



AT&L AV SOA

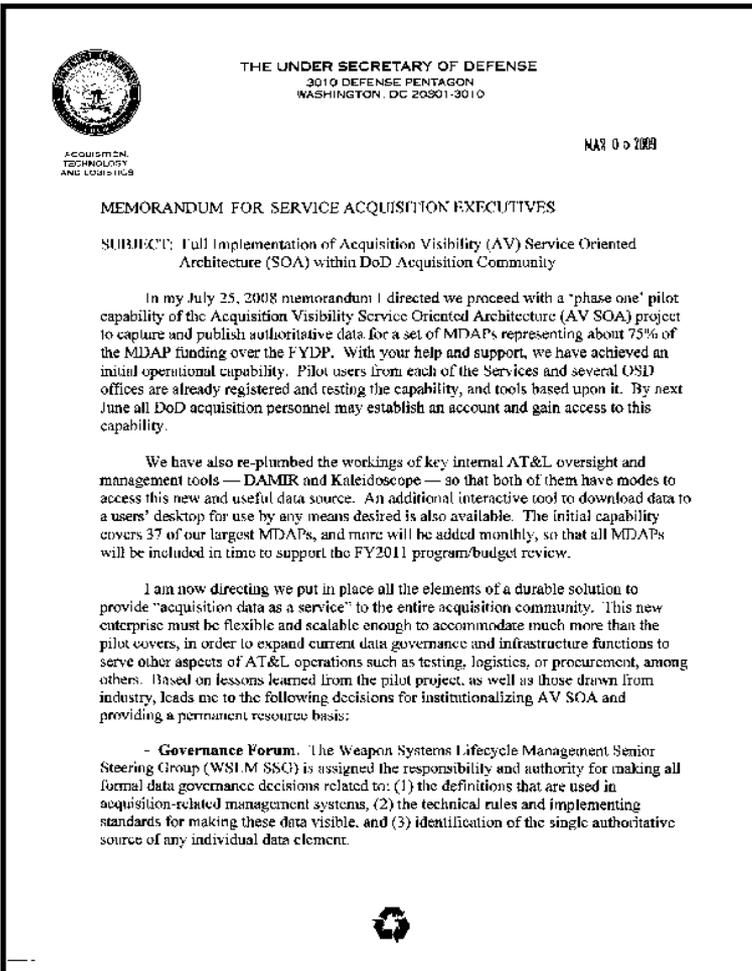
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Background



- ▶ 5 March 2009 USD(AT&L) memo entitled “Full Implementation of Acquisition Visibility (AV) Service Oriented Architecture (SOA) within DoD Acquisition Community” initiated formal governance and implementation of AV SOA system
- ▶ AV SOA project is being run out of Enterprise Information and OSD Studies office in USD(AT&L)
- ▶ This brief will summarize AV SOA governance and operational concepts as well as status of project



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:

