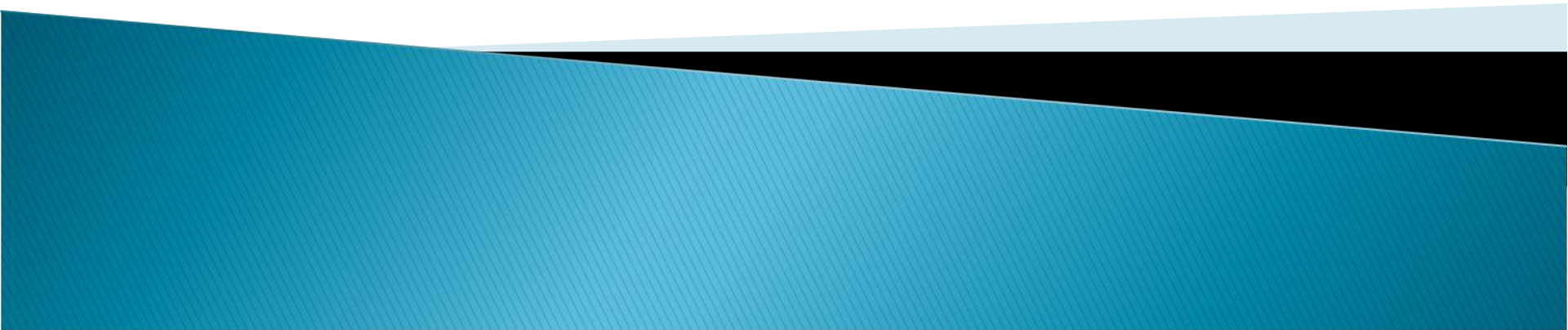


# ICT PROJECT MANAGEMENT

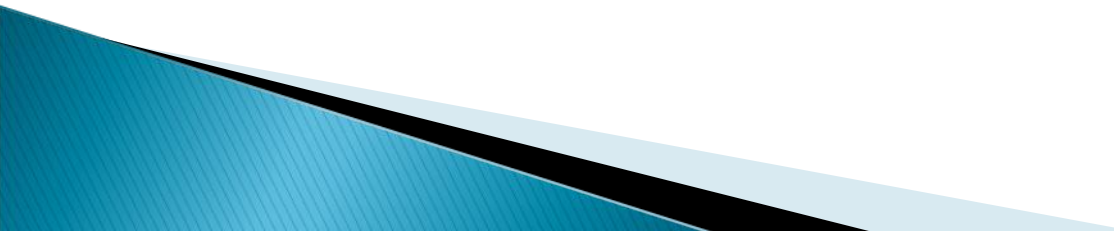
## LECTURE 10: PROJECT MONITORING & CONTROL



