Agenda

- Introduction
- Background
- Common Practice
- Discrete Practice
- Compare and Contrast
- Process
- Example and Analysis
- Summary
Introduction

Background

Common Practice

Discrete Practice

Compare and Contrast

Process

Example and Analysis

Summary

Source: www.mypurchasingcenter.com, Sen, Moumita, 2014
Introduction

- Primes use significant Subcontractor Content
- Types of Subcontracting
  - Capacity
  - Specialty
    - Labor
    - Services
    - Capability
- Attribute is correctly measuring performance
Topic

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- **Major Defense Acquisition Programs**
  - Defined by size
  - Contain Major Subcontractors
    - Have prime flow down clauses
    - Require approved systems
  - Earned Value Metrics mandated
    - Flow down to major subcontractors
    - High risk support

<table>
<thead>
<tr>
<th>ACAT Level</th>
<th>MDAP</th>
<th>Phase</th>
<th>MAIS</th>
<th>Phase</th>
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<tr>
<td>ACAT I, ACAT 1A</td>
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<td>RDT&amp;E</td>
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<td>All Increments</td>
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<table>
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<th>Contract Value</th>
<th>Applicability</th>
<th>Notes</th>
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<tbody>
<tr>
<td>&lt; $20M</td>
<td>EVM not required; may be applied at PM discretion based on risk to the Government</td>
<td>Requires business case analysis and MDA approval</td>
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<tr>
<td>&gt;= $20M to &lt;$100M</td>
<td>EVM Required; contractor is required to have an EVM system (EVMS) that complies with the guidelines in EIA-748*</td>
<td>The Government reserves the right to review a contractor’s EVMS when deemed necessary to verify compliance</td>
</tr>
<tr>
<td>&gt;= $100M</td>
<td>EVM Required; contractor is required to have an EVMS that has been determined to be in compliance with the guidelines in EIA-748*</td>
<td>The Contractor will provide access to all pertinent records and data requested by the Contracting Officer or duly authorized representative as necessary to permit initial and ongoing Government compliance reviews to ensure that the EVMS complies, and continues to comply, with the guidelines in EIA-748*.</td>
</tr>
</tbody>
</table>
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Common Practice

• Subcontractor performance measurements
  - Three primary methods
    • Level of Effort (LOE)
    • Percent of EAC (PEAC)
    • Discrete
  - Each have unique attributes
  - Some skew results

• Choosing appropriate method
  - Situational awareness
  - Program management tool
Level of Effort

- Attribute – no measurable output, cannot be discretely planned
- Pros (for Prime)
  - Simple to implement
  - Often used on smaller efforts
- Cons (for Prime)
  - Never shows a schedule variance
  - Shows speed of expenses not work accomplished

 Reported SVL = ($0.00)
 Actual SVD = ($1.89)
 Reported CVL = ($0.99)
 Actual CVD = ($2.88)
Percent of EAC

- **Attribute – Better than LOE**
  - Shows progress as a percent of EAC spent

- **Pros (for Prime)**
  - Shows progress based on expenses
  - Provides cost and schedule variances

- **Cons (for Prime)**
  - Progress only accurate if percent spend equals percent complete
  - Percent spent changes as EAC changes

### Graph Details

- **Reported SVP** ($0.63)
- **Actual CVD** ($1.89)
- **Reported CVP** ($1.62)
- **Actual CVD** ($2.88)
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Discrete Practice

- Attributes – Multifaceted
  - Work is detail planned and resourced
  - Objective progress obtained
  - Is a DCMA best practice

- Pros (for Prime)
  - Supports integrated solution
  - Provides clear situational awareness
  - Supports forecasting

- Cons (for Prime)
  - More complex than other methods
  - Performance measurement lags by a period or more
  - Estimated actuals routine in reporting

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<th>Pre-PDR</th>
<th>PRE-CDR</th>
<th>Post-CDR</th>
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<tr>
<td>30%</td>
<td>20%</td>
<td>15%</td>
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</table>

Recommended space development program percent LOE by program phase

Major Subcontractor performance measurement can impact Prime EV ratios
Topic

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Compare and Contrast

- Major Subcontractor content can impact Prime reporting results
- LOE breaks ratios
- PEAC subjective
- Discrete – best practices
## Compare and Contrast

- **Performance Metrics Show**
  - Differences in BCWP
  - Common variance reporting impacts
  - IEAC differences

- **Results drive decisions**
  - Primes provide reports
  - Government assessments may differ

- **Key is to be as objective and discrete as possible**

### Performance Measurement Methods

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<tr>
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<th>Discrete</th>
<th>Level of Effort</th>
<th>Percent of EAC</th>
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<td>$10,370</td>
<td>$10,370</td>
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<tr>
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<td>$11,360</td>
<td>$11,360</td>
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<td>SV</td>
<td>$(1,892)</td>
<td>$ -</td>
<td>$(633)</td>
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<tr>
<td>CV</td>
<td>$(2,882)</td>
<td>$(990)</td>
<td>$(1,623)</td>
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<td>SV%</td>
<td>-22%</td>
<td>0%</td>
<td>-6%</td>
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<tr>
<td>CV%</td>
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<td>-16%</td>
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<td>$21,540</td>
<td>$21,540</td>
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<td>$25,130</td>
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<td>VAC</td>
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<td>$(3,590)</td>
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<tr>
<td>% of EAC Spent</td>
<td>45%</td>
<td>45%</td>
<td>45%</td>
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<tr>
<td>% Complete</td>
<td>39%</td>
<td>48%</td>
<td>45%</td>
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<td>CUM CPI</td>
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<td>IEAC VAC</td>
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</table>
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Source: Deming Quality Circle
Process

- Regardless of method
- Processes are repeatable
  - Supports data consistency
  - Transferable
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### Example and Analysis

#### Integrating Major Subcontractor data

- **Integrated solution (A)**
  - Does not provide complete visibility
  - Masks Subcontractor issues
  - Under predicts likely EAC

- **Separating Prime Sub (B + D)**
  - Provides visibility
  - Supports corrective actions
  - Ensures robust EAC

### Prime Contract Impact of Subcontractor Earned Value Methods

<table>
<thead>
<tr>
<th></th>
<th>(Thousands)</th>
<th>Prime/Sub Content</th>
<th>Sub-Contractor</th>
<th>Sub Percent of Total</th>
<th>Prime Content Only</th>
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<td>BCWP LOE (l)</td>
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Example and Analysis

<table>
<thead>
<tr>
<th></th>
<th>Prime Discrete</th>
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<tbody>
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<tr>
<td>Sub LOE</td>
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<tr>
<td>Sub PEAC</td>
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- Results show
  - Decision making driven by
    - Method
    - Timeliness
    - Quality
  - Government reporting
    - Can impact Prime ratings
    - Funding obligations
    - Competitiveness
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Summary

- Selecting appropriate Subcontractor performance method
  - Influences Prime decision making
  - Impacts reported performance and EAC
  - Can skew program situational awareness and corrective action

- Appropriate performance method selection depends on
  - Program Risk
  - Portion of Subcontractor work scope

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>Prime Integrated EAC</td>
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<td>Prime Separate</td>
<td>Integrated Total (B + C)</td>
<td>Delta (D - A)</td>
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<td>$75,696</td>
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- Prime integrated reporting under predicts EAC
- Both LOE and PEAC have EAC variances from Discrete of almost $600K
- Best practices show Discrete provides most realistic performance metrics that flow into Prime EAC