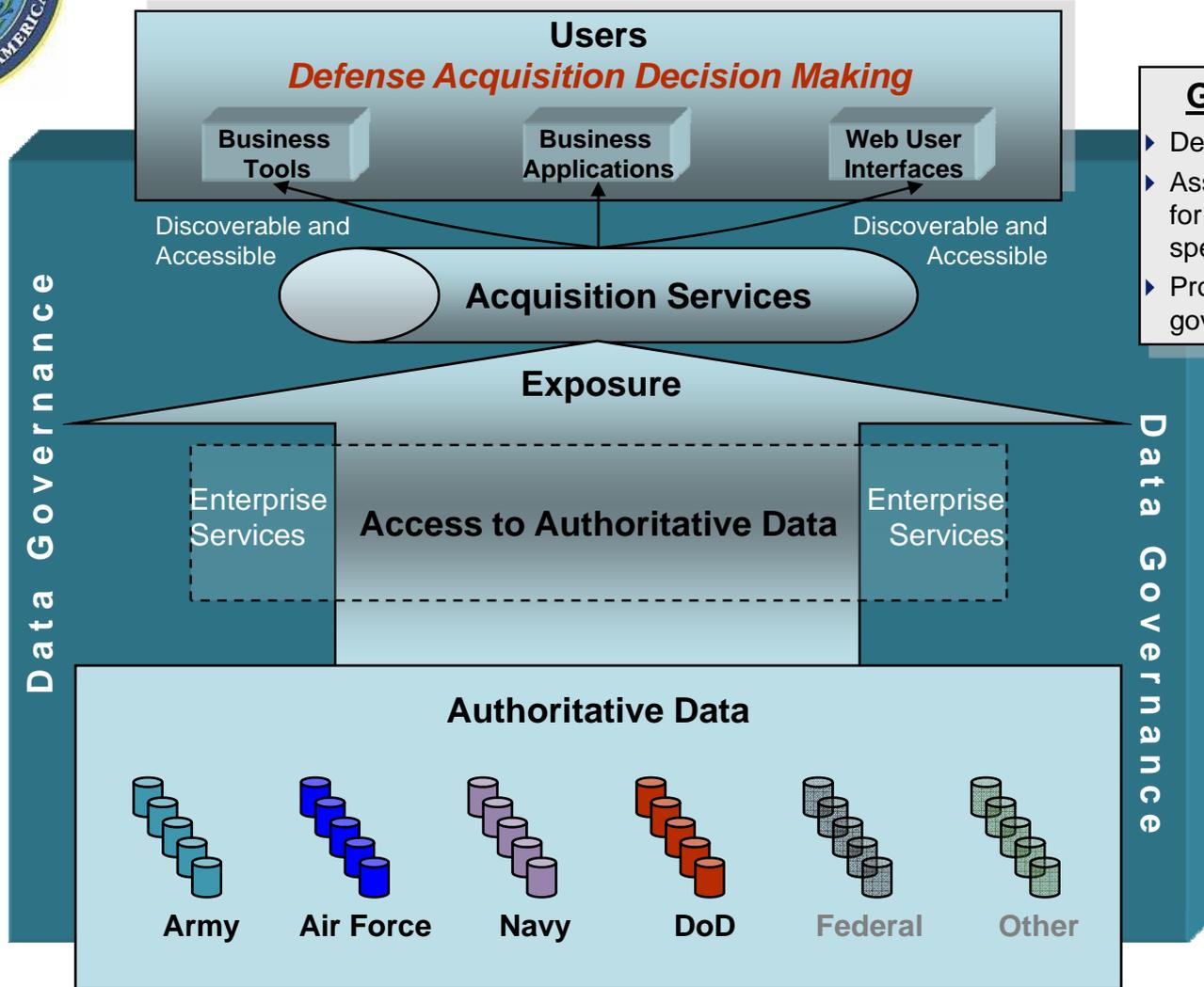
- Have these turkeys actually done something?
- Gary ain't *that* smart . . . How are they delivering value to customers and we aren't?
- How much does it cost and who pays?

▶ DoD's NII/BTA/IT La Cosa Nostra

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



SOA Governance and Technical Approach



- Governance of Data:**
- ▶ Definition of key data elements
 - ▶ Assignment of responsibility for the authoritative copy of the specified data elements
 - ▶ Provision of access to governed data