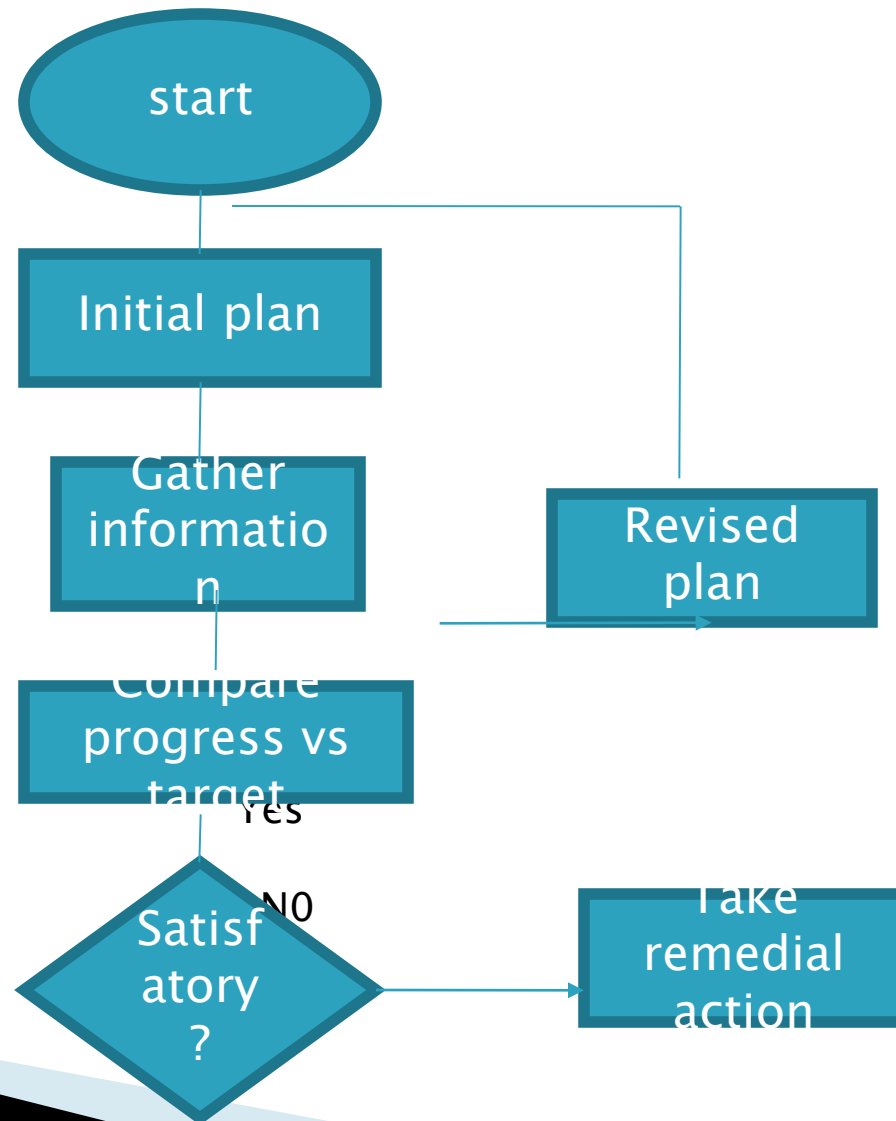
# Objectives

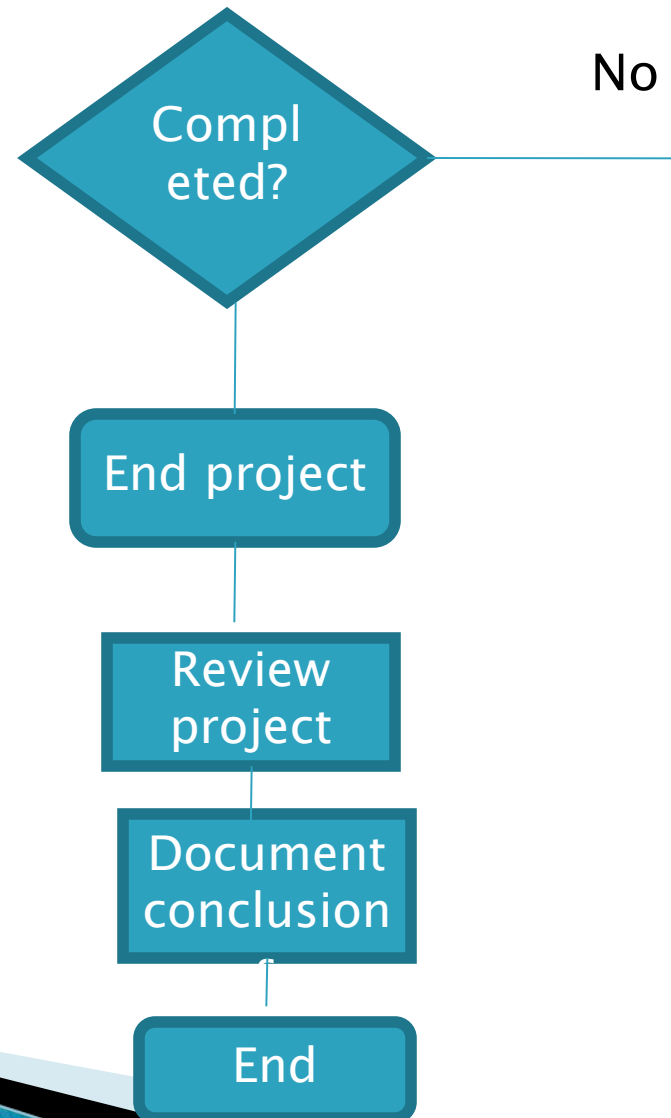
- ▶ Monitor progress of projects
- ▶ Assess the risk of slippage
- ▶ Revise targets to correct drift
- ▶ Control changes to projects' requirements

