



DCMA

2015 DOE ACQUISITION AND PROJECT MANAGEMENT WORKSHOP

‘EVMS – FROM DATA TO DIAGNOSIS’

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DCMA EVM Policy and Strategy
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DCMA AT A GLANCE

Vision

One team, one voice delivering global acquisition insight that matters.

Mission

We are the independent eyes and ears of DoD and its partners, delivering actionable acquisition insight from the factory floor to the front line... around the world.

DCMA AT A GLANCE

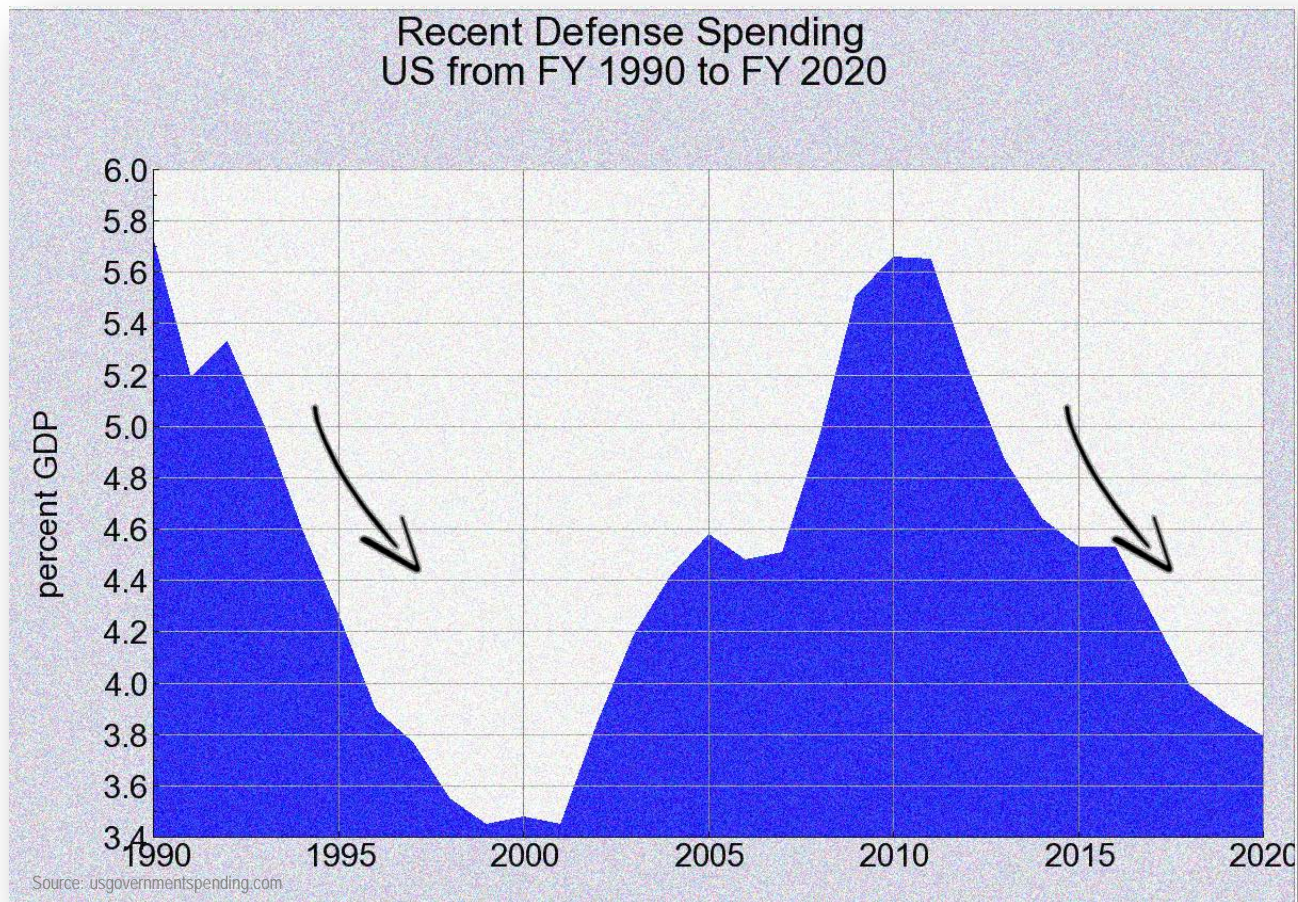
- Number of civilian personnel: 11,473
- Number of military personnel: 528
- Number of contract management offices: 47
- Number of contractors: 20,155
- Number of active contracts: 353,200 with a total obligated value of more than \$1.9 trillion.
- Number of countries with operations: 26
- Number of service lines: 15 - **Earned Value Management Systems**

Data as of September 2014

TRANSFORMING FEDERAL PROCUREMENT

A New Way Of Governing Is Emerging . . .