SOA Separates Data from Application and Tools



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***



Where do the contracts come from? Governance

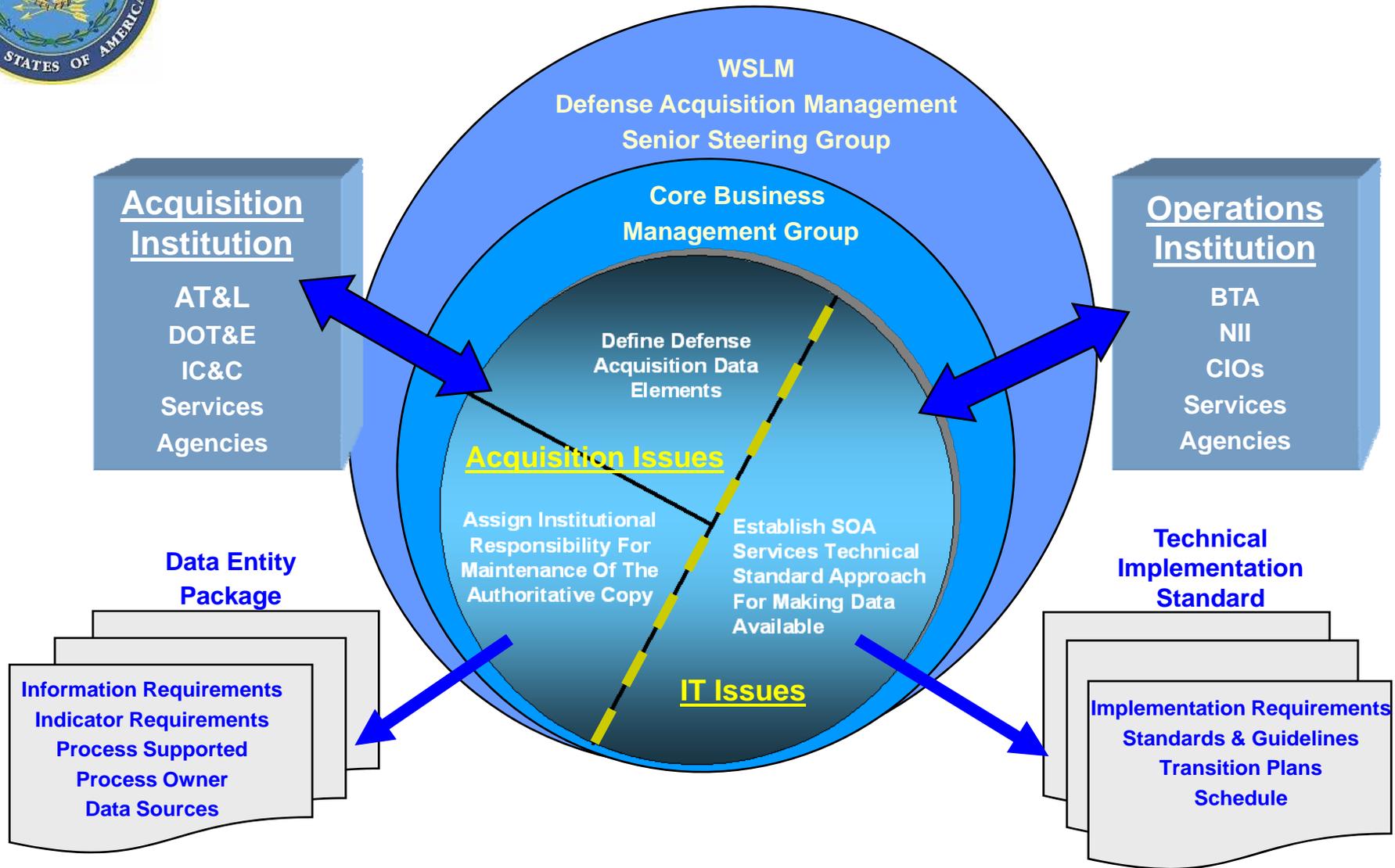
- ▶ Vision is inoperable without governance — which is almost necessary *and* sufficient
 - **Authority** to govern is mandatory for compliance