# Introduction

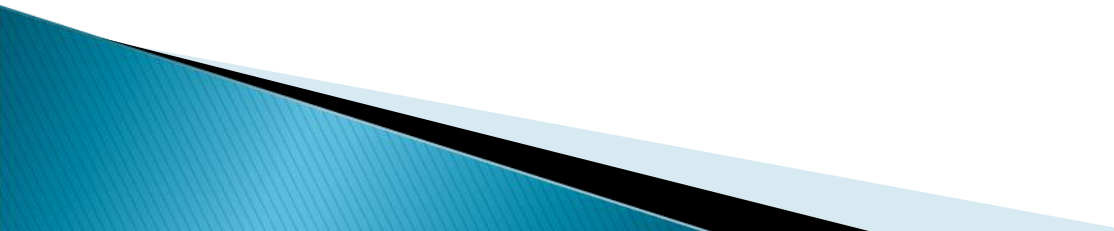
- ▶ Project monitoring entails finding out what is happening and comparing with current targets and if there is mismatch between the planned outcomes and actual ones then replanning is required
  - ▶ This is done in a respective manner as depicted in the diagram below.
  - ▶ Project activities must have clearly defined and visible completion points.
- 

# Project control cycle





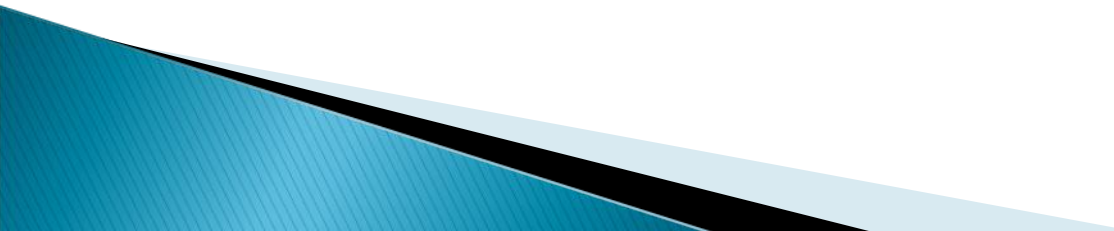
# Common causes of deviation

- ▶ Delays in meeting target dates
  - ▶ Shortfalls in quality
  - ▶ Inadequate functionality
  - ▶ Costs going over target
- 

# Responsibility

- ▶ Overall responsibility – Project steering committee/project board
- ▶ Day-to-day – Project manager

# Reporting structure

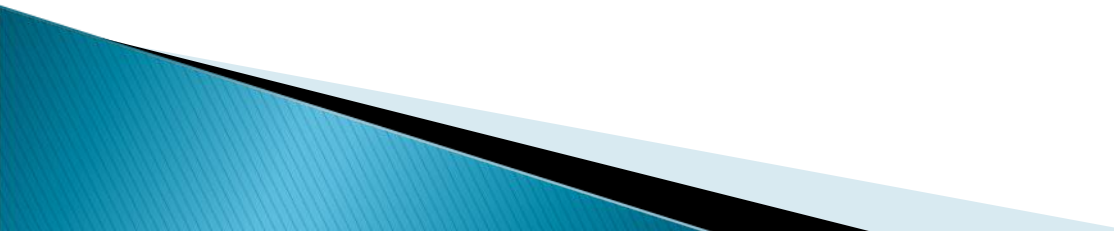
- ▶ Oral formal regular
  - ▶ Oral formal ad hoc
  - ▶ Written formal regular
  - ▶ Written formal ad hoc
  - ▶ Oral informal ad hoc
- 



# Types of reporting

- ▶ Partial completion reporting
  - E.g time sheets used to charge staff time to individual jobs
- ▶ Risk reporting e.g traffic light method
  - Identify key (first ) elements for assessment
  - Break the key elements into second level
  - Assess the second level elements on the scale **green** for on target, **amber** for not on target but recoverable and **red** for not on target but recoverable with difficulty
  - Review all second level assessments to arrive at 1<sup>st</sup> level
  - Review all first level and second level assessments to produce final results

