Project Evaluation and Control
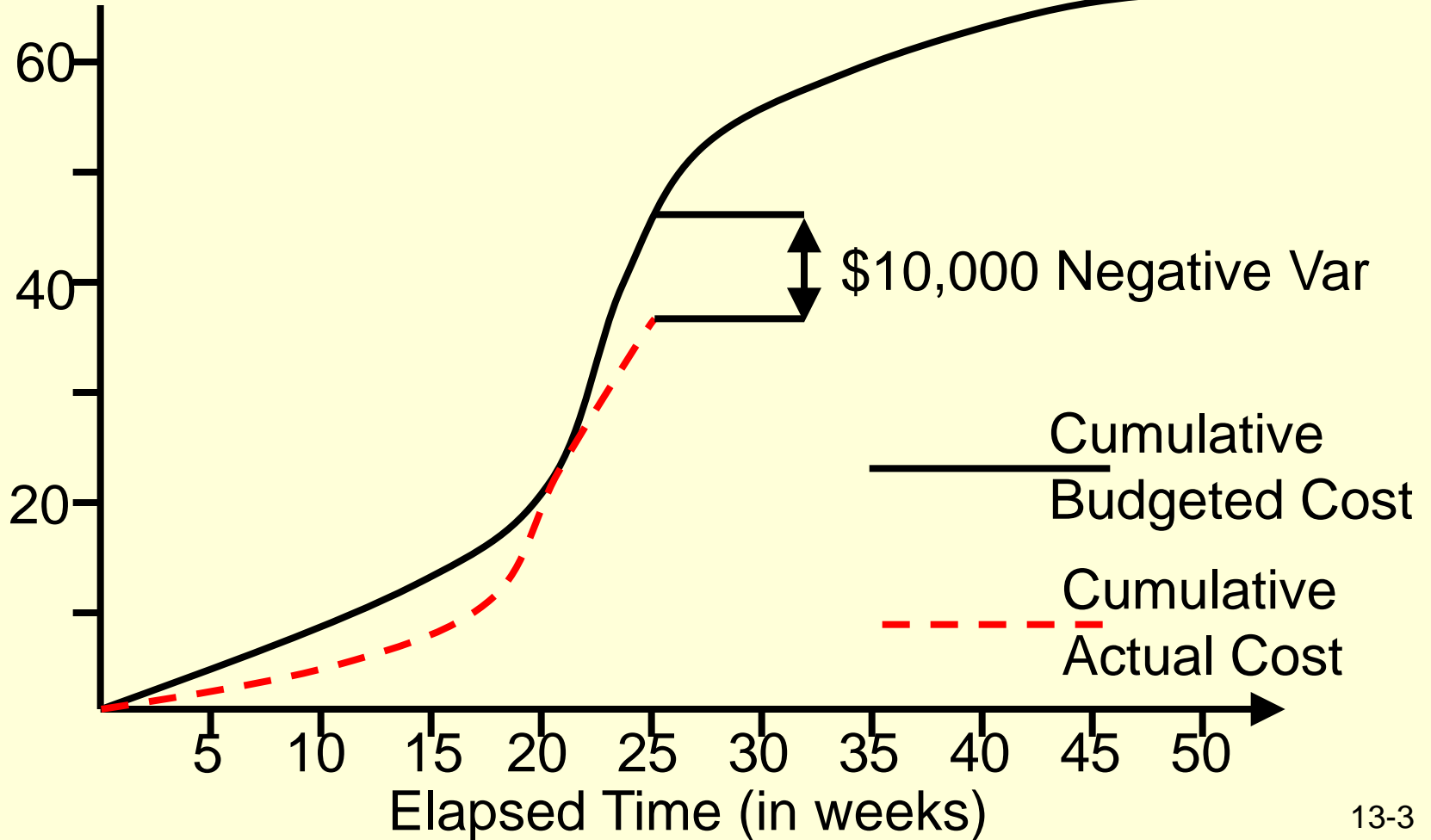
Chapter 13