- ▶ 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





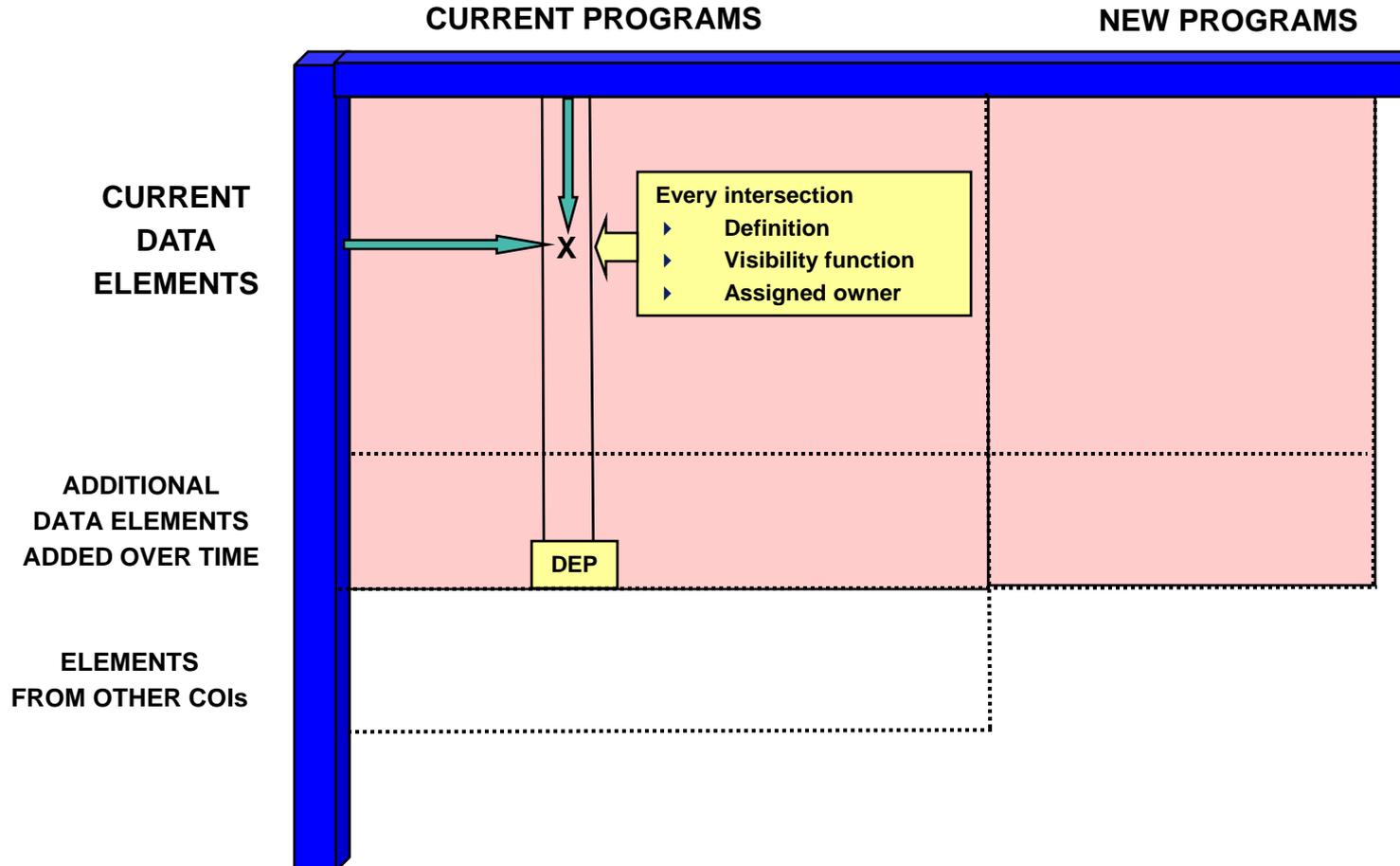
Data Classes

- ▶ 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





Key Governance Instrument: Data Entity Package (DEP)

- ▶ DEP contains everything necessary for actors in the AV SOA environment to understand their roles and perform their functions
 - Indexed by 'system' covered (initially MDAPs); one for each
 - Each element defined, rules for data visibility documented, and assignment of office that maintains each element specified
 - *DEP is a 'contract' between players in the SOA environment*
 - DEP is constantly evolving; a web-based tool is the only solution
- ▶ DEPs, in general, are prepared by COI governance personnel
 - For ARA data elements, SOA Data Team has primary responsibility
 - For other COI data elements, their own resources must prepare DEP
- ▶ DEP maintenance is a big responsibility
 - DoD IT topology is constantly morphing; DEP must be kept current
 - As new systems added, each COI must update their DEPs for new systems or data will not be made visible through the SOA server for these new systems



Authoritative Responsibility

The screenshot displays a web browser window with the following content:

- Browser:** Mozilla Firefox, URL: <https://damir.caci.com/DEP/Management/EntityResponsibility.aspx>
- Page Header:** Data Entity Package (DEP) (Prototype), Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics
- Navigation:** DEP Portal > Entity Responsibility
- Left Panel (Tree View):**
 - Contract / Earned Value Data
 - Contract Header Data
 - Earned Value (EV) Data
 - % Complete
 - % VAC
 - Accounting Identity
 - ACWP (Actual Cost of Work P)
 - BAC - Contractor (Budget At
 - BAC - PM
 - BCWP (Budgeted Cost of Wor
 - BCWS (Budgeted Cost of Wor
 - CBB (Contract Budget Base)
 - Ceiling Price - Contractor's Est
 - Ceiling Price - Current
 - Ceiling Price - Original
 - Ceiling Price - PM's Estimated
 - Completion Date (when BCW!
 - Contract Effort Completion D
 - Contract Effort Name
 - Contract Effort Number
 - Contract Effort Start Date
 - Current Quantity
 - Delivered Quantity
 - EAC - Contractor (Estimate At
 - EAC - Contractor Best Case
 - EAC - Contractor Worst Case
 - EAC - PM
 - ECD - Original PM ECD
 - ECD - PM
 - ECD - PM Significant Effort C

- Main Content Area:**
- Owner Mapping Filter:** View/Edit Entity Def>Show
- +Add New Owner/Source:** Refresh
- Table:**

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:** [Empty text box]
- Buttons:** Insert, Cancel
- Status:** No records to display.
- Page Info:** Change page: < 1 > Displaying page 1 of 1, items 0 to 0 of 0.
- Ready**