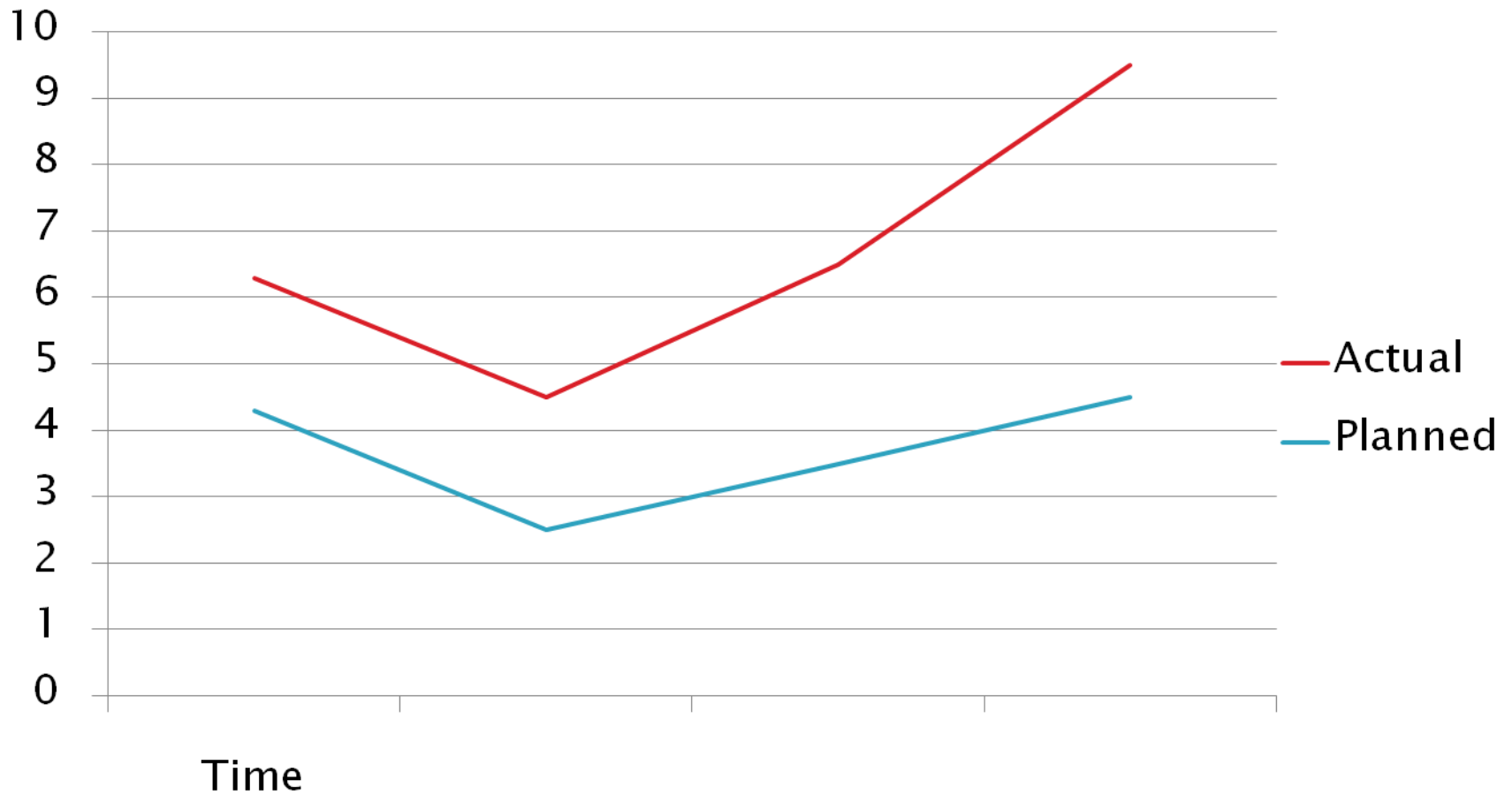
# Visualizing progress

- ▶ Gantt chart – shows scheduled activity dates and durations in a bar chart
  - ▶ Slip chart – shows activities that are not progressing on schedule
  - ▶ Ball wall chart – uses circles to indicate start and completion points for activities.
  - ▶ Timeline – records and displays the way in which targets have changed throughout the project duration (planned time on horizontal axis and actual time on vertical axis)
- 