DEFENSE SPENDING AS % OF GDP



VALUE FOR MONEY

**. . . We Measure What We Value, and
Value What We Measure**

VALUE FOR MONEY

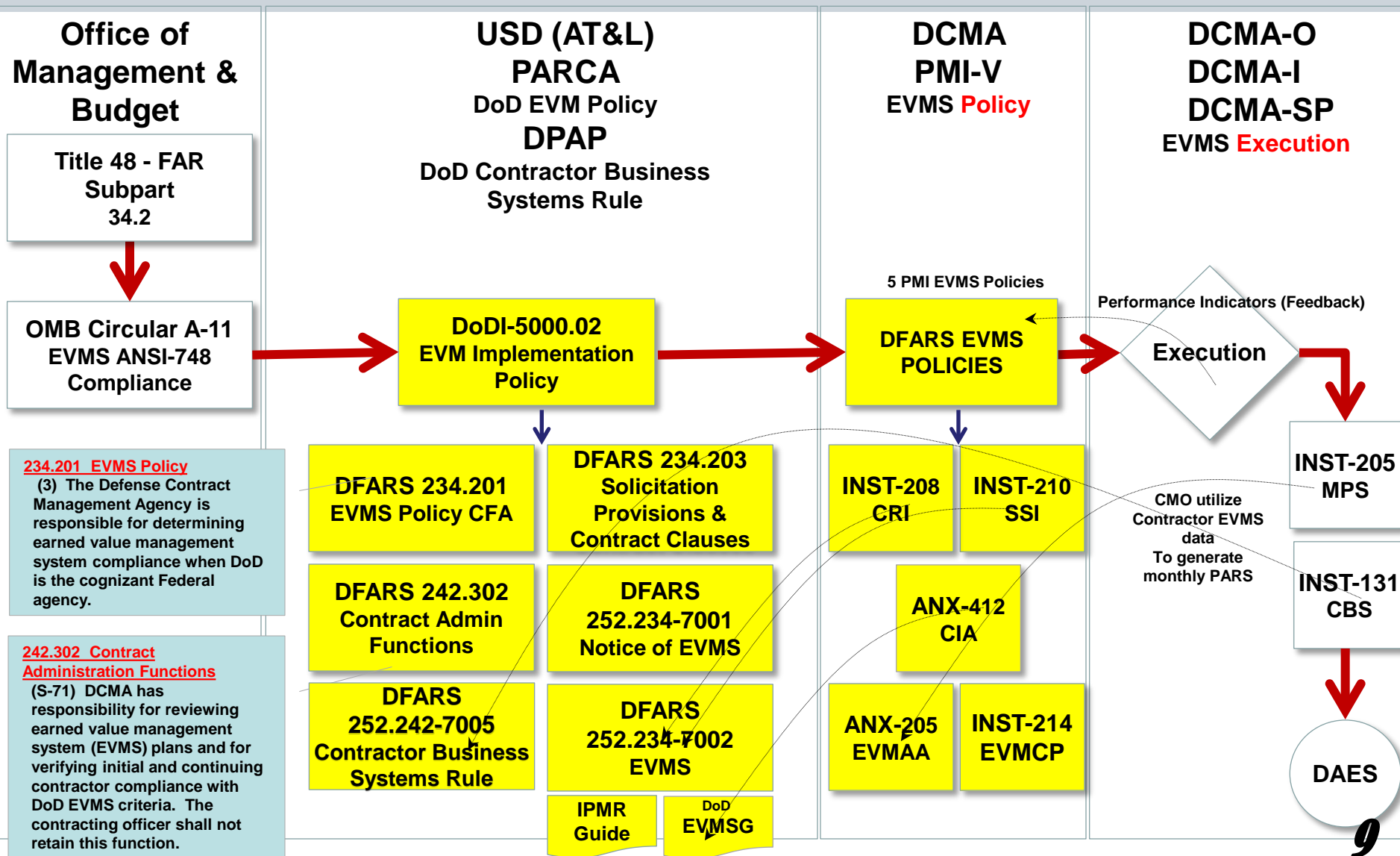
- Change The Way The Department Does Business By Changing The Way The Department Thinks About EVMS

... Is EVMS A Burden Or Necessity?

Strategic Level Inter-Relationships

Critical Path to DCMA EVMS Operations

DEFENSE CONTRACT MANAGEMENT AGENCY



SUBPART 234.2 - EARNED VALUE MANAGEMENT SYSTEM

**One Part Management Strategy, One Part
Management Control System**

PROJECT MANAGEMENT

Project Management Institute, Inc. (PMI) defines project management as "the application of knowledge, skills, tools and techniques to a broad range of activities in order to meet the requirements of a particular project."

5 PHASES OF PROJECT MANAGEMENT

1. Project conception and initiation
2. Project definition and planning
3. Project launch or execution
4. Project performance and control
5. Project close



