

Gate Value Method Overview document

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Note: This document has been prepared by Core Consulting Group to explain the Gate Value Method. While any person may use and adapt the approach and ideas contained within, Core Consulting Group must be recognised as the originator of this approach. A statement along the lines of "Noted Core Consulting Group are the originators of the Gate Value Method" would be expected.

1 INTRODUCTION

The **Gate Value Method** was developed by Core Consulting Group as an alternative to Earned Value for business and technology projects. Organisations often struggle with the implementation of Earned Value due to the effort required to set up and maintain Earned Value Management systems. The **Gate Value Method** is a far simpler approach which can provide significant benefits in terms of visibility of cost performance without the overhead and complexity associated with Earned Value Management systems.

The heart of the **Gate Value Method** is aligning Planned Value to key gateways through the project rather than to work packages and specified time periods. Rather than deriving dollar values at a point in time, the method focuses on a time for a particular dollar value. The **Gate Value Method** therefore supports staged delivery approaches, particularly phased delivery as promoted by PRINCE2 and the Gateway Review Process promoted by the Victorian State Government (initially developed by OGC UK).

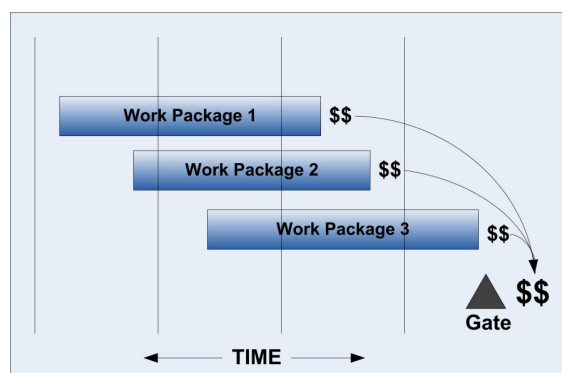
This document requires some understanding of Earned Value by the reader, but not detailed knowledge. The Earned Value approach has been clearly defined in Australian Standard AS4817 "Project performance measurement using Earned Value".

Readers should note that the approach to this document is "Open Source". This means organisations and individuals are free to use the method on the condition that Core Consulting Group is recognised as the originator of the method and any contributions or modifications to the method are fed back to our office via email (info@coreconsulting.com.au) so they may be made available to others.

2 Determining Planned Value (PV)

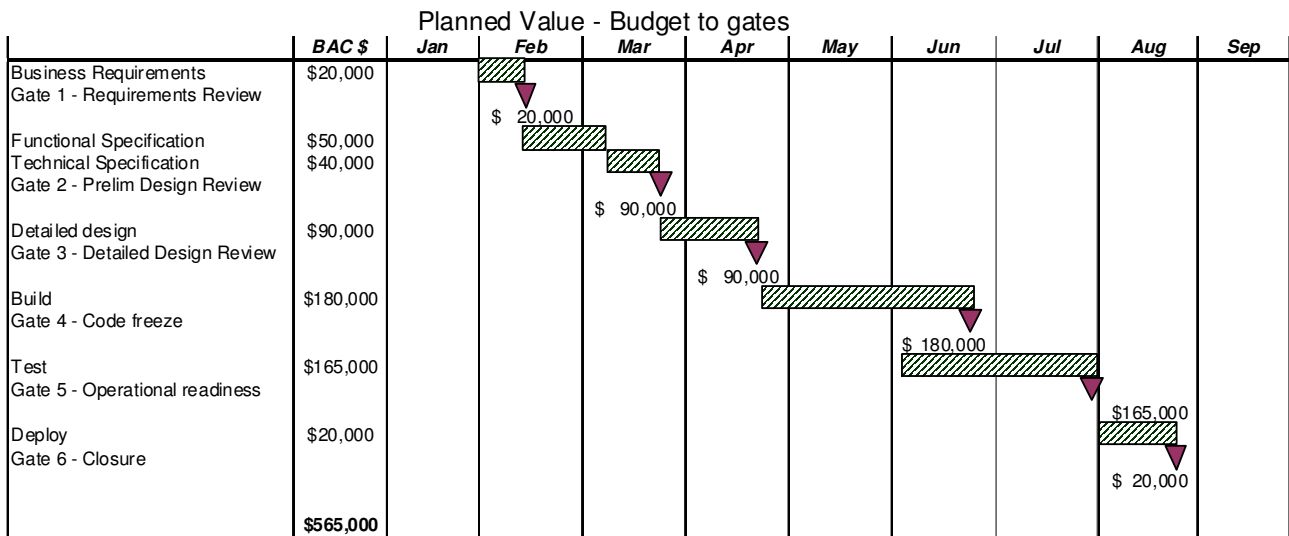
Typical Earned Value requires organisations to estimate work packages at a detailed level then distribute these dollar estimates to measurable work packages and also assign Earned Value Techniques (ways of measuring Earned Value). Planned Value is then derived cumulatively on a time phased basis, usually end of month. This can prove to be difficult, complex and time consuming.