The Project Control Cycle

1. Setting a Goal

2. Measuring Progress

3. Comparing Actual with Planned

4. Taking Action and Recycling the Process
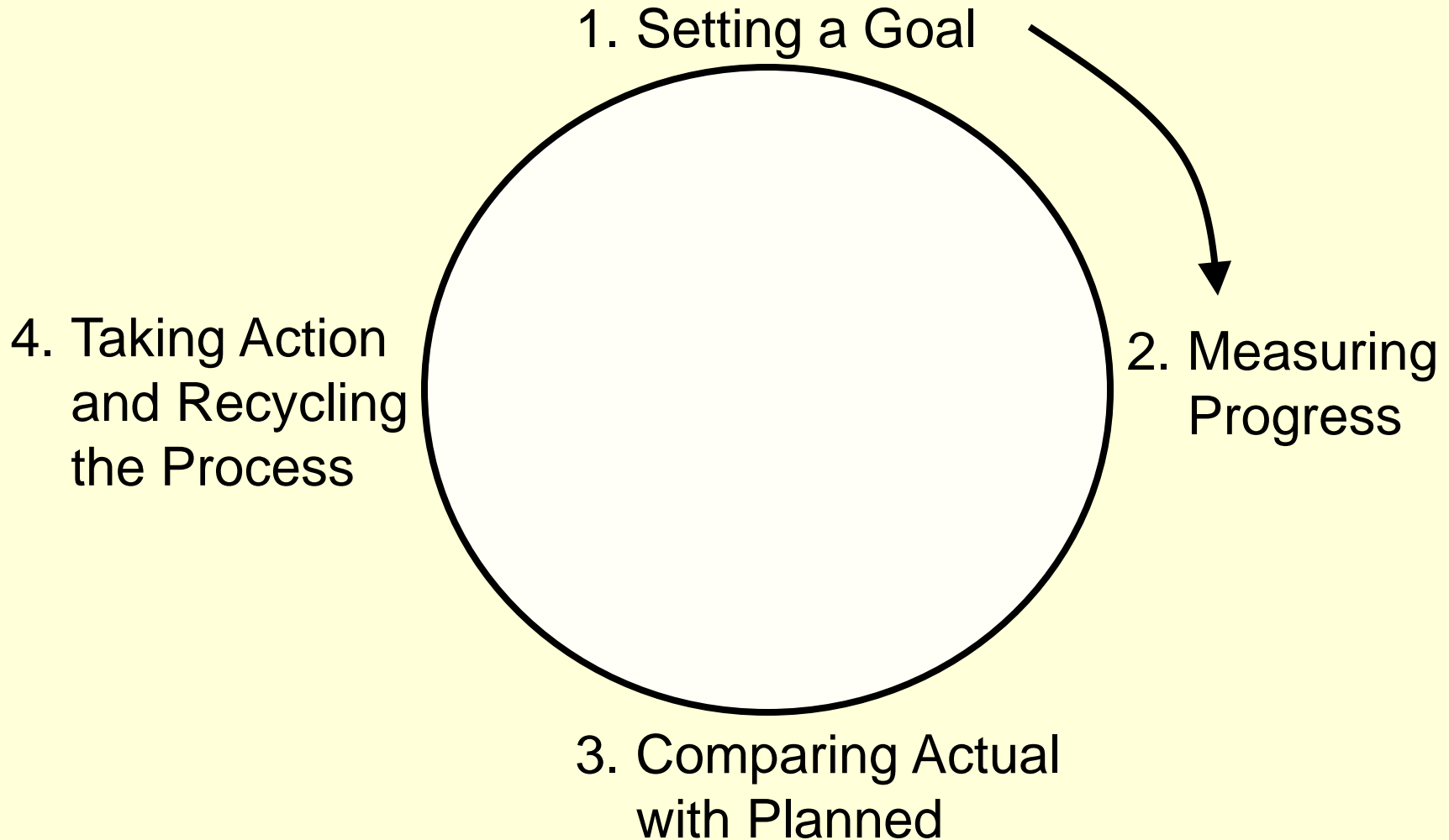
The Project S-Curve

Cumulative Cost
($ in thousands)