5 PHASES OF PROJECT MANAGEMENT

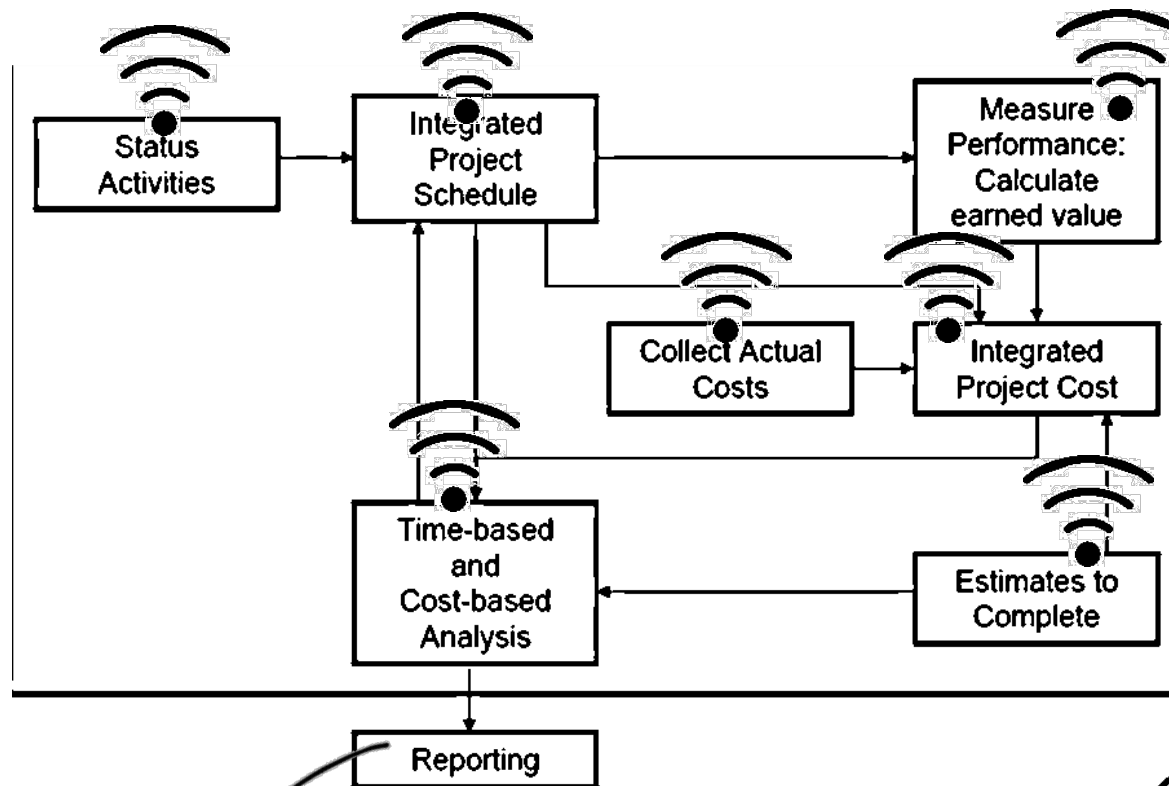
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4. Project performance and control

Project managers will compare project status and progress to the actual plan, as resources perform the scheduled work. During this phase, project managers may need to adjust schedules or do what is necessary to keep the project on track.

Anatomy Of An EVMS

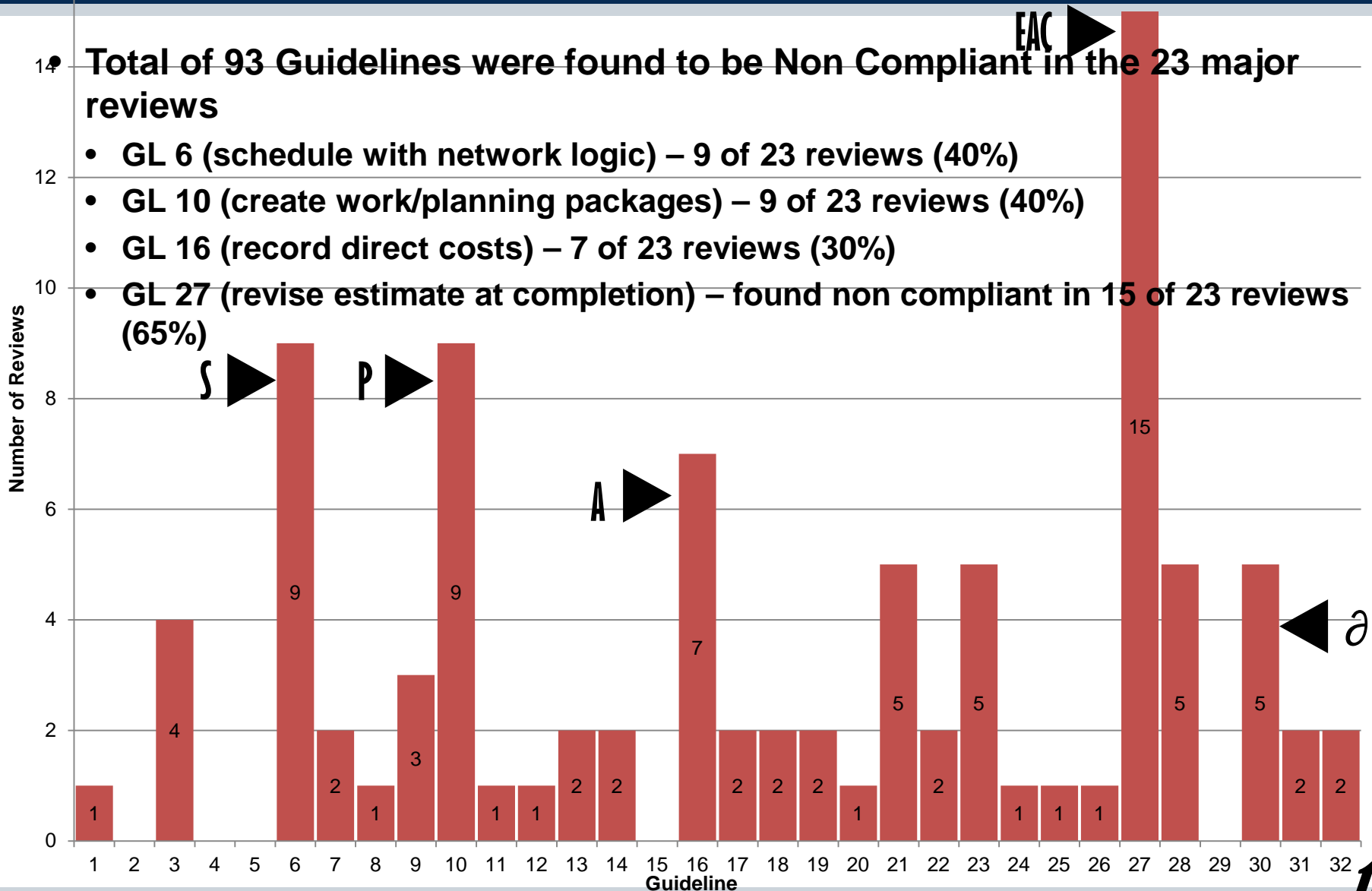
- A System of Systems
- Value Comes Through A Smart Design and An Even Smarter Implementation Strategy



