Integrating Cost and Schedule

Week 10
Construction Estimation, Planning and Control

Assumptions

• Increasing or decreasing and activity duration increases cost for that activity
• Decreasing a project’s duration leads to lower indirect costs
• A project’s duration can be decreased by decreasing duration of critical path
• Delta diff from increasing direct cost and reducing indirect cost: the optimal time and cost

Cost + Schedule

• Guidelines for integrating cost and schedule data
• Pioneered by US Defense agencies in the 1960s
  ▪ DOD: Cost and Schedule Control System Criteria (C/SCSC)
  ▪ DOE: Performance Measurement System (PMS)

Earned Value

| Parameters | Schedule Variance (SV) = BCWP – BCWS
|           | ▪ SPI = BCWP/BCWS (Sched. Perform. Index)
|           | Cost Variance (CV) = BCWP – ACWP
|           | ▪ CPI = BCWP/ACWP (Bud. Perform. Index)
|           | EAC = ACWP + (BAC – BCWP)
|           | Earned Value = % Comp. x BAC

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| Work Scheduled | Budgeted | Actual | Forecast |
|               | BCWS     | ACWP   |          |
| Work Performed| BCWP     | ACWP   |          |
| At Completion  | BAC      | FAC    |          |