$10,000 Negative Var

———— Cumulative Budgeted Cost

- - - - Cumulative Actual Cost
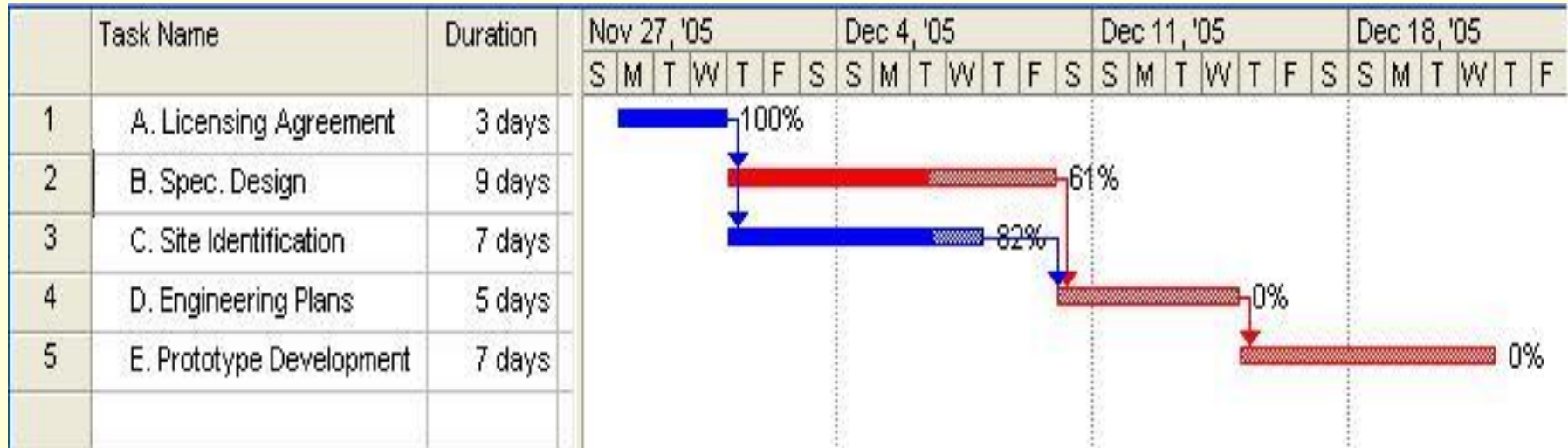
Elapsed Time (in weeks)

13-3

Milestone Analysis

Milestones are ***events or stages*** of the project that represent a ***significant accomplishment.***
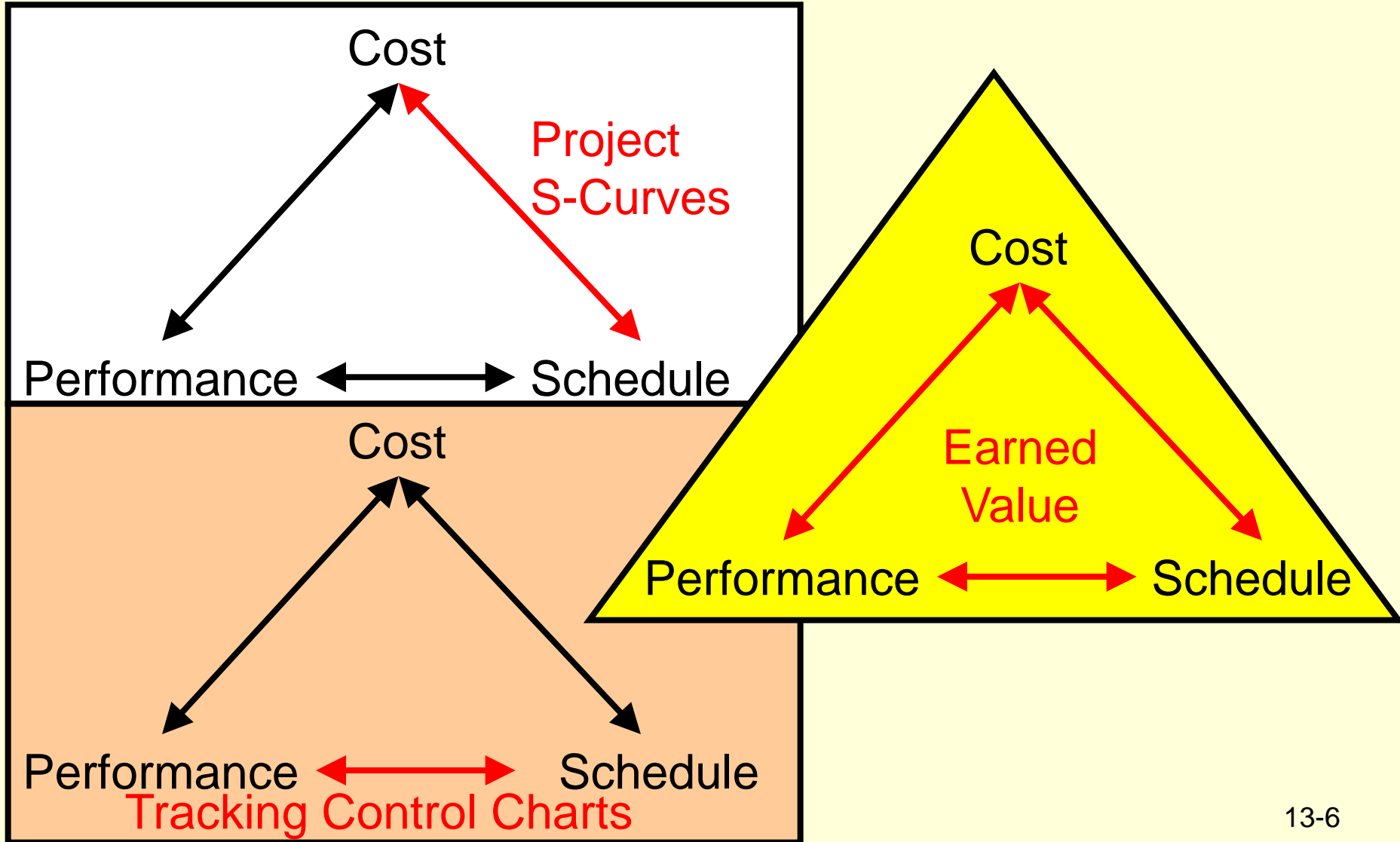
Milestones
…**signal** the team and suppliers
…can **motivate** the team
…offer **reevaluation** points
…help **coordinate** schedules
…**identify** key review gates
…**delineate** work packages

