

## 1990 A-12 Program Authority to Proceed (ATP) on Low-Rate Initial Production (LRIP)

- **18 month slip to first flight and \$1 Billion overrun projection by contractor team**
- **Congressional hearing US Navy secretary on C-Span 2 ½ hours**
- **Certified management systems yet surprises occurred**
- **Air Force Institute of Technology (AFIT) funded to conduct study on forecasts and use of data ---Empirical evidence**

- In addition to ‘most likely’ some contractors wanted to provide Best Case, Worst Case ---a range
- All risks occur and no opportunities for Worst
- All opportunities and no risks for Best
- Blend of these for most likely

# Independent EACs

$$\text{IEAC 1: } PF = CPI_E$$

$$\frac{ACWP + (\text{Budget at Completion} - \text{Earned Value}_{cum})}{\left( \frac{\text{Earned Value}_{cum}}{\text{Actuals}_{cum}} \right)}$$

or

$$\frac{\text{Budget At Completion}}{CPI_E}$$

\*\*DoD, DOE, and others

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$$\text{IEAC 2: PF} = (a \times \text{CPI}_E) + (b \times \text{SPI})$$

$$\frac{\text{ACWP} + (\text{Budget at Completion} - \text{Earned Value}_{\text{cum}})}{[(a \times \text{CPI}_E) + (b \times \text{SPI})]^*}$$

\*a + b = 1

\*\*DoD and others

$$\text{IEAC 3: PF} = (\text{CPI}_E \times \text{SPI})$$

$$\text{ACWP} +$$

$$\frac{(\text{Budget at Completion} - \text{Earned Value}_{\text{cum}})}{(\text{CPI}_E \times \text{SPI})}$$

\*\*DoD, DOE, and others

**IEAC 4: PF = 1**

**ACWP +**

**(Budget at Completion – Earned Value<sub>cum</sub>)**

**\*\*DoD and others**

- **Variety of different time frames like month, quarter, annual and weighting of SPIs and CPIs for example:**
- **Last 6 months SPI X cumulative CPI for R&D oriented efforts**
- **Last 8 months SPI and 4 months CPI for production oriented efforts**
- **“...darn, you can come out with whatever answer you want!”**

## Challenges to Logic - Considerations:

- **Changes to scope**
- **Amount of FFP content use <25% threshold?**
- **Level---control account/ WBS level(s)/Total contract?**
- **Schedule drives cost so must factor in ---but how?**



- **When somebody finishes a new study provide results of any new research results representative of:**
  - 1) New discovery / body of knowledge / breakthroughs of research results.**
  - 2) Confirmation of prior research results**
  - 3) Different outcome with different results from prior research**
  - 4) Other?**

- Pent up emotions because of desire to make better use of information available from our EVMSs by people like Brown Water hero Paul Bolinger
- Ivan Bembers, Matt Jones, Brian Kong and Beth Corcoran who will now introduce themselves.

# NDIA IPMD iEAC Panel DOE iEAC(PMDA)

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Data Analytics (DA)

iEAC - an independent body's (i.e., customer, client, consultant) forecast of the final total cost of the project/program (IP2M METRR glossary)

CAM contract account manager

K contract

QRA quantitative risk analysis

PARS Project Assessment and Reporting System

DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets

EOC element of cost

ktr contractor

TBN total project need

EVT earned value technique

PB-K performance baseline

WP work package

FPM federal project manager

PM Office of Project Management

# PB-K\_graph

## completion (schedule & cost)

- plan (scope)
- EAC(ktr CAM)
- EAC(ktr PM) risk based
- EAC(FPM)
- EAC(PM)
- PB
- iEAC(PMDA) - graphic
  - factors nonlinear plan
  - factors past performance
  - factors ktr EACs
  - factors EVT, EOC
  - factors base work construct
  - integrated including w/ PARS
  - communicated w/ stakeholders

## initiatives

- leverage other data, e.g., indirect, TBN
- multi-level, e.g., programmatic to WP
- factor time-dependent costs
- 1-touch-QRA