The **Gate Value Method** approach simply requires detailed estimating for the next stage or phase of the project, eg getting from Gate 1 to Gate 2. The estimate is therefore assigned to the next gate. A schedule for that next stage, which should be done anyway, is used to predict when that gate will be achieved. The Planned Value curve is therefore derived from the dates the gates will be met and the dollar values of those gates.



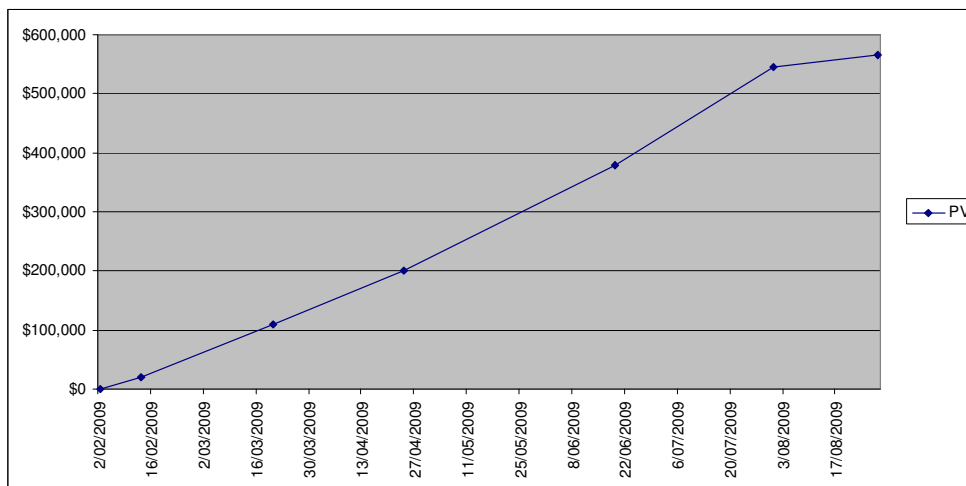
Using a Rolling wave approach to planning, budget allowances can be made for future work, for example getting from gate 3 to 4 and 4 to 5. These can then be validated as the next gate gets closer and detailed estimates are made. These plans can be validated at gate reviews.

An example is shown below for a sample project with gates added at key points in the schedule.



Gate	Start	1	2	3	4	5	6
Dates	2/02/2009	13/02/2009	20/03/2009	24/04/2009	19/06/2009	31/07/2009	28/08/2009
PV gate	\$0	\$ 20,000	\$ 90,000	\$ 90,000	\$ 180,000	\$ 165,000	\$ 20,000
PV cum	\$0	\$20,000	\$110,000	\$200,000	\$380,000	\$545,000	\$565,000

The following graph shows the curve of Planned Value over time using the approach shown above.

