Project Monitoring & Performance Reporting

Hit Ratio

Hit Ratio

Used as a measure of achievement against target which have been previously set and a measure of the effectiveness of the contractor's project management

Hit Ratio – Tasks/Activities

Hit Ratio – Critical Activities

Hit Ratio - Deliverables

Hit Ratio

- Hit Ratio Tabulation
  - **Planned Quantity (PQ)**
  - **Actual Quantity (AQ)**
  - **Hit Ratio = AQ – PQ / PQ**

Hit Ratio

- Back-up of Hit Ratio Analysis
  - WBS
  - Tasks, Critical Activities, Deliverables (BQ Bill Items)
  - Duration
  - Early Date
  - Actual Start Date
  - Planned Progress
  - Actual Progress

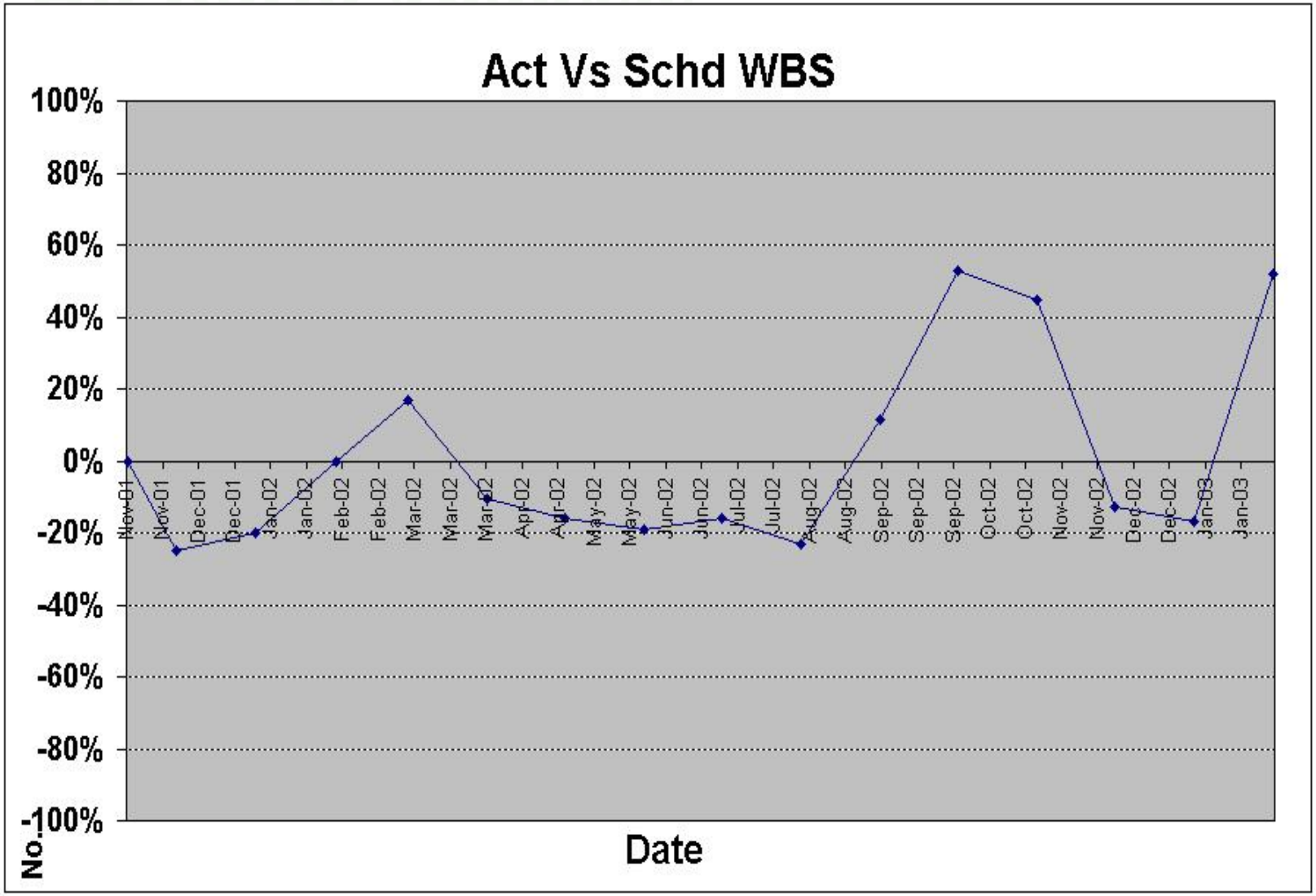
Hit Criteria

Criteria 1	• Actual Start Must Not Exceed Late Start
Criteria 2	• Actual Progress Must Equal or More Than Scheduled Progress

