



# Services and Earned Value, It Does Apply

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- On March 7, 2005, the Pentagon mandated that all new cost plus contracts above \$20M must be compliant with ANSI EIA 748-A (EVM)

Why?

Because, EVM is a proven methodology for managing risk!

# Agenda

- Introduction
- Services work
- Planning Considerations
- Evolution of Measurement
- Examples
- Summary
- Questions & Comments

# Arnold AFB, TN



# ATA Contract

- ~2400 Contractor Employees
- 6 Major Organizations
- 200+ Project Managers/CAMs
- 8 Project Control Officers
- 600+ Projects Annually
- EVM tools: Dekker TRAKKER<sup>®</sup>, Microsoft Project<sup>®</sup>, Peoplesoft<sup>®</sup> Data Warehouse, Peoplesoft<sup>®</sup> Financials, Synergen<sup>®</sup> Work Order Management System

# Nature of Work at Arnold AFB

- We **Test** things: Aircraft, engines, missiles..
- We **Build** things: New capabilities, facilities
- We **Maintain** things: 40K acres, 200+ buildings, Utilities, roads to commodes
- We **Research** things: Technology
- We **Support** things: Information Technology, Fire Department, Environmental Management, Warehousing, Procurement, Cafeteria.
- We **Manage** Things: Performance, HR, Funding, Contracts, Quality, Safety, Health, & Resources

# Where Does Services Work Occur ?

- Contract
- Program
- Project
- Control Account
- Work Package
- Work Order
- Task
- ....

Services work can occur at any level. Key is to understand how to organize and quantify work appropriately

# Services Projects (examples)

- **Information Technology & Services**
  - Upgrade and Maintain Classified & Unclassified Computer Systems & Networks, Desktop Services, H/W & S/W deployment & repair, Help Desk, O&M of Major COTS applications, Operate Computer Center, Technical Library, Technical Publications, Graphics, Consolidated Testing Laboratory, Telephone Services, Configuration Management, Strategic Planning, Disaster Recovery, Computer Security

# Characteristics of Services Work

- Never “Done”, on-going, operations & maintenance, sustainment
- Emphasis on Cost Variance (CV)
- Dynamic workload
- Primarily supported with fixed verses matrixed resources
- More difficult to objectively quantify

**Unfortunately, services work is frequently treated as Level of Effort (LOE) which can actually increase risk**

# The Challenge

- Memo: “Now required to do EVM on Services Work”, “Implement on Monday”, “....Please”, “I’m serious this time”.
- How do you implement EVM on a contract with 600 + projects ?
- During the planning phase, one project and one project manager at a time.

# Planning Considerations

- Quantify work where it makes sense, balance with risk
- Tie metrics to transaction systems
- Isolate the important work
- Isolate the high risk work
- Understand where the money is going
  - Manage it, Make it, Fix it, Maintain it, Operate it, Improve it

# Planning Considerations


- Plan in Monthly Full Time Equivalents
- Work Package Size
  - No less than 2 days work per month (0.1 FTE)
  - Approximately 4 or 5 cost collectors per month per person
- Target measurement for at least 80% of the work, bundle the rest appropriately

# Earned Value Techniques

- Standard Techniques Apply
- If utilizing LOE, align with process
- Services work should leverage % Complete
  - Two kinds of EV% Complete
    - Subjective (strongly discourage)
    - Objective (strongly encourage: X/Y)

# Priority

Good

- 
1. Ownership of data: PM/CAM accountability
  2. Compliance with EVM process
  3. Valid project work breakdown structures
  4. Accurate charging
  5. Realistic EACs
  6. Requirements based planning
  7. Baseline change control
  8. Accurate performance assessments
  9. Requirements based forecasting
  10. Proactive corrective action

# Evolution of Measurement

- New work, No historical performance metrics on unit costs and unit volume
  - Planning Cycle 1: **Experimentation**
  - Planning Cycle 2: **Refinement**
  - Planning Cycle 3: **Dialed-in**

# Evolution of Measurement

## First Performance Cycle : **Experimentation**

- Expected outcomes
  - More time planning & organizing work
  - Poor unit volume / cost estimates
  - Work package cost over-runs and under-runs
  - More time spent researching and explaining variances
  - Difficulty forecasting ETC accurately, lazy charging
  - More time spent doing EVM
  - Data decision quality: low

**Don't give up !! Do a post mortem, lessons learned, make changes**

# Evolution of Measurement

## Second Performance Cycle : **Refinement**

- Expected outcomes
  - Better unit volume and cost estimates
  - Fewer false variances
  - Less time spent researching and explaining variances
  - Easier forecasting ETC accurately
  - Less time spent doing EVM
  - Data decision quality: Useable for the majority of work
  - Cost: 25% reduction in planning and statusing costs

**Don't give up !! Do a post mortem, lessons learned, make changes**

# Evolution of Measurement

## Third Performance Cycle : **Dialed-in**

- Expected outcomes
  - Balance between budget and negotiated requirements
  - True unit volume and cost metrics
  - Variances occur as a result of work volume and productivity
  - Significantly less time spent researching and explaining variances
  - Easier forecasting ETC accurately, better financial management
  - Less time spent doing EVM
  - Data decision quality: Useable for the majority of work
  - Cost: Significant savings from first cycle (75% possible)

