



Earned Schedule
Forecasting Reliability
Study

TM



Performance Management

- Due to possibility of unreliable forecasts, project managers may take inappropriate action ...wasting time and money
- Fundamentally, reliable performance information is essential to project management success ...thus, knowing the “quality” of a forecast is important



Reliability Study

- The study objective is to:

Provide evidence as to the reliability of project duration forecasting using Earned Schedule

- The ES forecasting equation examined

$$IEAC(t) = PD / SPI(t)$$

PD = Planned Duration AD = Actual Duration SPI(t) = ES / AT
ES = Earned Schedule AT = Actual Time



Forecast Classification

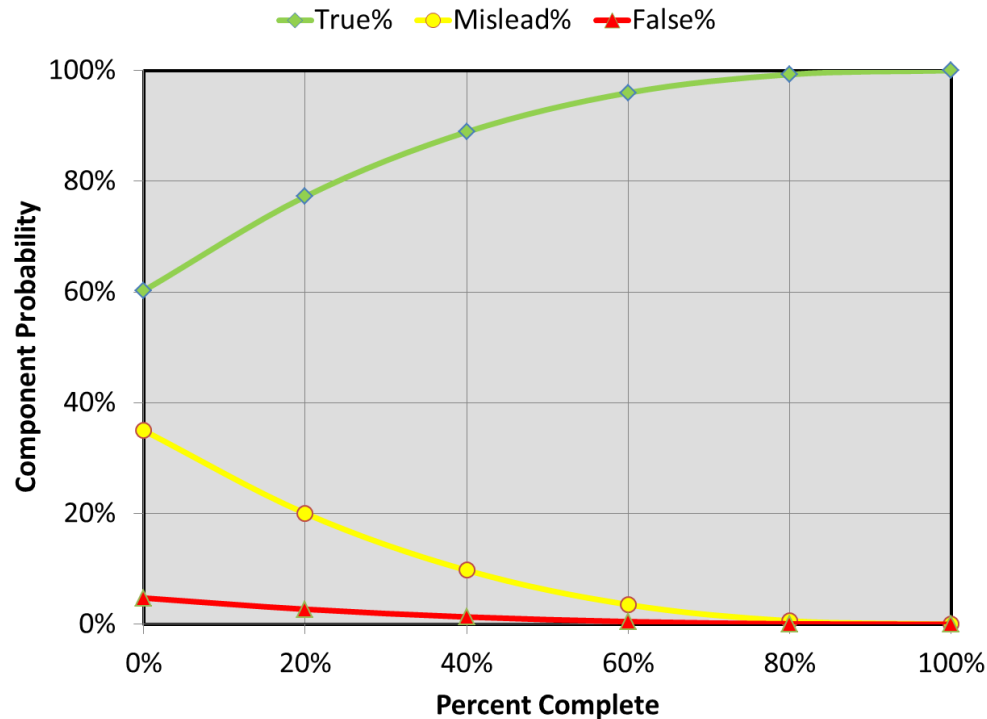
- Forecasts may be good or poor as classified in the figure ...True, Mislead, or False

		Outcome		
		AD < PD	AD = PD	AD > PD
Indicator	SPI(t) > 1	1 True	4 Mislead	7 False
	SPI(t) = 1	2 Mislead	5 True	8 Mislead
	SPI(t) < 1	3 False	6 Mislead	9 True



Reliability Expectation

- ES forecasts always converge to the actual project duration ...thus, the expectation is illustrated in the figure





Assessing Reliability

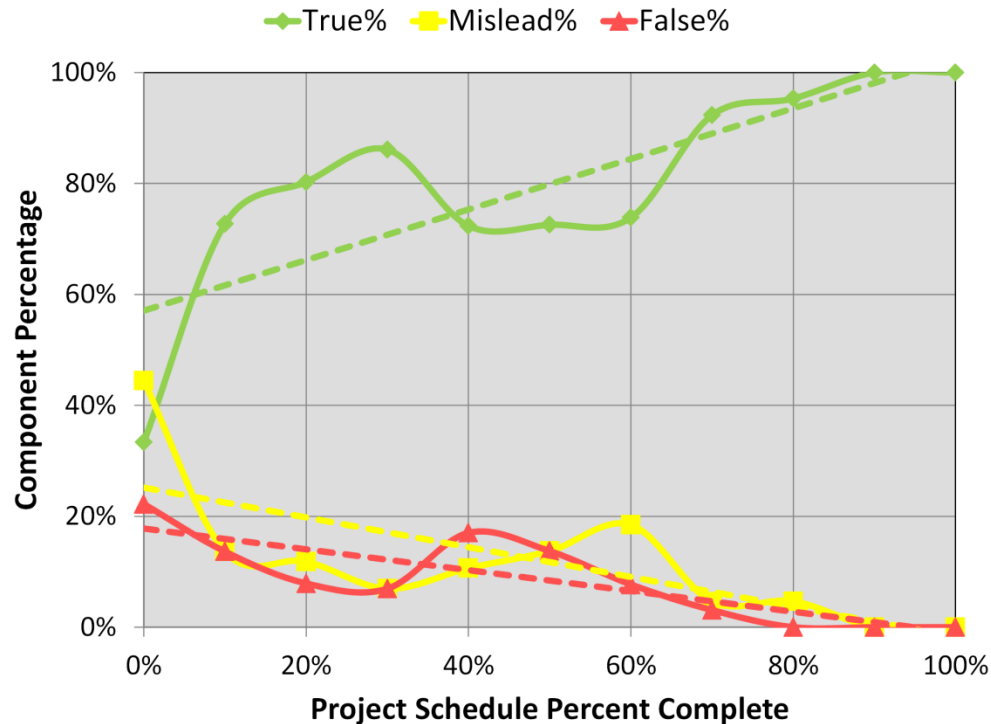
- To evaluate, ES forecasts from 16 projects of real data were classified into *True*, *Mislead*, or *False* and grouped into 10 percent increments of project completion ...
Mislead or *False* determinations within 10 percent of the AD were reclassified to *True*

Pct Gp	@ 00	>5<=15	>15<=25	>25<=35	>35<=45	>45<=55	>55<=65	>65<=75	>75<=85	>85<=95	@100
Graph	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
True%	33.3%	72.7%	80.3%	86.1%	72.3%	72.5%	73.8%	92.3%	95.3%	100.0%	100.0%
Mislead%	44.4%	13.6%	11.8%	6.9%	10.6%	13.7%	18.5%	4.6%	4.7%	0.0%	0.0%
False%	22.2%	13.6%	7.9%	6.9%	17.0%	13.7%	7.7%	3.1%	0.0%	0.0%	0.0%



Reliability Study Result

- Generally, expectation is observed ...@ 5%, True \cong 60% ...@50%, True \cong 80% ...@ 90%, True \cong 100%





Reliability Assessment

- Although the study used a small number of projects, the results are considered to be representative of ES forecasting
- Project Managers using EVM can have confidence in forecasts made using ES



Study Conclusion

- Results from the study indicate ES forecasting reliability may be considered ...

Good to Excellent
for 95 percent of project duration



Further Reading

- See Papers Page – “Testing Earned Schedule Forecasting Reliability,” *PM World Journal*, Vol III Issue VII (July 2014) [Walt Lipke]