

ESTIMATES AT COMPLETION (EACs)

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- ◆ When discussing the concept of EAC, there are at least three different perspectives that can be taken:
 - ◆ Contractor EAC – sometimes referred to as the Latest Revised Estimate (LRE)
 - ◆ Government Program Office
 - ◆ OSD/Higher HQ
- ◆ They are derived differently based on information available

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Estimates at Completion (EACs)

Contractor EAC (aka LRE)

- ◆ Based on Detailed information
- ◆ Updated periodically
- ◆ "Bottoms-up" from Control Account Level

Government Program Office

- ◆ Review Contractor EAC/LRE
 - ◆ Formulas – Sanity Check
 - ◆ Identify Risk
- ◆ Develop PMO EAC Range
 - ◆ Not "plug and chug" – more than just EV status
 - ◆ Add PM Perspective
- ◆ Analysis and incorporation of all program data

OSD/Higher HQ

- ◆ Lack of Program Details
- ◆ Usually Formula-Based at top level
- ◆ Sometimes Related to Database (history of past programs)

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Formula-based EAC Concept

Let's begin by explaining the EAC Concept. Put in its simple terms, the EAC is the sum of what has already been spent plus what we need to spend to complete the work.

$$\text{EAC} = \text{Cost to date} + \text{Estimate to Complete}$$

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Formula-based EAC Concept

Now, let's translate that into EV terms. The "cost to date" is the Cumulative Actual Cost of Work Performed (ACWP). In order to determine the "estimate to complete" we need to determine how much work is left and how efficiently the contractor will perform it.

$$EAC = ACWP + \left(\frac{\text{Work Remaining}}{\text{Performance Factor}} \right)$$

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Formula-based EAC Concept

The "work remaining" can be calculated by subtracting the work accomplished to date, which is the Cumulative Budgeted Cost of Work Performed (BCWP), from the total work value planned, which is the Budget at Completion (BAC).

$$EAC = ACWP + \left(\frac{(BAC - BCWP)}{\text{Performance Factor}} \right)$$

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Formula-based EAC Concept

$$\text{EAC} = \text{Cost to date} + \text{Estimate to Complete}$$

$$\text{EAC} = \text{ACWP} + \left(\frac{\text{Work Remaining}}{\text{Performance Factor}} \right)$$

$$\text{EAC} = \text{ACWP} + \left(\frac{(\text{BAC} - \text{BCWP})}{\text{Performance Factor}} \right)$$

Now, where do we get a performance factor?

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Now, where do we get a performance factor?

- ◆ If you review the metrics on the gold card, a couple of sources for performance factors should stand out
 - ◆ Cost Performance Efficiency (CPI)
 - ◆ Schedule Performance Efficiency (SPI)
- ◆ The basic EAC formulas shown on the GOLD CARD use Cum CPI and a composite performance factor calculated by multiplying the CPI and the SPI.
- ◆ The chart on the following page displays these methods plus some other potential performance factors using combinations of the CPI and SPI. (Note that in some cases, current, 3-period or 6-period CPIs are used in place of the Cumulative CPI.)

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EAC Methods

Method	Formula
1. Cum CPI (EAC _{CPIc})	$ACWP_c + \left(\frac{(BAC - BCWP_c)}{CPI_c} \right) = \frac{BAC}{CPI_c}$
2. Composite EAC	$ACWP_c + \left(\frac{(BAC - BCWP_c)}{CPI_c \times SPI_c} \right)$
3. 3 Period AVG*	$ACWP_c + \left(\frac{(BAC - BCWP_c)}{CPI_{3period}} \right)$
4. COST & SCH	$ACWP_c + \left(\frac{(BAC - BCWP_c)}{0.8CPI_c + 0.2SPI_c} \right)$
5. MICOM	$ACWP_c + \left(\frac{(BAC - BCWP_c)}{CPI_{3period} \times SPI_c} \right)$

Note: _c = cumulative data

* Can also use Current CPI or 6 period CPI in place of 3 period CPI

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Now, how do we choose a performance factor?

- ◆ This is where the analysis and evaluation comes into play.
- ◆ Based on information that the program office has regarding what is happening technically, combined with risk assessment and other programmatic information, the program office needs to determine which factor is the best predictor of contractor performance from "now" until contract completion.
- ◆ The CPI and SPI provide indicators of the contractor's efficiency up to this point (with the potential of isolating more current trends if those are determined to be better indicators of future performance).

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Now, how do we choose a performance factor?

- ◆ The Program Office needs to do the following:
 - ◆ Assess Current Status
 - ⊙ Technical Performance
 - ⊙ Schedule Performance
 - ⊙ Cost Performance
 - ◆ Identify Program Risks and Issues
 - ◆ Forecast Future
 - ⊙ Technical Performance
 - ⊙ Schedule Performance
 - ⊙ Cost Performance
- ◆ This information should be incorporated into the determination of the PMO EAC range (Best, Worst, Most Likely)
- ◆ The PMO can also calculate a modified "bottoms-up" by assigning different performance factors to different WBS elements

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