- Requires Data That Is Timely, Trusted, And Relevant

- **Minimum allowable acceptance conditions:**
 - **Ensures a clear definition of work prior to beginning that work**
 - **Presents a logical plan for accomplishing the work**
 - **Provides an objective measure of accomplishments**
 - **Early and accurate identification of trends/issues**
 - **Accurate picture of contract status**
 - **Basis for course correction**

- **... Better Data (Ingredients), Better Decisions (Pizza)**



BIG DATA - Transforming How DCMA Executes Its DFARS EVMS Compliance Mission

1. Provide Clarity
2. Ensure For Consistency
3. Reduce or Eliminate Costs

Initiative 1.3.3 – Alternative Approaches to EVMS Compliance

Revise current EVMS Policy and CONOPS to streamline how DCMA conducts the EVMS mission (Compliance, Surveillance, and Analysis), and target cost savings of 20%

PRIMARY GOALS

- Influence industry partners to field effective (and efficient) EVMS that are compliant with the 32 ANSI-748 guidelines
- Improving Program Management by the way we think about (and use) EVMS
- Strengthen the purchasing power of the Department

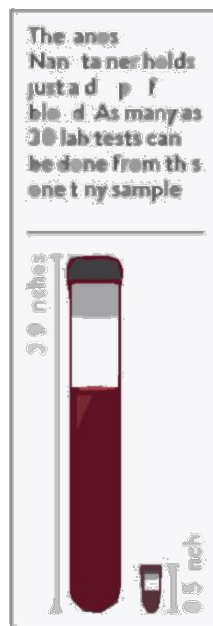
BLUF – DATA DRIVEN

- Rethinking the way in which EVMS compliance (initial) and surveillance (continuing) can be performed to simultaneously test the reliability of core management processes, and to analyze data sets to summarize, detect patterns, and draw conclusions about contract performance
 - Data-driven compliance to help predict when and where issues will occur
- Targeted Compliance and Surveillance
 - Predictor variables identify and localize the issue, optimizing surveillance and minimizing disruptions
 - Surveillance driven by data /emerging issues, not by the calendar
 - Consistent application regardless of EVMS specialist

A Drop of Blood (Data), An Instant Diagnosis – Early Detection, Prevention



Source: Theranos - Elizabeth Holmes, President and CEO



THERANOS =
Aligning
Technology with
Strategy



PREMISE

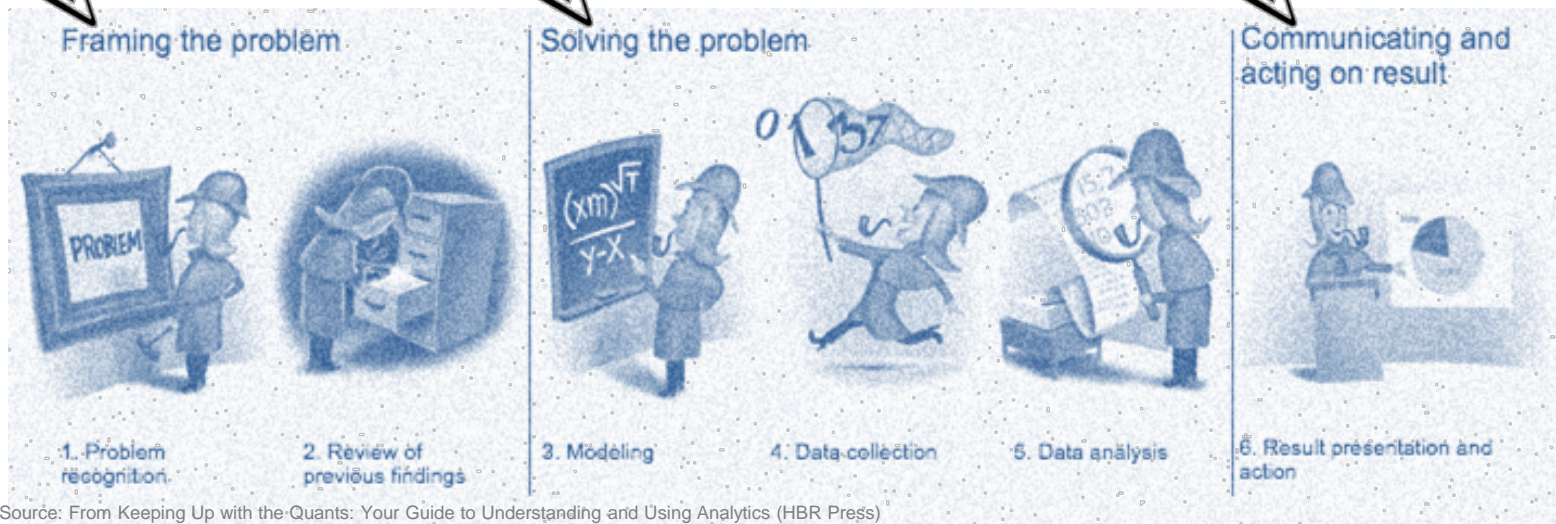
- **The success of the data-driven EVMS compliance approach is reliant upon the availability and quality of the data gathered and the effectiveness of its analysis and interpretation.**
- **Human error can creep into the EVMS compliance process at any stage of the endeavor and serious consequences can result when they do.**
- **A data-driven approach to EVMS compliance places value on decisions that can be backed up with data that can be verified.**

WHY A DATA DRIVEN APPROACH?