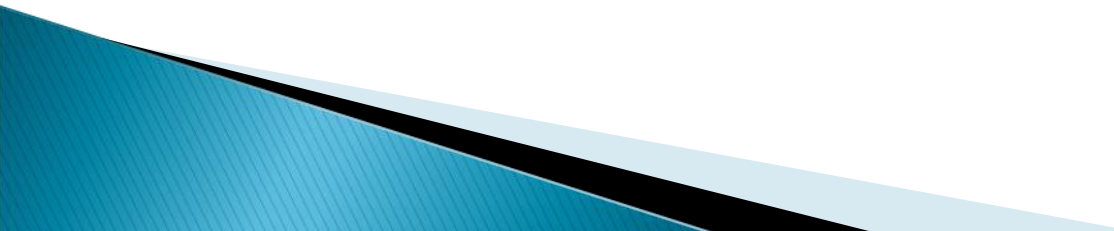
# Cost monitoring

- ▶ Important as a way of project control but also provides indication of the effort that has gone into the project
- ▶ Cumulative Expenditure Charts – represents cumm. Cost vs time in the axes
  - Shows project timeliness
  - Shows planned expenditure vs actual exp. graphically

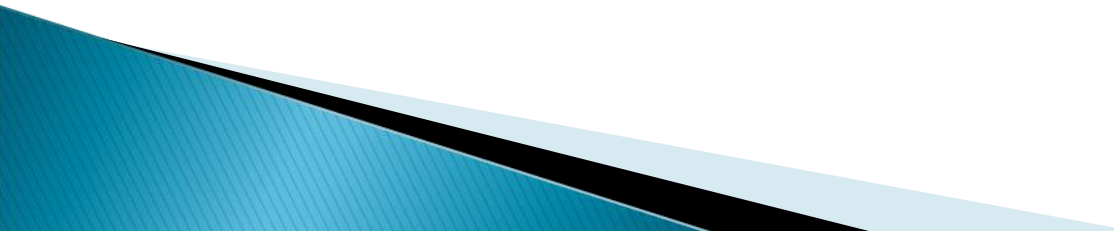
# Cumulative expenditure chart



# Revised cumm. chart

- ▶ Includes
    - revised total cost
    - Revised completion time
  - ▶ Involves adding projected future costs calculated by adding the estimated costs of uncompleted work to the costs already incurred
- 

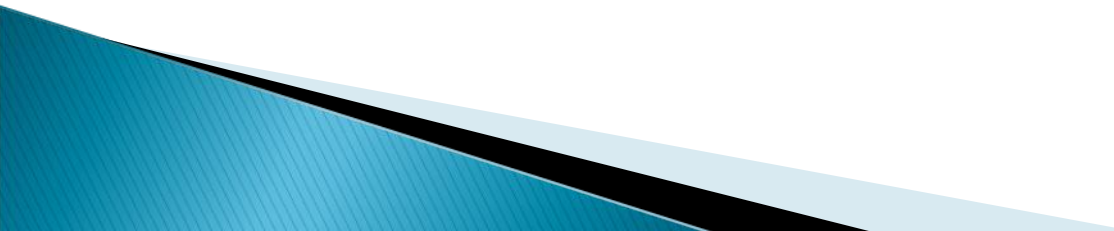
# Earned Value Analysis

- ▶ Refinement of cost monitoring techniques discussed earlier
  - ▶ Based on assigning value to each task/work package depending on the original expenditure forecasts
  - ▶ Assigned value known as Planned Value (PV)  
Or Budgeted Cost of Work Scheduled (BCWS)
  - ▶ Non started task is assigned Zero value and when completed it is credited with value of the task
- 

# Earned Value Analysis Cont'

- ▶ The total value credited to a project at any point is known as the Earned Value (EV) or
- ▶ Budgeted Cost of Work Performed (BCWP) which can be represented as a percentage of the PV.