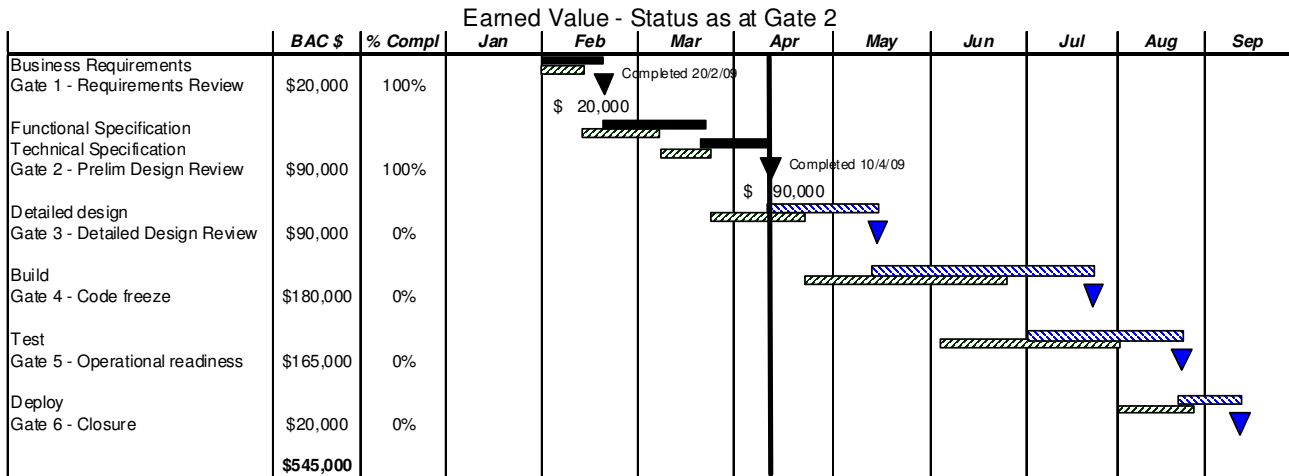


3 Determining Earned Value (EV)

Typical Earned Value requires Organisations to implement an approach whereby work packages are statused on a regular basis which then derives Earned Value at a point in time against each work package via an Earned Value Technique. Earned Value requires an historical control system capturing previous Earned Value at a detailed level as well as content for the graphical and statistical analysis. Earned Value requires discipline from Project Managers and alignment of Actuals to ensure Actual Cost and Earned Value are recorded in the same period. All of which again can prove to be difficult, complex and take significant effort.

The **Gate Value Method** approach is far simpler since analysis is only ever done as a gate is passed. At that point in time the Earned Value is known, it is the value of the gate. The Earned Value figures are therefore derived from the dates the gates are met and the dollar values of the gates.

An example is shown below for the sample project as it passes through Gate 2.



Gate	Start	1	2	3	4	5	6
Actual	2/02/2009	20/02/2009	10/04/2009				
% Compl	100%	100%	100%				
BAC gate	\$0	\$ 20,000	\$ 90,000				
EV inc	\$0	\$20,000	\$90,000				
EV cum	\$0	\$20,000	\$110,000				

4 Determining Actual Cost (AC)

Traditional Earned Value requires Project Managers to extract Actual cost, against work packages on a regular basis, typically end of month. Since this ties in well with normal accounting practices, extracting Actual costs is fairly straight forward. Complexity sometimes arises with Accruals, with aligning Actual Costs with Earned Value however and with structuring cost control accounts in line with work packages.

The **Gate Value Method** approach only requires calculation of cumulative Actual cost as each gate is passed, incremental Actual cost can be derived. There is no need to structure Cost control accounts by phase or work package.

Since a gate may fall mid month, an "Estimated Actuals" approach may be required to determine Accrual of Actual costs since the previous end of month cumulative Actual cost. For mature environments, Actual costs at a point in time may be possible directly from the accounting system.

The example below shows the same example project with hypothetical Actual costs added at the end of each gate (they would have been obtained from the accounting system plus an estimate of Accrual).