- Yields a more structured and disciplined analytical approach to evaluating the assessment
- Highlights potential risks in EVMS implementation that might otherwise be unknown
- Better allocates resources where pay-back is greatest
- Reduces (and works towards) eliminating unnecessary and inconsistent data requests and CAM discussions
- Projected time (cost) savings for the enterprise (and aligns with the AT&L Better Buying Initiative)

A Focus On The Quantitative Analysis Of Systems And Processes

Developing numerical (or quantitative) techniques for the analysis and verification of system properties such as reliability (trustworthiness) and relevance (usefulness) of data



Source: From Keeping Up with the Quants: Your Guide to Understanding and Using Analytics (HBR Press)

**It Is A Capital Mistake To Theorize
Before One Has Data**

- Sherlock Holmes

DATA - The New Raw Material

- More Data Doesn't Guarantee Better Decisions
- More Data Is Useless If We Aren't Asking The Right Questions
- Asking The Right Questions Requires Looking At The Right Data In The Right Way
- Knowing How Long Data Must Be Retained
- Data Access - 252.234-7002 Earned Value Management System as prescribed in 234.203
 - (f) The Contractor shall provide access to all pertinent records and data requested by the Contracting Officer or duly authorized representative as necessary to permit Government surveillance to ensure that the EVMS complies, and continues to comply, with the performance criteria referenced in paragraph (a) of this clause
- Data Formatting

COMMON DATA FORMATTING ISSUES

- Inconsistent data content
- Tied to paper based forms and reports that are useless in a digital environment (scanned documents or PDFs)
- High volume of non-value added data content
- Lots of human effort to collect, enter, sort through, or manipulate the data

UN/CEFACT /XML

- **Allows for the combination of more efficient processing, more accurate searching, and more flexible linking that will significantly reduce costs**
- **Toolset neutral –program management software vendors are supporting as a common means to import or export data**

MAPPING THE EVMS GENOME

‘Cracking The Code’

- **32 ANSI-748 Guidelines**
 - **73 Guideline Attributes**
 - **127 Tests**
 - **189 Metrics**
- **Tailored Protocols**
 - **Engineering and Development**
 - **Construction**
 - **Production Assembly**



MAPPING THE EVMS GENOME

DCMA role for executing compliance and implementing remains unchanged by the **OSD EVMSIG** as stipulated :

- Section 1.2: "...when DoD is the cognizant federal agency, the Defense Contract Management Agency (DCMA) is responsible for determining EVMS compliance."
- Section 1.1: "... agencies and organizations charged with conducting initial and continuing EVMS compliance activities will establish amplifying agency procedures and/or guidance to clarify how the respective agencies and organizations are implementing this guide to include the development of evaluation methods for the attributes associated with each of the 32 guidelines."

EIA-748 GUIDELINE CLASSIFICATIONS



52% Reduction In Attributes
62% Reduction In Test Steps

Guidelines

32

Attributes*

155 Before

63 After

73 EVMSIG

2.31 Per Guideline

Test Steps

330 Before

136 After

127 EVMSIG

1.72 Per Attribute

*Attribute - A Quality Or Characteristic Of A Guideline
That Makes It Distinct From Other Guidelines

Testing Algorithm

Example:

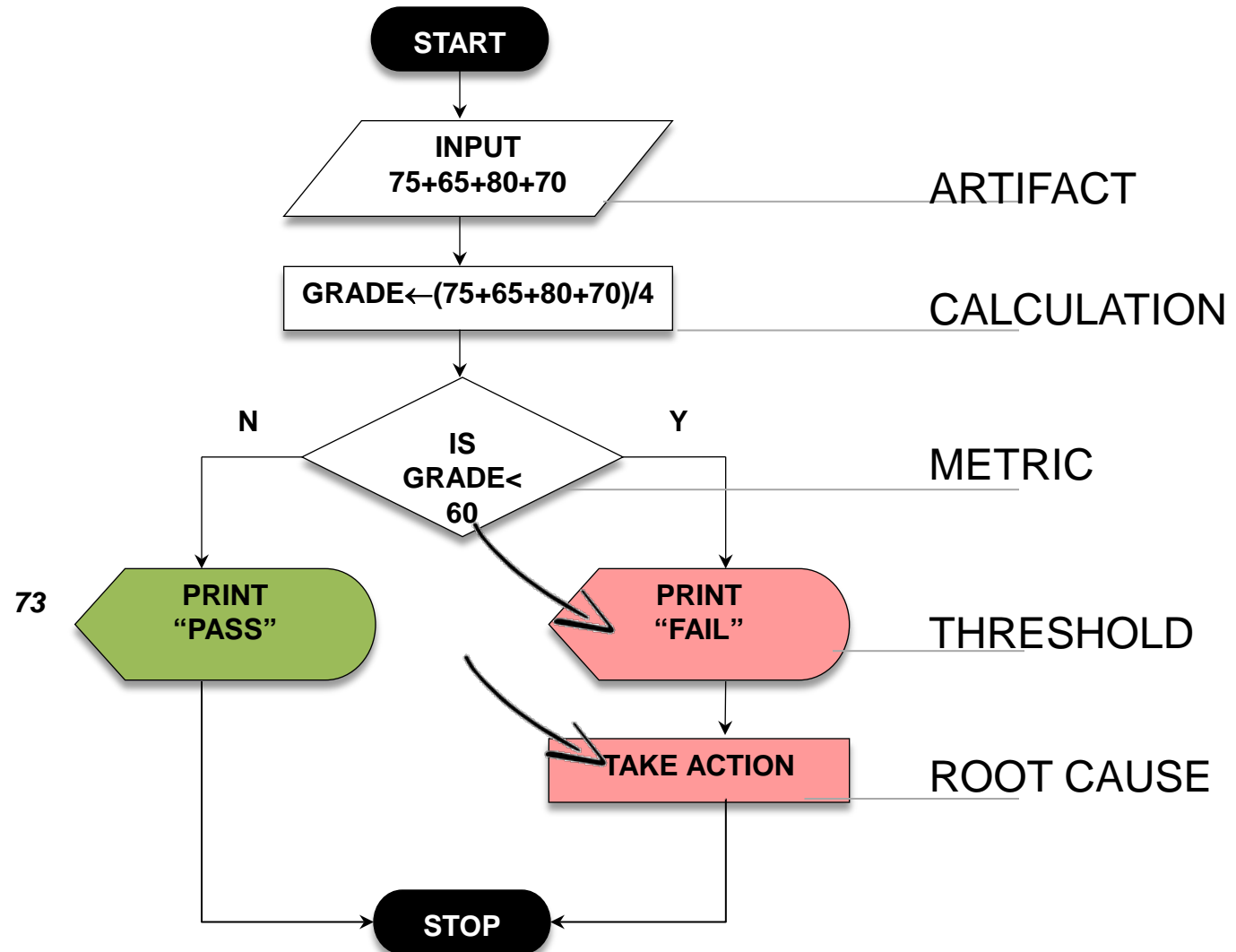
Write an algorithm to determine a student's final grade and indicate whether the grade is 'passing' or 'failing'. The final grade is calculated as the average of four marks.

Testing Algorithm

Step 1: Input M1,M2,M3,M4

Step 2: $\text{GRADE} \leftarrow (M1+M2+M3+M4)/4$

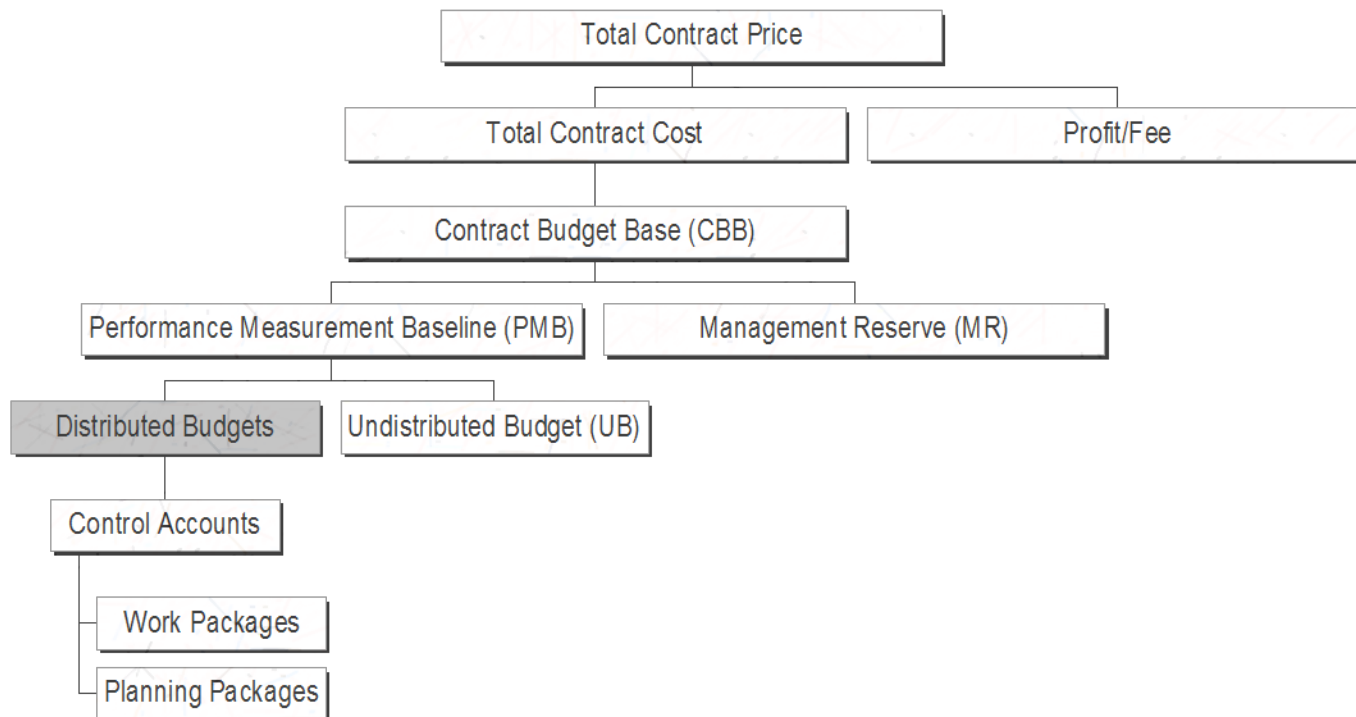
Step 3: if (GRADE < 60) then
Print "FAIL"
else
Print "PASS"
end



