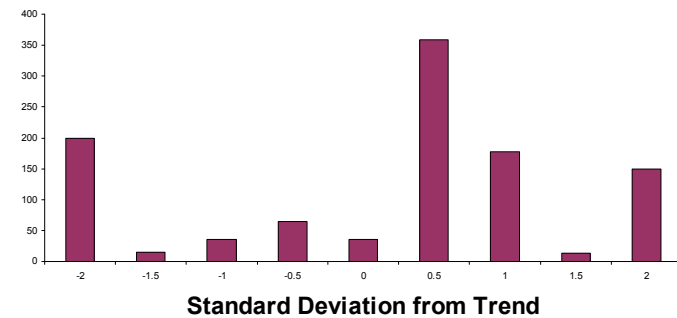
Consistency of Computed Relationships



Data Completeness, by dollars



Movng Avg Normalized Trendline Deviation





Get off the stage, Gary

- ▶ **Changes are coming quickly in EV and Acquisition, generally**
 - **The common objective is to avoid surprises**
- ▶ **Data in general, and EV in particular, *will* become more transparently visible throughout the DoD enterprise**
- ▶ **PM's / PEO's view of reporting will evolve from presenting and synthesizing data to communicating a compelling vision of *what the data mean***



Backup



How would this world work?

- ▶ Vision requires the independent cooperation of three groups:
 - Data maintainers
 - Infra-structure maintainers; “plumbers”
 - Users

- ▶ What facilitates cooperation in the broad economy? **Contracts**
 - Simple agreement about **what** parties do — and don’t do
 - The shorter and less ambiguous, the better

- ▶ What would SOA contracts tell parties?
 - *Data maintainers*: assignment of elements and definitions to use
 - *Infrastructure maintainers*: rules to follow to make the plumbing work
 - *Users*: semantics of data elements and where to go for issues



Altered Expectations of Participants

- ▶ “If the plumbing doesn’t work, blame the plumber . . .”
 - The IT staff must face a ***much*** larger set of interconnections to maintain
 - The wide variety of consuming applications present responsiveness issues

- ▶ “but if the data is bad, don’t call the Help desk”
 - The responsible data source will always be transparently available to users
 - Data authorities are no longer responsible for collating total picture

- ▶ Program Managers’ and PEOs’ roles change in fundamental ways
 - They no longer review data prior to senior management visibility
 - Their real value-added now stems from being ***masters of what the data means***



Authoritative Responsibility

Entity Responsibility - Mr. Thomas Norville - Mozilla Firefox

https://danr.cad.com/DEP/Management/EntityResponsibility.aspx

DEP Portal > Entity Responsibility

Data Entity Package (DEP) (Prototype)
Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics

Contract / Earned Value Data

- Contract Header Data
- Earned Value (EV) Data
 - % Complete
 - % VAC
 - Accounting Identity
 - ACWP (Actual Cost of Work Performed)
 - BAC - Contractor (Budget At Completion)
 - BAC - PM
 - BCWP (Budgeted Cost of Work Performed)
 - BCWS (Budgeted Cost of Work Scheduled)
 - CBB (Contract Budget Base)
 - Ceiling Price - Contractor's Estimate
 - Ceiling Price - Current
 - Ceiling Price - Original
 - Ceiling Price - PM's Estimated
 - Completion Date (when BCWS is 100%)
 - Contract Effort Completion Date
 - Contract Effort Name
 - Contract Effort Number
 - Contract Effort Start Date
 - Current Quantity
 - Delivered Quantity
 - EAC - Contractor (Estimate At Completion)
 - EAC - Contractor Best Case
 - EAC - Contractor Worst Case
 - EAC - PM
 - ECD - Original PM ECD
 - ECD - PM
 - ECD - PM Significant Effort Completion Date

Owner Mapping Filter

View/Edit Entity Def>Show

+Add New Owner/Source Refresh

REST. TYPE	REST. VALUE	OWNER	SOURCE	UPDATE FREQ.
Restriction Type	Restriction Value			
Program	FCS			
Source	Owner			
Army AIM	Congress			
Update Frequency	Endpoint URL (Lookup)			

Definition Override

Insert Cancel

No records to display.

