Question 1

You have a project to build a new fence. The fence is a four sided square. Each side is to take one day to build and is budgeted for $1,500 per side. The sides are planned to be completed one after the other. Today is the end of day three. Using the project status information listed below, calculate PV, EV, AC, Budget at Completion (BAC), CV, SV, Estimated Cost at Completion (ECAC), Estimated Time at Completion (ETAC), Cost Variance at Completion, and Schedule Variance at Completion.

|  |  |
| --- | --- |
| **Activity** | **Status at End of Day 3** |
| Side 1 | Complete, spent $1,500 |
| Side 2 | Complete, spent $1,750 |
| Side 3 | 50% done, spent $1,000 |
| Side 4 | Not yet started |

**Planned Value (PV)** = BAC \* (time passed / total schedule time)

**Budget at Completion (BAC) = Planned Budget**

**BAC** = 1500\*4 = **$6,000**

Time passed = 72 hours

Total scheduled time = 96 hours

**PV** = 6000 \* (72 / 96) = **$4500**

Earned Value (EV) = BAC \* (work completed / total work required)

Work completed = 2.5 sides completed

Total work required = 4 sides required

**EV** = 6000 \* (2.5 / 4) = **$3750**

**Actual cost (AC) =** $3,250 (completed sides) + $1,000 (Side 3)= **$4250**

**Cost Variance (CV**) = EV – AC = **$3750 - $4250 = -$500.00 (over budget)**

**Schedule Variance (SV)** = EV – PV = **$3750 - $4500 = -$750.00 (behind schedule)**

**Estimated Cost at Completion (ECAC)** = BAC \*( AC / EV) = $6,000 \* ( $4250 / $3750 ) = **$6,800.00**

**Estimated Time at Completion (ETAC)** = Original Time \* (PV/ EV)

Original Time = 96 hours

**ETAC** = 96 \* ( 4500 / 3750) = **115.2 hours = 4.8 days**

**Cost Variance at Completion (CVAC)** = BAC – ECAC = **$6,000 - $6,800 = -$800**

**Schedule Variance at Completion (SVAC)** = Original Time – ETAC = 96 – 115.2 = **-19.2 hours.**

PV = **$4500**,

EV = **$3750**,

AC = **$4250**,

Budget at Completion (BAC) = **$6,000,**

CV = **-$500.00 (over budget)**

SV =  **-$750.00 (behind schedule)**

Estimated Cost at Completion (ECAC) = **$6,800.00**

Estimated Time at Completion (ETAC) = **115.2 hours = 4.8 days**

Cost Variance at Completion = **-$800**

and Schedule Variance at Completion = **-19.2 hours**

Question 2

Is the following project ahead of schedule, on schedule or behind schedule at day 20?

Is the following project over budget, at budget or under budget at day 20?

Graphical user interface, chart, line chart

Description automatically generated

At day 20:

Earned value = 15K

Actual Cost = 14K

Planned Value = 20K

At day 20 we are **behind schedule** (Planned Value > Earned Value)

At day 20 we are **under budget** (Earned Value > Actual Cost)