EIA-748 Guideline 9 Testing Protocol

- EVMS Category: Planning, Scheduling, and Budgeting
- EIA Standard Guideline: 2.2d - Authorize and Budget by Cost Elements
- Intent of Guideline: Establish budgets for authorized work with identification of significant cost elements (labor, material, etc.) as needed for internal management and for control of subcontractors

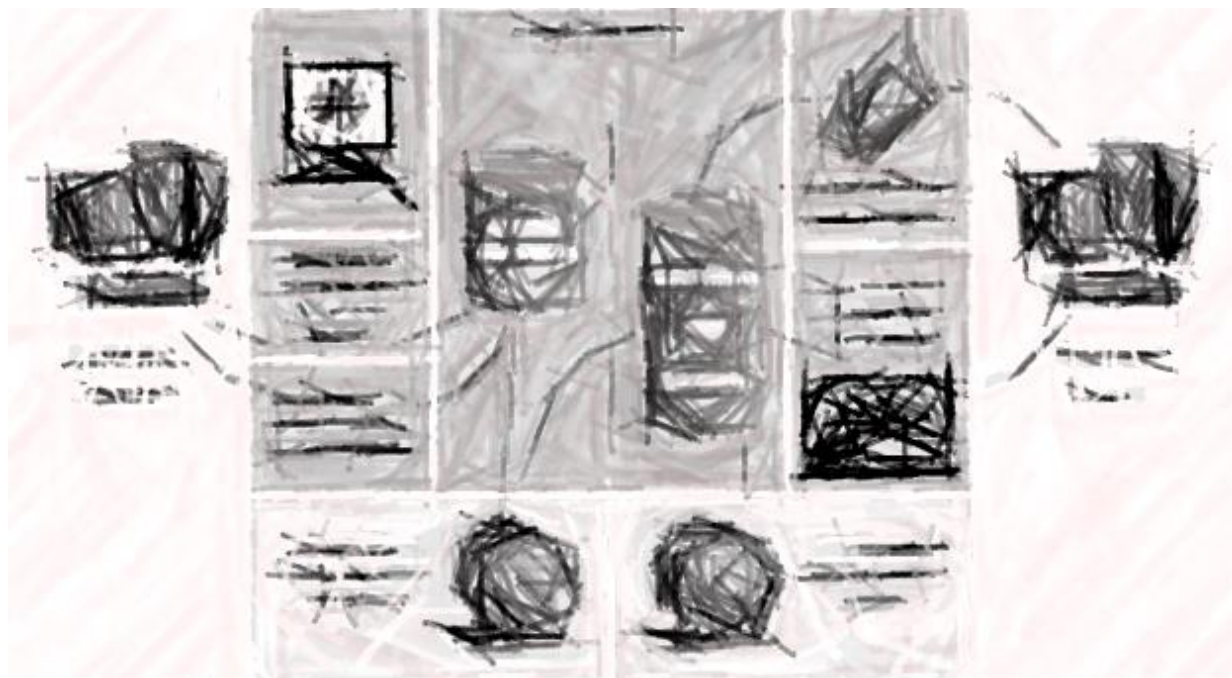
- Distributed Budgets reflect the contractually authorized efforts allocated to WBS elements
- Distributed Budgets include budgets assigned to control accounts during baseline establishment as well as work packages and planning packages



- Are the distributed budgets assigned to control accounts planned and identified in terms of the following cost elements:
 - (1) Direct labor dollars and/or hours?
 - (2) Material and/or subcontract dollars?
 - (3) Other direct dollars?
- Accomplishing the cost account resource plan is the crux of this criterion question. It requires that the budgetary resource plan be devised by element of cost; i.e. labor (in terms of dollars or hours), material (dollars), and other direct charges (dollars)
- This type of budget segmentation adds discipline and integrity to the control account's resource plan and ensures that the correlation is made between every budget dollar and the entity that dollar is supposed to buy
- The work authorization system is what translates the contractor's plans into practice

Attribute	Test Metric ID	Test Steps	Test Metric Numerator (X)	Test Metric Denominator (Y)	Metric Threshold	Min Freq	Artifacts
Work Authorization dates are consistent with control account dates (actual and baseline).	0901a	Is authorization date prior to budgeted baseline start?	X = # of incomplete CA's where the accounting period for budget baseline start is before the accounting period for the authorization date	Y = total # of incomplete CA's	X/Y < 10%	Q	9, 13
Work Authorization dates are consistent with control account dates (actual and baseline).	0902a	Is authorization date prior to occurrence of actuals?	X = \$ value of actual cost occurring prior to the accounting period authorization date for incomplete CA's	Y = total \$ value of cum ACWP for incomplete CAs	X/Y < 5%	Q	2, 9, 13
Work Authorization dates are consistent with control account dates (actual and baseline).	0903a	Is authorization date prior to occurrence of actuals?	X = # of incomplete CA's where the accounting period for occurrence of actuals is before the accounting period for the authorization date	Y = total # of incomplete CA's	X/Y < 10%	Q	2, 9, 13
Within control account plans, budgets are segregated and identified by element of cost (i.e., direct labor category, direct labor dollars/hours, material and/or subcontract dollars, and other direct costs).	0905a	Is the element(s) of cost defined/identified for each work package in a control account?	X = # of work packages with budgets not identified by element of cost	Y = total # of work packages	X/Y < 10%	M	13

