Tracking How Well are We Doing
One way to track how close to “done” the project is:

- As key parts of a product are completed, the product “earns value”.

- Express earned value in % of total value or $ (= % x budgeted amount for task)

- Some variations allow partial credit, others don’t.
Earned Value vs. Time

target: project complete
Earned Value vs. Time

earned value

100%

- task completed

100  200  300

time
Earned Value vs. Time

- Earned value
- Project complete
- Task completed
- Time

100%
Use of Earned Value Diagram

- Based on project Gantt chart, create a profile plan of earned value

- Track actual earned value against plan

- Use discrepancies to make projections about delivery dates, cost, etc.
Project Ahead of Schedule

- earned value
- actual earned value
- planned earned value profile
- time
- 100%, 100, 200, 300
Project Behind Schedule

earned value

100%

planned
earned value profile

actual earned value

slippage

time

100 200 300
Earned Value with sub-tasks in $ (% x budget)

### Earned Value Calculation Example

<table>
<thead>
<tr>
<th>Task</th>
<th>2000</th>
<th>Budget</th>
<th>Percent Complete</th>
<th>Earned Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1</td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
</tr>
<tr>
<td>Task 1-1</td>
<td>$333.00</td>
<td>100.0%</td>
<td>$333.00</td>
<td></td>
</tr>
<tr>
<td>Task 1-2</td>
<td>$444.00</td>
<td>100.0%</td>
<td>$444.00</td>
<td></td>
</tr>
<tr>
<td>Task 1-3</td>
<td>$555.00</td>
<td>100.0%</td>
<td>$555.00</td>
<td></td>
</tr>
<tr>
<td>Task 1-4</td>
<td>$55.00</td>
<td>100.0%</td>
<td>$55.00</td>
<td></td>
</tr>
<tr>
<td>Task 2-1</td>
<td>$434.00</td>
<td>100.0%</td>
<td>$434.00</td>
<td></td>
</tr>
<tr>
<td>Task 2-2</td>
<td>$333.00</td>
<td>65.0%</td>
<td>$216.45</td>
<td></td>
</tr>
<tr>
<td>Task 2-3</td>
<td>$111.00</td>
<td>100.0%</td>
<td>$111.00</td>
<td></td>
</tr>
<tr>
<td>Task 2-4</td>
<td>$333.00</td>
<td>50.0%</td>
<td>$166.50</td>
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</tr>
<tr>
<td>Task 3-1</td>
<td>$444.00</td>
<td>70.0%</td>
<td>$310.80</td>
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<tr>
<td>Task 3-2</td>
<td>$5,565.00</td>
<td>67.5%</td>
<td>$3,747.43</td>
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<tr>
<td>Task 3-3</td>
<td>$666.00</td>
<td>37.0%</td>
<td>$246.42</td>
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<table>
<thead>
<tr>
<th>Budget</th>
<th>2000.00</th>
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<tbody>
<tr>
<td>BCWP</td>
<td>-400.00</td>
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</tbody>
</table>

???
# Example Gantt Chart with Earned Value Overlay


## Contract Review

**Earned Value Report**

<table>
<thead>
<tr>
<th>Task</th>
<th>2001</th>
<th></th>
<th></th>
<th>BCWS</th>
<th>ACWP</th>
<th>BCWP</th>
<th>PRCNT CMPLT</th>
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<tbody>
<tr>
<td></td>
<td>October</td>
<td>November</td>
<td>December</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task 1</td>
<td>10/14</td>
<td>12/1</td>
<td>12/1</td>
<td>4000.00</td>
<td>$950.00</td>
<td>$725.00</td>
<td>$665.69</td>
</tr>
<tr>
<td>Task 1-A</td>
<td></td>
<td></td>
<td></td>
<td>$300.00</td>
<td>$200.00</td>
<td>$216.67</td>
<td>72.2%</td>
</tr>
<tr>
<td>Task 1-B</td>
<td></td>
<td></td>
<td></td>
<td>$400.00</td>
<td>$350.00</td>
<td>$310.00</td>
<td>77.5%</td>
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<td>Task 1-C</td>
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<td>$250.00</td>
<td>$175.00</td>
<td>$151.16</td>
<td>60.6%</td>
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<td>Task 2</td>
<td>11/3</td>
<td>12/1</td>
<td>12/1</td>
<td>2500.00</td>
<td>$1,300.00</td>
<td>$500.00</td>
<td>$742.86</td>
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<tr>
<td>Task 2-A</td>
<td></td>
<td></td>
<td></td>
<td>$725.00</td>
<td>$200.00</td>
<td>$402.78</td>
<td>55.6%</td>
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<tr>
<td>Task 2-B</td>
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<td>$225.00</td>
<td>$100.00</td>
<td>$139.86</td>
<td>62.1%</td>
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<tr>
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<td>$350.00</td>
<td>$200.00</td>
<td>$190.91</td>
<td>54.5%</td>
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<td>Task 3</td>
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<td>12/17</td>
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<td>$1,775.00</td>
<td>$150.00</td>
<td>$713.32</td>
<td>40.2%</td>
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<tr>
<td>Task 3-A</td>
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<td>$550.00</td>
<td>$150.00</td>
<td>$310.26</td>
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<tr>
<td>Task 3-B</td>
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<td></td>
<td></td>
<td>$800.00</td>
<td>$0.00</td>
<td>$320.00</td>
<td>40.0%</td>
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<tr>
<td>Task 3-C</td>
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<td>$425.00</td>
<td>$0.00</td>
<td>$90.15</td>
<td>21.2%</td>
</tr>
</tbody>
</table>

- **Earned Value**: ▲ Program Review
- **Budget**: ![budget](https://via.placeholder.com/15)
- **Spending**: ▼ Status
- **Summary**: □ Summary

Contracts review: 11-30-01
Sign Off: ________________
Implication of Slippage

- Slippage in earned value may imply slippage in delivery date,

especially if the slipped task is on the critical path.
Slip Chart

announced delivery date

days into project
Slip Chart

slip = delivery date minus previously announced delivery date

new announcement

slip = 50 days
Slip Chart

announced delivery date

slip = 25 days
Slip Chart

smallest slips are better

announced delivery date

slip = 25 days

days into project
Slip Chart

announced delivery date

actual delivery

line of announced = elapsed

overall slippage

elapsed
Word for Windows 1.0 Slip

\[
\frac{1880}{365} = 515\% \text{ net slip}
\]

Slip vs. Lead

- slip = delivery date minus previously announced delivery date

- lead = previously announced delivery date minus date on which new delivery announced
Example of Lead

- lead = previously announced delivery date minus date on which new delivery announced

Example:

- Original delivery date = day 200
- On day 100 announce new delivery date: day 300: moderate lead
Example of Lead

- lead = previously announced delivery date minus date on which new delivery announced

- Original delivery date = day 200

- On day 195 announce new delivery date: day 300: very small lead

- Small leads are bad (but small slips are good)
Slip-Lead Chart
(plots slips vs. leads)
Slip-Lead Chart
(plots slips vs. leads)

- **unhealthy** region (large slips, small leads)
- **healthy** region (large leads, small slips)
Word for Windows 1.0 Slip/Lead