Arbitrating New Data Element Additions

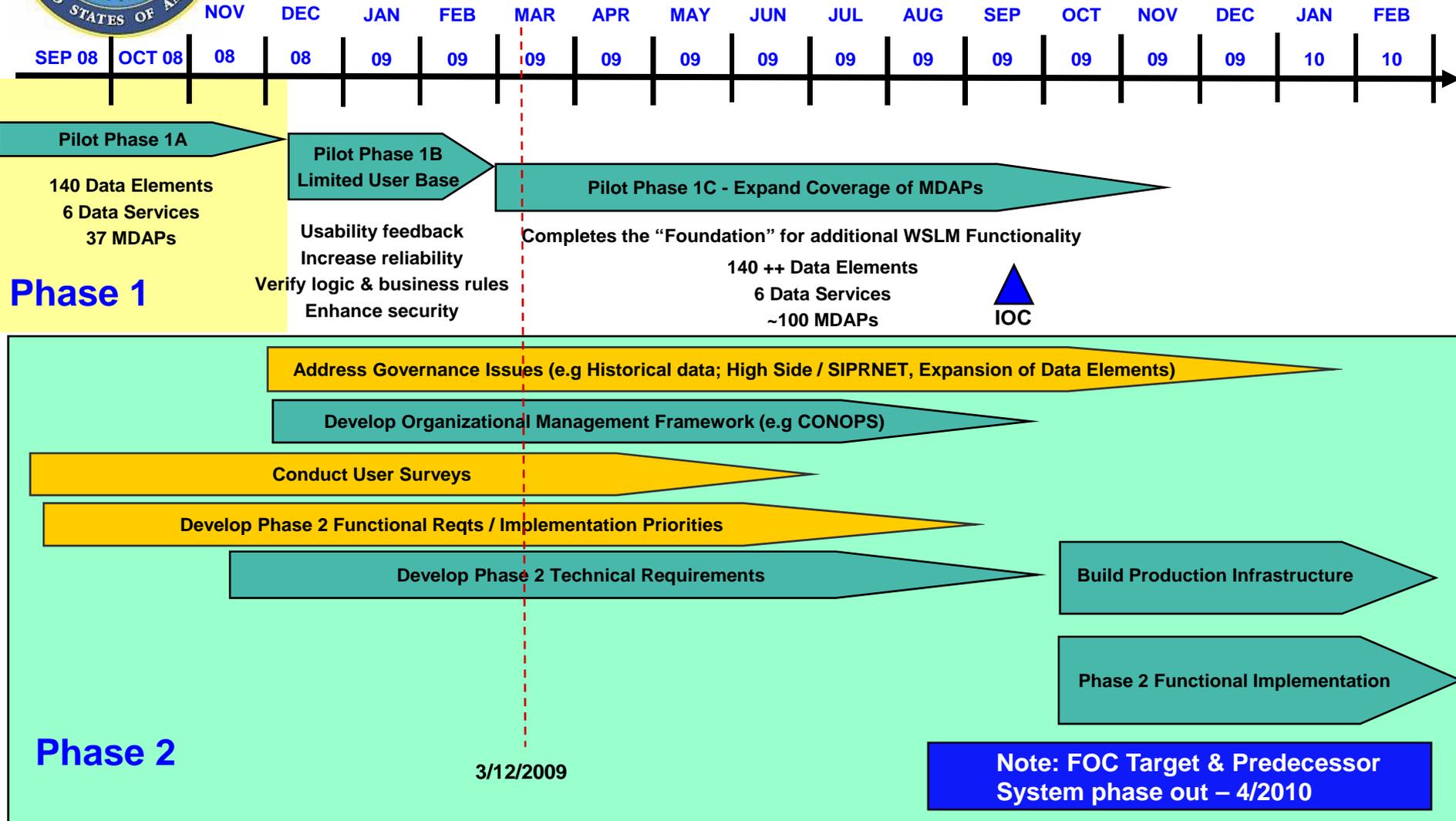
- ▶ Adding a new data element is a major governance effort:
 - Requires Definitions, Visibility, & Authority rules for DEPs of N systems;
 - COIs that propose new elements ***must make DEP changes themselves***; and
 - Non-ARA data require governance in their respective COIs.