EVMAS – Earned Value Management Analytics System Is Intended To Empower Program Teams (PMs, ACOs, IPTs)

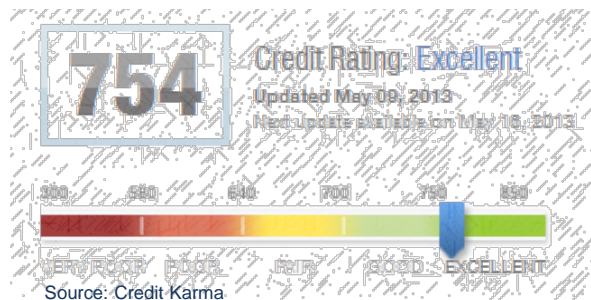


EVMAS – Aggregate Data To Identify (And Predict) EVMS Non-compliance

- Correlation and Causation
 - Identifying The Degree And Type Of Relationship Between Any Two (Or More) Quantities, And Then Understanding The Reasons Why
- Predictor For The Likelihood Of An Issue



Results Matter



- The use of an EVMS maturity model will allow for a contractor to have its methods and processes categorized against a clear set of criteria
- Maturity levels could be used to determine ongoing Government surveillance requirements
- Mechanism to communicate EVMS risks to customers and stakeholders

Role of ACO in EVMS Mission

- Identify EVMS Contract requirements through Contract Receipt and Review (CRR)
- Maintain the Contract Business Analysis Repository (CBAR)
- Review EVMS functional reports submitted in accordance with Contractor Business System (CBS) policy when a system review is conducted or material deficiencies are identified
- Approve/Disapprove EVMS based upon specialist findings
- Progress Payment Administration
 - Percent of physical completion; Estimates-at-completion

Contractor Business Systems Rule

- DFARS 252.242-7005 clause added to contracts requiring contractor's to certify that they have no major (or significant) deficiencies in their systems:
 1. Cost Accounting
 2. Purchasing
 3. Estimating
 4. Property Management
 5. Earned Value Management System
 6. Material Management
- Contracting officers would have the authority to withhold payments on cost reimbursement, incentive-type, time-and-materials, and labor-hour contracts
 - Required for one or more 16 high-risk (guidelines 1, 3, 6, 7, 8, 9, 10, 12, 16, 21, 23, 26, 27, 28, 30, or 32), discretionary for the other 16 guidelines
- Enforcement relies on auditors or other functional specialists to document any business system deficiencies

DCMA Business Systems Process

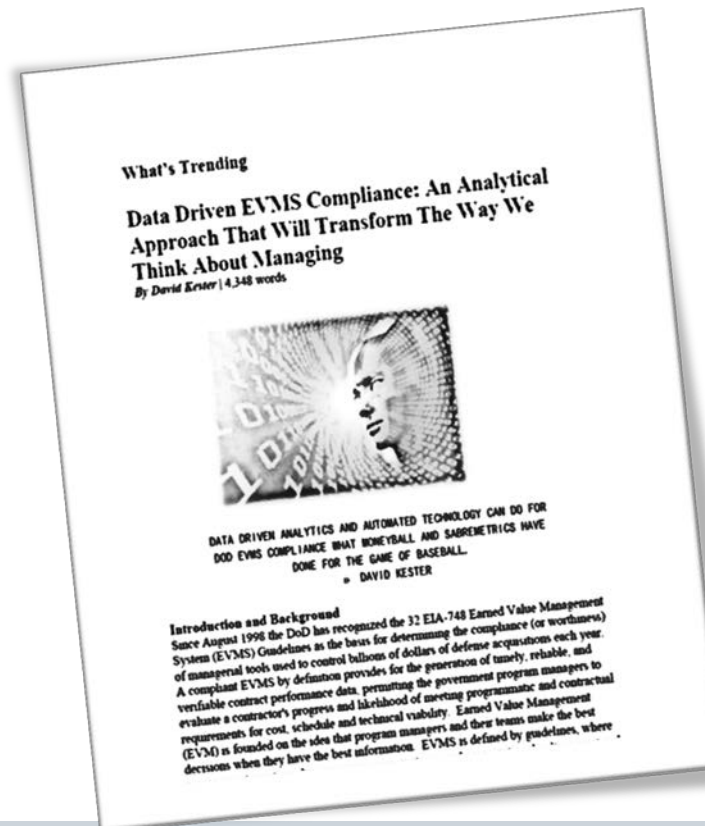
Step 1	EVMS Compliance Review & Report	COO Functional Specialists are to generate a Business System Analysis Summary within 45 days
Step 2	DACO Initial Determination	
Step 3	Supplier Written Response	
Step 4	DACO Board of Review	Contractors are Required to Respond to the ACO within 30 Days
Step 5	DACO Final Determination (2-5%)	
Step 6	DACO Initiates Withholds	
Step 7	Supplier Response (CAP)	CMO Functional Specialists working through the COO are to Assess the Contractor's corrections within 90 Days of receipt
Step 8	DACO Verify and Validate Corrections	
Step 9	DACO Considers Withhold Reduction	
Step 10	DACO Removes Withholds	

WHAT IS A SIGNIFICANT DEFICIENCY?

- DFARS 252.234-7002 - Earned Value Management System
- DFARS 252.242-7005 - Contractor Business Systems

“Significant deficiency means a shortcoming in the system that **materially** affects the ability of officials of the Department of Defense to rely upon information produced by the system that is needed for management purposes.”

UPCOMING College of Performance Management (CPM) ARTICLE



Questions