# Examples: S/W Maintenance

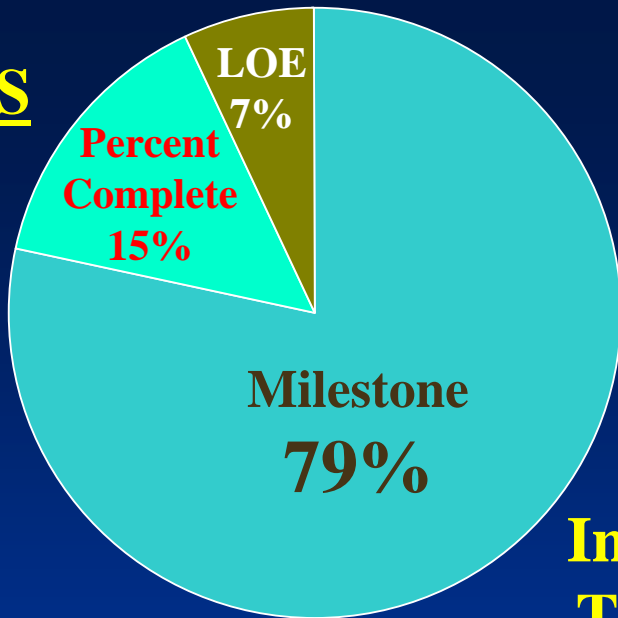
## BCWP (EV) Based on:

- **Year 1:** Count completed changes
- **Year 2:** Use categories of changes
- **Year 3:** Custom estimate for each change
- **Year 4:** Partial credit based on interim event

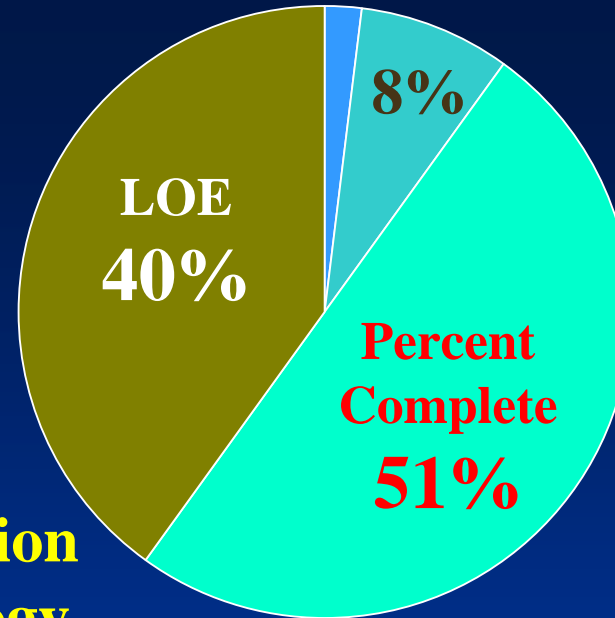
## Usefulness of data:

- **Year 1:** Significant false variances
- **Year 2:** Minor improvement, still bad
- **Year 3:** Very good results, some earnings lag
- **Year 4:** Excellent results

**M&S**

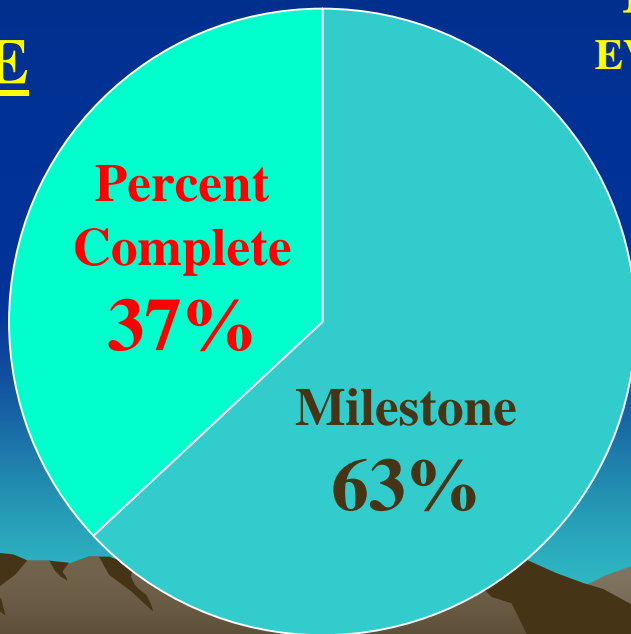


**Labor**

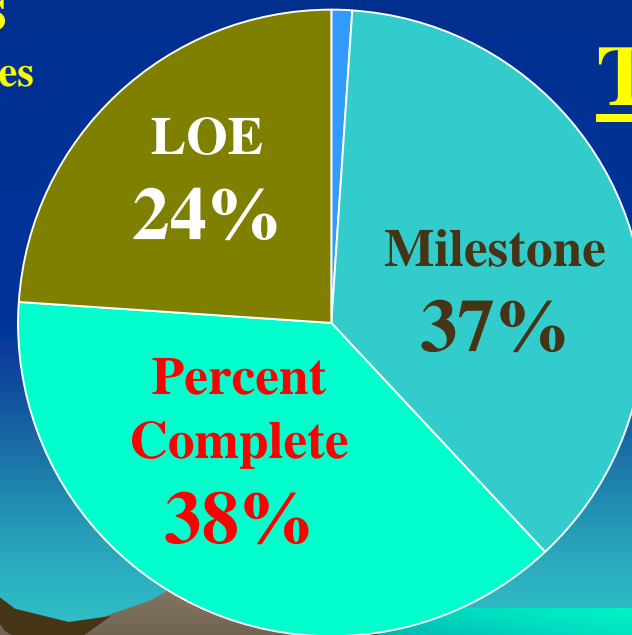


**Information  
Technology  
Projects  
EV Techniques**

**GFE**



**Total**



# Summary

- Objectively understanding a project's EVM performance is essential for managing risk
- You can't buy EVM, you build it by integrating process, people, and tools. Then you mature it over time
- Variances are a normal part of the maturity process. Be tolerant of the experimental phase. Seek to understand **before** concluding any variance is either good or bad

# Questions & Comments



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