- ▶ 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

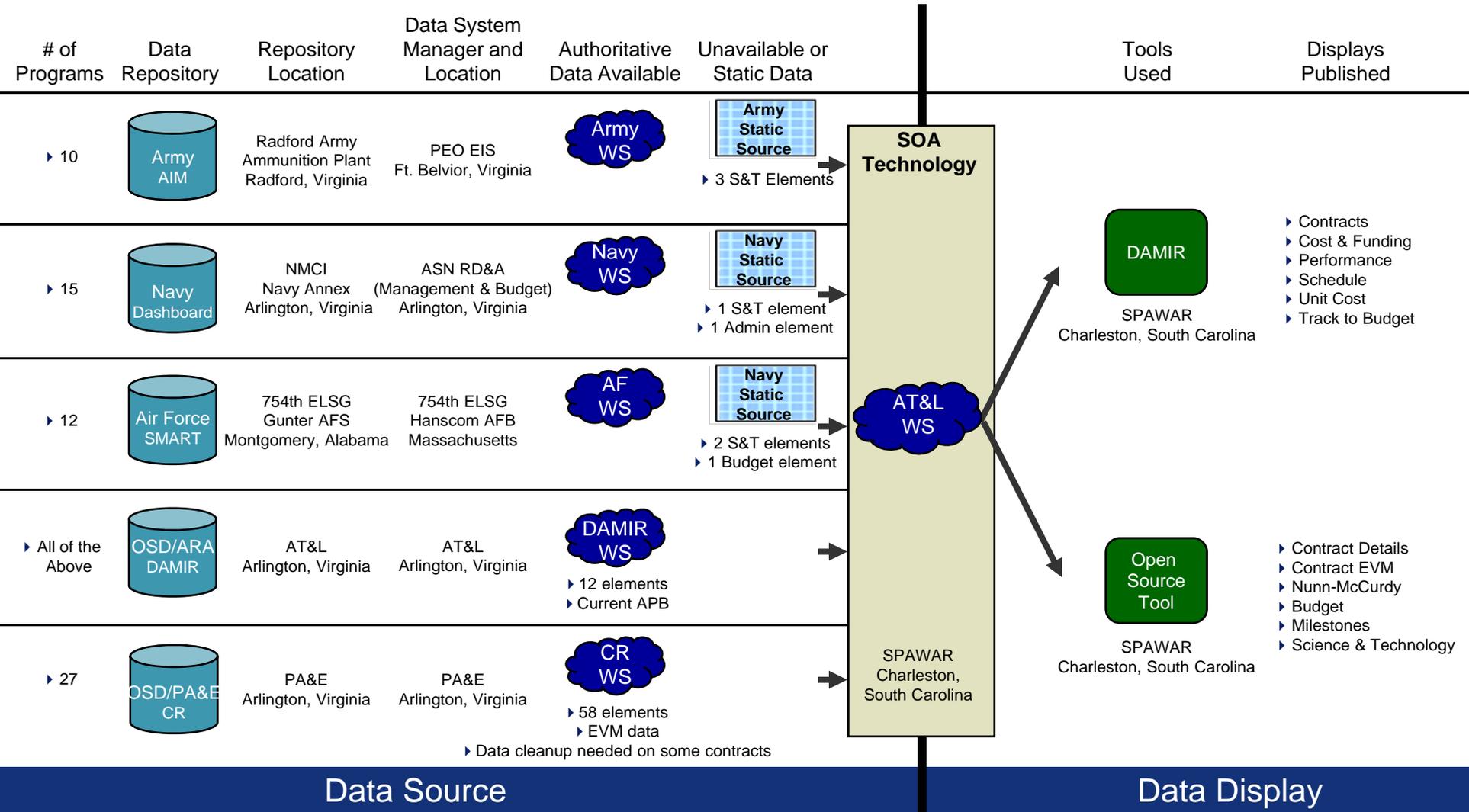


Integrated Master Schedule





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



Get off the stage, Gary

▶ Services:

- #1: What extra work does this mean for me? *Depends*
- How will compliance affect me? *Alters your relationship to system*
- What can we use from this? *See the same authoritative data as USD*

▶ OSD Staff / Data Users:

- What are the new capabilities? *Basic alteration of data sourcing*
- How can I get my desired data in the system? *Use governance process*
- How can I plug in my tools? *Absolutely*

▶ Spectators:

- Have these turkeys actually done something? *“yes”, actually*
- Gary ain't *that* smart . . . How are they delivering value to customers and we aren't? *By metering implementation schedule*
- How much does it cost and who pays? *Costs about \$12M annually*

▶ DoD's NII/BTA/IT La Cosa Nostra

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