Tracking Gantt Chart

	Task Name	Duration
1	A. Licensing Agreement	3 days
2	B. Spec. Design	9 days
3	C. Site Identification	7 days
4	D. Engineering Plans	5 days
5	E. Prototype Development	7 days

Nov 27, '05 — Dec 4, '05 — Dec 11, '05 — Dec 18, '05

- A. Licensing Agreement: 100%
- B. Spec. Design: 61%
- C. Site Identification: 82%
- D. Engineering Plans: 0%
- E. Prototype Development: 0%

Project status is updated by linking task completion to the schedule baseline

Earned Value Management

Cost

Project
S-Curves

Performance ←→ Schedule

Cost

Performance ←→ Schedule
Tracking Control Charts

Cost

Earned
Value

Performance ←→ Schedule

Earned Value Terms

❖ Planned value

❖ Earned value

❖ Actual cost of work performed

❖ Schedule performance index

❖ Cost performance index

❖ Budgeted cost at completion

Steps in Earned Value Management

1. *Clearly define each activity* including its resource needs and budget

2. *Create usage schedules* for activities and resources

3. *Develop a time-phased budget* (PV)

4. *Total the actual costs* of doing each task (AC)

5. *Calculate* both the budget variance (CV) and schedule variance (SV)

Earned Value Milestones
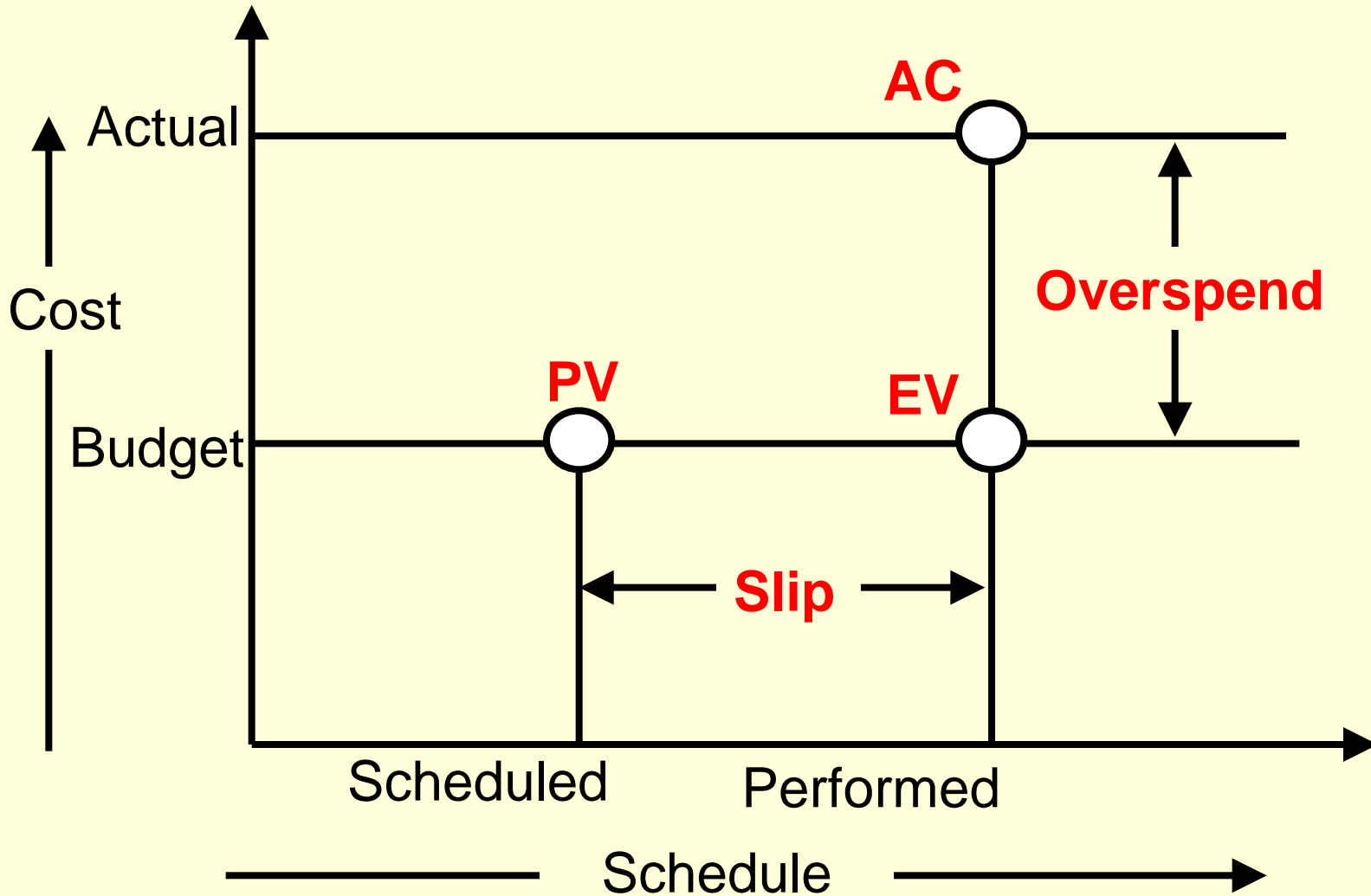
Earned Value Example

Value
8=80%(10)

Activity	Jan	Feb	Mar	April	Plan	%C	Value