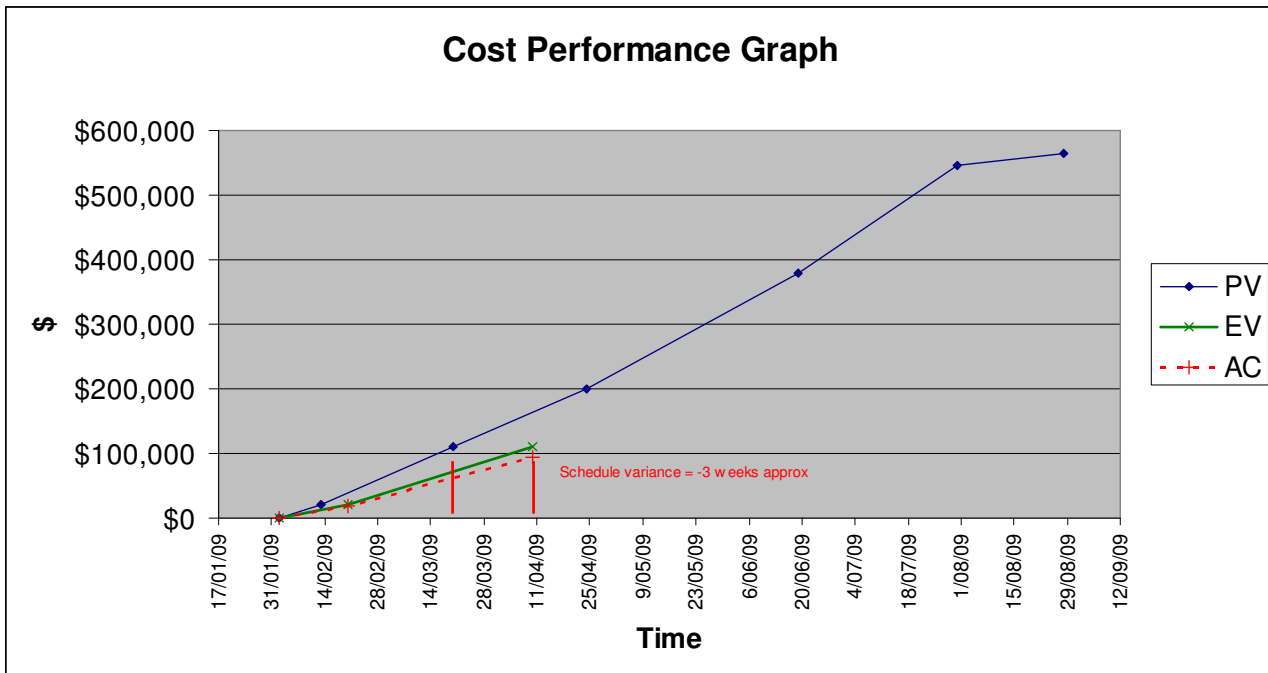
Actual costs - as at Gate 2

Gate	Start	1	2	3	4	5	6
Actual	2/02/2009	20/02/2009	10/04/2009				
AC inc	\$0	\$19,450	\$74,430				
AC cum	\$0	\$19,450	\$93,880				

5 Analysis

5.1 Graphical analysis

Traditional Earned Value shows dollars over set time periods. The Gate review process shows dollar values at the gates. What can be easily derived graphically is the schedule variance in time. The example below shows a three week schedule variance graphically using a "scatter graph" (note the time increments are 2 weeks).



5.2 Numerical analysis

Through analysis of the figures, more traditional Earned Value data can be derived including:

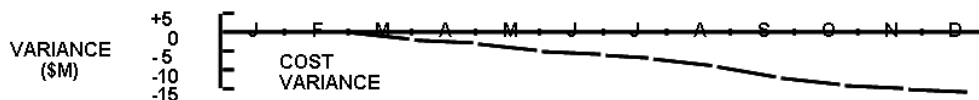
$$CV = EV - AC \quad \text{Cost variance (-ve bad)}$$

$$CPI = EV / AC \quad \text{Cost Performance Index (<1.0 bad)}$$

Where

EV is Earned Value
AC is Actual Cost

Cost Variance shows by how much the costs have already blown out. It is particularly useful for showing performance over time, trends etc if graphed. This can then be used to predict future performance, especially useful for deriving an Estimate at Completion (EAC).



In the example, the numerical analysis would be as shown below:

Cost Variance - as at Gate 2

Gate	0	1	2	3	4	5	6
<i>EV cum</i>	\$0	\$20,000	\$110,000				
<i>AC cum</i>	\$0	\$19,450	\$93,880				
<i>CV cum</i>	\$0	\$ 550	\$16,120				
<i>CPI cum</i>	n/a	1.03	1.17				

5.3 Independent Estimate at Completion

Through derivation of CPI as a gate is passed, an independent Estimate to Complete (ETC) and hence Estimate at Completion can be derived using the formula:

$$IEAC = AC + (BAC-EV)/CPIF$$

Where

- CPIF is a forecast of CPI through to completion taking into account past performance, productivity and other factors
- BAC is Budget at Completion
- EV is Earned Value
- AC is Actual Cost

From a Project Manager and Sponsor’s perspective they are most interested in the Variance at Completion. The IEAC could be used if need be.

$$VAC = BAC - EAC$$

In the example used in this document, the IEAC would be as shown below:

IEAC Calc - as at Gate 2

Gate	0	1	2	3	4	5	6
<i>BAC</i>	\$565,000						
<i>EV cum</i>	\$0	\$20,000	\$110,000				
<i>AC cum</i>	\$0	\$ 19,450	\$93,880				
<i>ETC</i>	\$565,000	\$544,434	\$436,112				
<i>EAC</i>	\$565,000	\$563,884	\$529,992				

Figures such as these would give the Project Manager confidence that the budget will be met despite being three weeks behind schedule.

6 Aligning gates to real work

Since the method is reliant on gates, they must be representative of the culmination of lead up work. Gate names may change from organisation to organisation although often their intent is similar. Proposed gates could include:

- Validation of Concept and/or Strategic need, often aligned to initiation, sometimes culminating in a Business Requirements review
- Completion of feasibility, usually aligned to sign off of Business case and/or funding approval
- Design review aligned with culmination of design. This could be further broken down into Preliminary and Detailed design
- Completion of build (eg Code freeze), or alignment with commencement of System Testing, typically a Test Readiness Review
- Completion of testing and preparation for deployment, often aligned with an Operational Readiness Review.
- Completion and post project wrap up tasks, typically culminating in a Post Implementation Review or Project Closure Review.
- Potentially well after Project completion there may be a follow up Benefits Review. This could align with culmination of post project support.