Change page: < 1 > Displaying page 1 of 1, items 0 to 0 of 0.

Ready

Done

Start Entity Respon... Inbox - Microso... Calendar - Mo... RE: **Materials... Presentation DEP-slides.pdf 2:43 PM



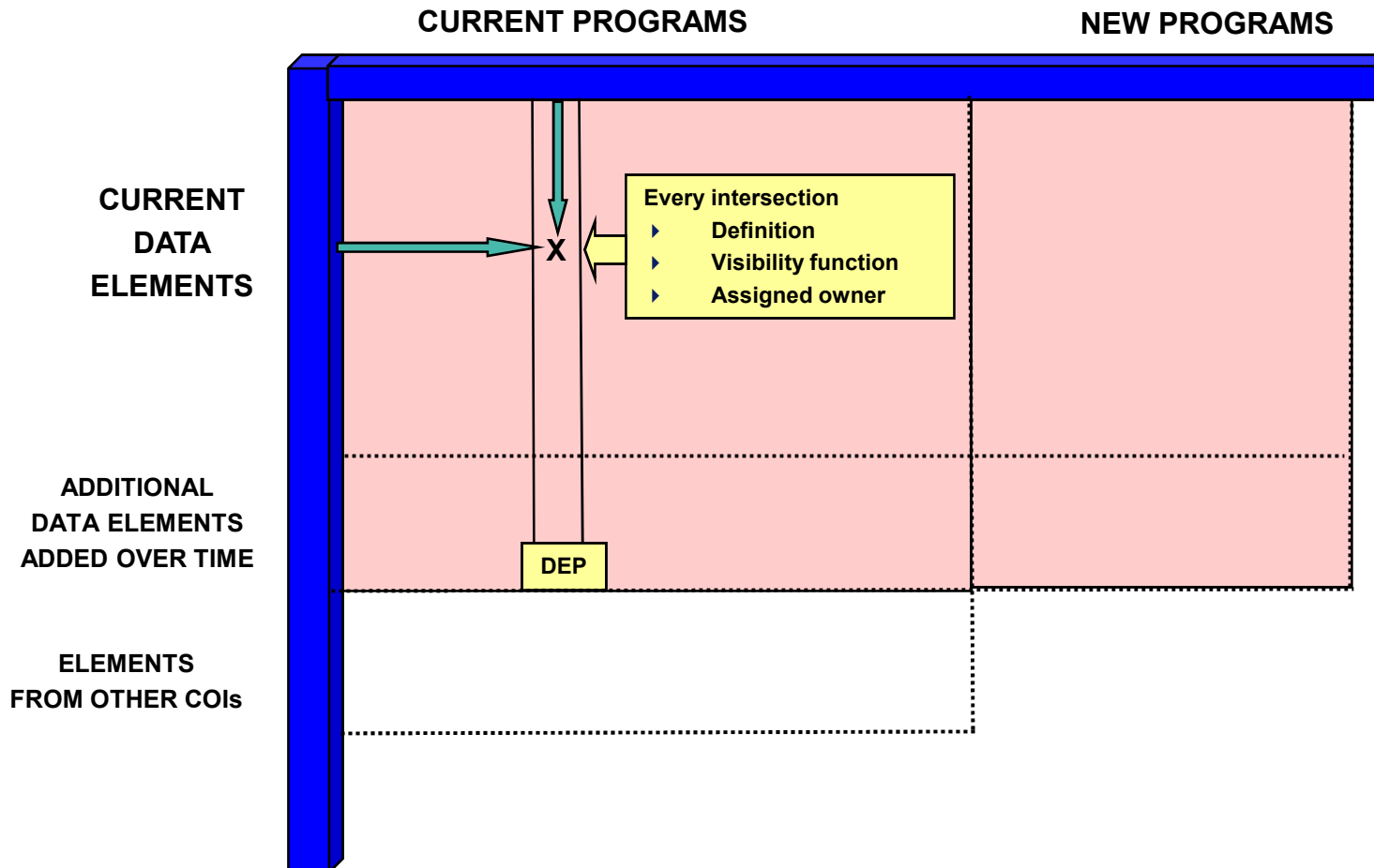
Data Classes

- ▶ In a SOA environment, assignment of responsibility for maintenance of authoritative data must be done in terms of data's properties
- ▶ Currently view data in terms of four mutually exclusive Classes:
 - **State Data:** Unambiguously measurable data; assign responsibility as close to the measurement thereof
 - **Accounting Identities:** Elements that are unambiguously computed from the values of other data elements within a program's purview; these relationships always hold, so not of policy interest
 - **Extrapolation Data***: Data that contains computational extrapolations within a recognized quantitative intellectual framework; assign responsibility to an office that possesses the credentials to perform such work
 - **Goals:** Data that represent a discretionary target that management sets for achievement; assign responsibility to those setting the goal
- ▶ Individual programs develop "Data Entity Package" that makes the assignments and establishes definitions/business rules to be used

(* Multiple sources in many cases)



Expanding the AV SOA “Waistline” via DEP Process





Arbitrating New Data Element Additions

- ▶ Adding a new data element is a major governance effort:
 - Requires Definitions, Visibility, & Authority rules for DEPs of N systems;
 - COIs that propose new elements ***must make DEP changes themselves***; and
 - Non-ARA data require governance in their respective COIs.

- ▶ Having established a new DEP element, ***implementation***:
 - Requires SOA IT Infrastructure Team to create/maintain SOA access;
 - Capacity of SOA team to accommodate data model changes is limited; therefore
 - Prioritization of competing data priorities must be performed.

- ▶ CBMG is forum to establish new data priorities
 - AV SOA team will establish a fixed new data element implementation rate for planning purposes
 - IT Infrastructure Team will implement new elements according to CBM priorities



What do you want to know?

▶ Services:

- #1: What extra work does this mean for me?
- How will compliance affect me?
- What can we use from this?

▶ OSD Staff / Data Users:

- What are the new capabilities?
- How can I get my desired data in the system?
- How can I plug in my tools?

▶ Spectators:

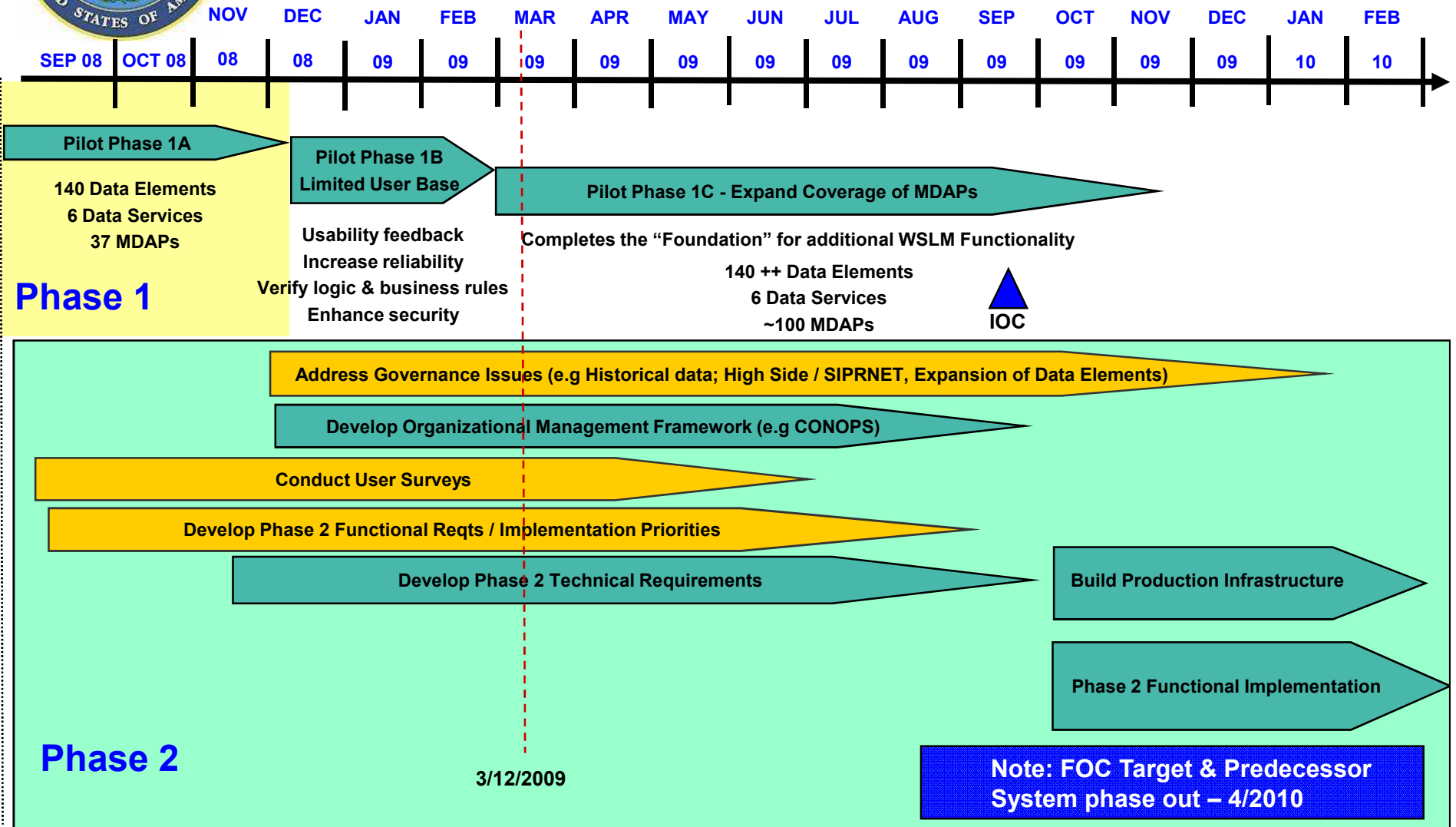
- Have these turkeys actually done something?
- Gary ain't *that* smart . . . How are they delivering value to customers and we aren't?
- How much does it cost and who pays?

▶ DoD's NII/BTA/IT La Cosa Nostra

- What are they doing that we can regulate it?
- How have they skated on rules?