# Earned Value Analysis Cont'

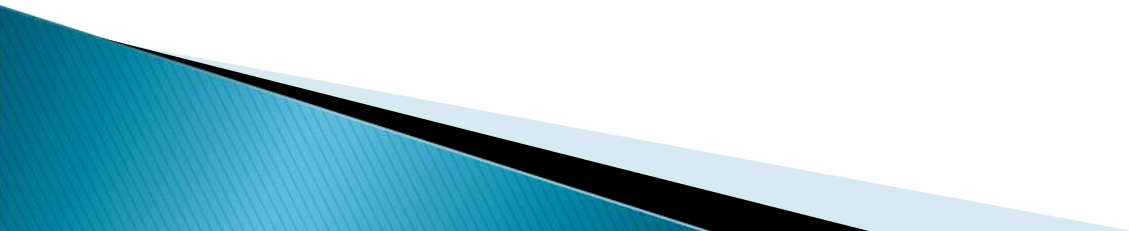
- ▶ Where tasks have been started but not yet complete, some method of assigning EV are used. These include;
  - ▶ **0/100 Technique** –A task is assigned a value of Zero until such time that it is completed when it is given a value of of 100% of the budgeted value.
  - ▶ **50/50 Technique** – A task is assigned a value of 50% of its value as soon as it is started and then given a value of 100% once completed.
- 



# Earned Value Analysis Cont'

- ▶ The milestone technique – a task is given a value based on the achievement of milestones that have been assigned values as part of the original budget plan.

Critique the three techniques?



# The Baseline Budget

- ▶ Based on project plan and shows the forecast growth in earned value through time
- ▶ EV can be measured monetarily but can be measured in person-hours in case of s/w projects



# Example: baseline budget calculation

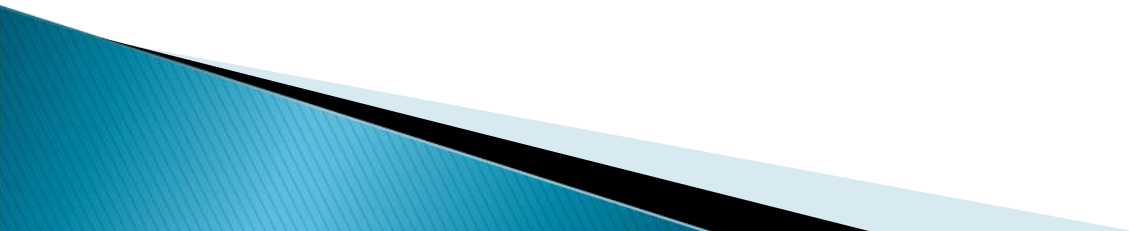
Task	Budgeted workdays	Scheduled completion / Elapsed days	Cumulative workdays	% cumulative EV
Specify overall system	34	34	34	14.35
Specify Module B	15	49	64	27.00
Specify Module D	15	49		
Specify Module A	20	54	84	35.44
Check specs	2	56	86	36.28
Design module D	4	60	90	37.97
Design Module A	7	63	97	40.93

# EV-based performance statistics


- ▶ Scheduled variance =  $EV - PV$ 
  - Indicates degree to which the value of completed work differs from the planned work
- ▶ Cost Variance =  $EV - AC$ 
  - Indicates difference between budgeted cost and actual cost
- ▶ Performance ratios
  - Cost performance Index  $CPI = EV/AC$
  - Scheduled Performance Index  $SPI = EV/PV$

# Getting project back on track

- ▶ Shorten the critical path
- ▶ Reconsider the precedence requirements



# Change control

- ▶ Necessary due to interrelationship between processes/documents
  - ▶ Procedure
    - Change request by user
    - Request considered and approved/disapproved
    - Analysis of the cost to determine cost implications
    - Report back to user management
    - Copies taken to master products to be modified
    - Copies modified
    - Copies released for user acceptance testing
    - Authorise operational release
- 

# Summary

- ▶ No need to plan unless execution of the plan is monitored
  - ▶ Subdivide activities to make them easy to control
  - ▶ Measure progress through delivery of products
  - ▶ Charts suitable for showing progress
  - ▶ Monitor both costs and time
  - ▶ It is possible to bring projects back on track after delays by shortening critical path activities
- 