Exercise : Hit Ratio

Task	Critical Task	Late Start	Actual Start	Sch%	Act%	C1	C2	Hit
A	C							
B	NC							
C	C							
D	C							
E	NC							
F	NC							
G …	NC							

Hit Ratio Analysis



Project Monitoring & Performance Reporting

Probability

Probability

- To determine probability for the project to complete on time

Probability of project being completed on time

- **Key Processes**
  - Identifying project critical path(s)
  - Determine task's **O**ptimistic, **M**ost likely, and **P**essimistic durations
  - Perform PERT analysis
    - $\mathbf{T_E}$ is the best estimate of the time required to accomplish a task
    - $\mathbf{T_E} = (\mathbf{O} + \mathbf{4M} + \mathbf{P}) \div \mathbf{6}$
  - Calculating Z value
  - Convert Z value to probability of project being completed on time, using Areas under Distribution Curve
  - Show the probability in Percentage (%)

Exercise : Probability

Critical Activity	4d	6d	5d	7d	7d	9d	Opt (O)	ML (t)	Pes (p)

Z Values & Probability of Completion

Z	Probability	Probability	Z
-2	0.02	0.98	2
-1.5	0.07	0.92	1.5
-1.3	0.1	0.9	1.3
-1.0	0.16	0.84	1
-0.9	0.18	0.82	0.9
-0.8	0.21	0.79	0.8
-0.7	0.24	0.76	0.7
-0.6	0.27	0.73	0.6
-0.5	0.31	0.69	0.5
-0.4	0.34	0.66	0.4
-0.3	0.38	0.62	0.3
-0.2	0.42	0.58	0.2
-0.1	0.46	0.54	0.1
0	0.5	0.5	0

Identify Critical Activities (example ..)

No	Critical Activities
	Bridge Over Sg KKK
1	Preparation Work
2	Temp Crossing/Platform to/at LHS
3	Cofferdam at Pier LHS
4	Working test pile
5	Load test working pile
6	Install steel pipe At LHS
7	Boring and cast pile at LHS
8	Pilecap LHS
9	Column LHS
10	Hammerhead and temp. support LHS
11	Install traveller form LHS
12	Construct bridge deckLHS
13	Dismantle form LHS
14	Install traveller form RHS
15	Construct bridge deck RHS
16	Parapet Main Span
17	Metal railing Main Span
18	ACBC
19	ACWC
20	Pave shoulder
21	Traffic signs

Pert Analysis

No	Critical Activities	Optimistic Duration a	Most Likely Duration m	Pessimistic Duration b	Mean Duration t_j =(a+4m+b)/6	Variance σ_j^2 = ((b-a)/6) ^{2}
	Bridge Over Sg KKK	490	642	852		
1	Preparation Work	20	24	35	25.17	6.25
2	Temp Crossing/Platform to/at LHS	63	75	90	75.50	20.25
3	Cofferdam at Pier LHS	5	7	14	7.83	2.25
4	Working test pile	4	8	12	8.00	1.78
5	Load test working pile	5	8	14	8.50	2.25
6	Install steel pipe At LHS	24	37	48	36.67	16.00
7	Boring and cast pile at LHS	18	23	36	24.33	9.00
8	Pilecap LHS	16	23	28	22.67	4.00
9	Column LHS	24	30	42	31.00	9.00
10	Hammerhead and temp. support LHS	35	45	60	45.83	17.36
11	Install traveller form LHS	14	22	28	21.67	5.44
12	Construct bridge deckLHS	91	104	130	106.17	42.25
13	Dismantle form LHS	6	8	14	8.67	1.78
14	Install traveller form RHS	14	22	28	21.67	5.44
15	Construct bridge deck RHS	91	104	130	106.17	42.25
16	Parapet Main Span	28	45	60	44.67	28.44
17	Metal railing Main Span	14	20	28	20.33	5.44
18	ACBC	4	8	12	8.00	1.78
19	ACWC	3	8	11	7.67	1.78
20	Pave shoulder	5	10	14	9.83	2.25
21	Traffic signs	6	11	18	11.33	4.00
	Total	490	642	852	651.67	229.00

Probability Calculation

T (Duration Sum From The Mean Duration)= Σt_j =	651.67
$\sigma^2 = \Sigma (\sigma_j)^2$ =	229.00
t (Duration Of The Project) = Σ m =	642.00
z = (t - T) / σ = (642 - 651.67) / (SQRT(229)) =	- 0.64

Probability Of The Project Being Completed On Time **25%**

Post Review Questionaires (5 minutes)