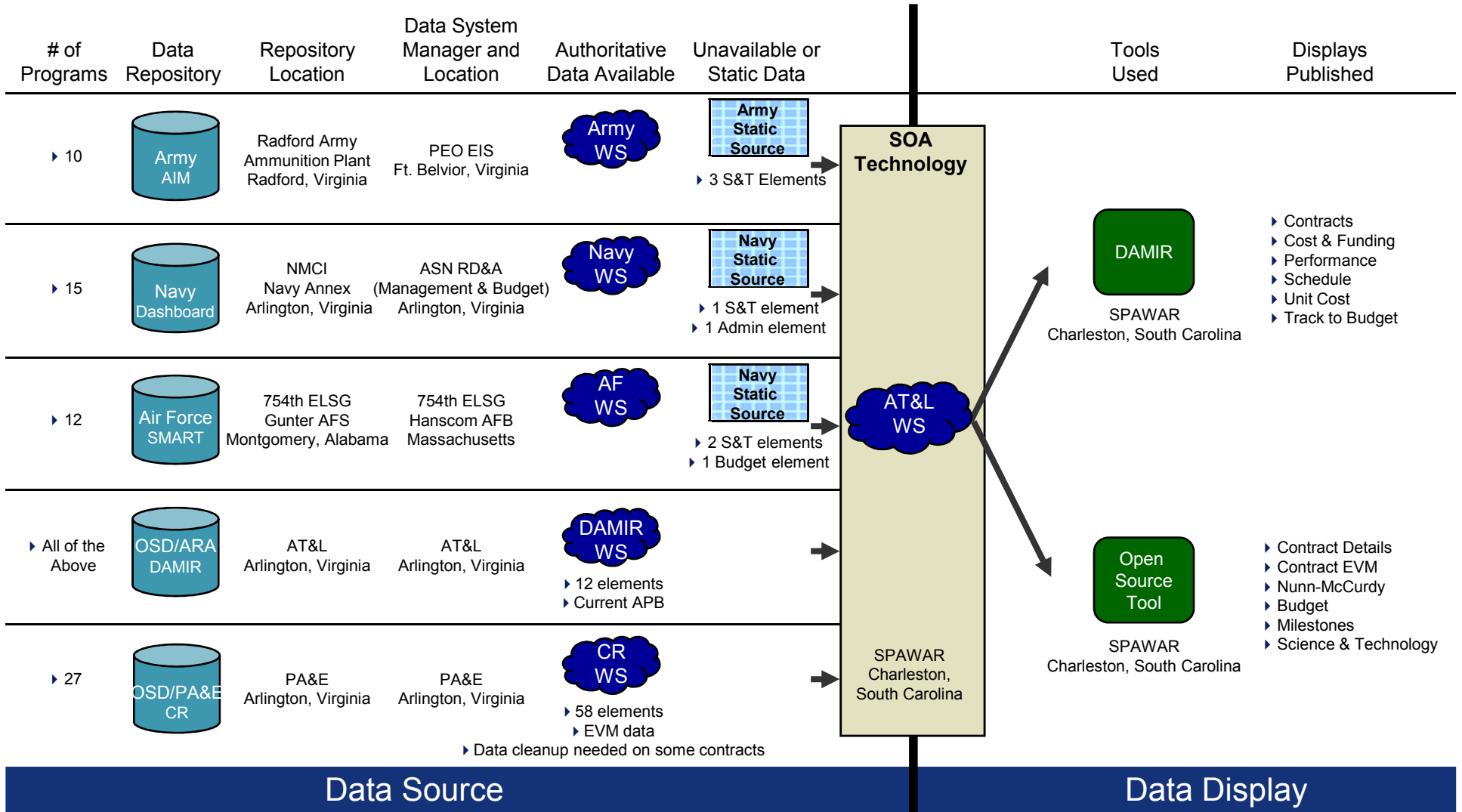


Integrated Master Schedule





AT&L AV SOA Pilot – As of 12/3



Data Source

Data Display



AT&L AV SOA Pilot Data

- ▶ Data brought under governance for the pilot include 140 elements in the following major categories, which correspond to the AT&L AV SOA services
 - **EVM** – EVM elements used in the Demo, plus contract elements included in DAMIR’s “Contract Data Point” and/or reported on the Contract Performance Report (CPR)
 - **Nunn-McCurdy Unit Cost** – Current estimate vs. APB (current and original) at total-appropriation level (RDT&E, Procurement, MILCON, O&M), by fiscal year for comparison
 - **Budget** – Current President’s Budget and POM/BES submission, by appropriation and fiscal year, to provide a reference point for POM analysis
 - **Milestone** – Program milestones as agreed upon in the APB
 - **Science & Technology** – To compare Key Performance Parameters, thresholds, and objectives to current measurement and to identify critical technologies
 - **Program Administration** – To organize/view information by program, sub-program, budget activity, program element, budget line item, and/or project code