**Earned Value and Earned Schedule**

**Statistical Forecasting Calculator Instructions**

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# Introduction

The Earned Value and Earned Schedule Statistical Forecasting Calculator (the Calculator) calculates the High (Hi), Low (Lo) and nominal forecasts for final project cost and final project duration.

# Design Concept and Considerations

The Calculator works from the input data entered into the Project Data and Input Data Sheet worksheets.

This data must be obtained and validated from sources external to the Calculator. The Earned Schedule cumulative values can be obtained by using the ES calculator available on the Earned Schedule website ([www.earnedschedule.com](http://www.earnedschedule.com)).

The statistical prediction calculations are performed in the Statistical Calculation worksheet and the results graphed in several following worksheets.

# Using the Calculator

## Project Data Worksheet

In the Project Data worksheet the basic project data is entered into the template.

Steps

1. The divisor for the Cost forecast data reported in the Statistical Forecast Cost graphs has been set to a default of $,000 (thousands) of dollars. This default may be modified to $,000,000 (millions) of dollars or any other desired value**.**
2. Enter the Divisor Display
3. Enter “W” if Weekly or “M” if Monthly Earned Value is being utilized.

Entering any other value will cause an Error for the Duration Multiplier.

The Duration Multiplier is used to calculate a statistically forecast completion date in the “Stat Forecast Schedule Date” worksheet.

Note that for Monthly Earned Value the division multiplier has been simplified to an average of 30.42. This simplification introduces minor errors in the periodic calculated values, most notable for the month of February (28 or 29 days).

1. Enter the project descriptive information (Title and Status Date)
2. Enter the:
	1. Budget At Complete (BAC)
	2. Planned Duration (whole number only).

The Planned Completion date is a calculated value.

1. Enter the desired Confidence Level, generally 90 or 95 percent. The template supports any value including “6s” for a 6 Sigma Confidence Level.

The additional values:

1. Final Cost
2. Final Duration
3. Actual Completion Date

are intended for entry into the Worksheet after project completion to assist with post project analysis of project performance and the statistical predictions calculated over the life of the project.

## Input Data Worksheet

In this worksheet the time-phased Earned Value and Earned Schedule data is entered into the template.

Steps

Copy and paste **as values** to retain the correct formatting the:

1. Planned Values cumulative
2. Earned Value cumulative
3. Actual Costs cumulative
4. Earned Schedule cumulative.

Note that the input data cells are preloaded with the #N/A value as shown in Figure 1 below. The correct operation of the template requires that the #N/A values are retained where data is not input so:

* Care is required when copying and pasting data.
* Do not copy and paste recursive values, for example after the time period in which the Budget at Complete is achieved for the Planned Values.



Figure 1: Input Data Cells

Initial periods of performance may be omitted from the analysis when observed to have anomalous volatile behavior. The number of periods to be excluded is entered to either Schedule Analysis-Period Remove or Cost Analysis-Period Remove, as appropriate.

# Statistical Forecast Results

Once all required data has been correctly entered into input worksheets the statistically forecast outputs are graphed in the following worksheets:

1. Stat Forecast Cost
2. Stat Forecast Schedule
3. Stat Forecast Schedule Date
4. Percent Error in Forecasts

# Rebaselining a Project

Due to complexities in the calculations it is recommended, when using the statistical forecasting calculator, to treat the project after re-baselining as a “new project.” Input the post‑baseline project data into a new copy of the statistical forecasting calculator. To obtain the total cost and duration add the actual cost (AC) and actual duration (AT) accrued prior to the re-plan to the predicted cost and duration from the calculator output.