Staffing	8	7			15	100	15
Blueprint			4	6	10	80	8
Prototype			2	8	10	60	6
Design				3	3	33	1
Mon Plan	8	7	6	17	**38**	∑	**30**
Cmltv	8	15	21	38			
Mon Act	8	11	8	13			
Cmltv Act	8	19	27	40			

Earned Value
30=15+8+6+1

Planned Value
38=15+10+10+3

Cumulative
40=8+11+8+13

13-10

Earned Value Example

<u>Schedule Variances</u>

Planned Value (PV) = 38 = 15+10+10+3

Earned Value (EV) = 30 = 15+8+6+1

Schedule Performance Index = .79 = 30/38 = EV/PV

Estimated Time to Completion = (1/.79)x4=5

<u>Cost Variances</u>

Actual Cost of Work Performed (AC) = 40 = 8+11+8+13

Cost Performance Index = .75 = 30/40 = EV/AC

Estimated Cost to Completion = 50.7 = (1/.75)x38

Completion Values in EVM

Accurate and **up-to-date** information is **critical** in the use of **EVM**

➢ 0/100 Rule

➢ 50/50 Rule

➢ Percentage Complete Rule

Human Factors in
Project Evaluation & Control

❖ Optimistic progress reports

❖ Level of detail

❖ Process evaluation

❖ Non-technical performance measurement

Critical Success Factors in the Project Implementation Profile

1. Project mission
2. Top management support
3. Project plans & schedules
4. Client consultation
5. Personnel
6. Technical tasks
7. Client acceptance
8. Monitoring & feedback
9. Communication channels
10. Troubleshooting