

2. The project network early start times will serve as the basis for assigning the baseline values.
3. Except when the 0/100 rule or 50/50 rule is used, baseline values will be assigned linearly, unless stated differently. (Note: In practice estimated costs should be applied "exactly" as they are expected to occur so measures of schedule and cost performance are useful and reliable.)
4. For purposes of demonstrating the examples, from the moment work on an activity begins, some actual costs will be incurred each period until the activity is completed.
5. When the 0/100 rule is used, the total cost for the activity is placed in the baseline on the early finish date.
6. When the 50/50 rule is used, 50 percent of the total cost is placed in the baseline on the early start date and 50 percent on the early finish date.

APPENDIX EXERCISES

1. Given the information provided for development of a product warranty project for periods 1 through 7, compute the SV, CV, SPI, and CPI for each period. Plot the EV and the AC on the PV graph provided. Explain to the owner your assessment of the project at the end of period 7 and the future expected status of the project at completion. Figure A13.1A presents the project network. Figure A13.1B presents the project baseline noting those activities using the 0/100 (rule 3) and 50/50 (rule 2) rules. For example, activity 1 uses rule 3, the 0/100 rule. Although the early start time is period 0, the budget is not placed in the time-phased baseline until period 2 when the activity is planned to be finished (EF). This same procedure has been used to assign costs for activities 2 and 7. Activities 2 and 7 use the 50/50 rule. Thus, 50 percent of the budget for each activity is assigned on its respective early start date (time period 2 for activity 2 and period 11 for activity 7) and 50 percent for their respective finish dates. Remember, when assigning earned value as the project is being implemented, if an activity actually starts early or late, the earned values must shift with the actual times. For example, if activity 7 actually starts in period 12 rather than 11, the 50 percent is not earned until period 12.

FIGURE A13.1A

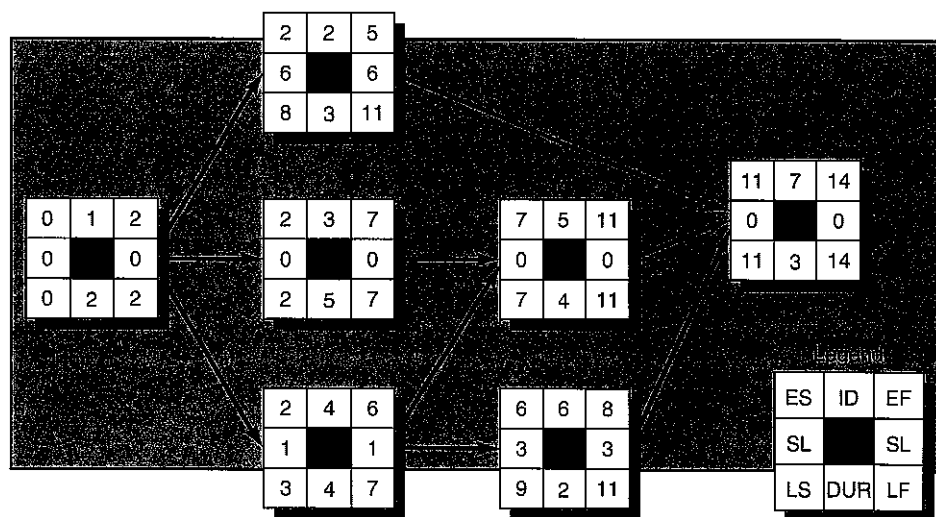


FIGURE A13.1B

Schedule information							Baseline budget needs																
EV Rule	ACT/ WP	DUR	ES	LF	SL	Total PV	Time period																
							0	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
●	1	2	0	2	0	6		6															
●	2	3	2	11	6	20			10		10												
●	3	5	2	7	0	30			9	6	6	6	3										
●	4	4	2	7	1	20			8	2	5	5											
●	5	4	7	11	0	16								4	4	4	4						
●	6	2	6	11	3	18							9	9									
●	7	3	11	14	0	8													4		4		
Total PV by period							0	6	27	8	21	11	12	13	4	4	4	4	0	4			
Cumulative PV by period							0	6	33	41	62	73	85	98	102	106	110	114	114	118			

Rule
1 = %complete
2 = 50/50
3 = 0/100

Status Report: Ending Period 1

Task	%Complete	EV	AC	PV	CV	SV
1	0%	—	3	0	—	—
Cumulative Totals		—	3	0	—	—

Status Report: Ending Period 2

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	6	5	—	—	—
Cumulative Totals		6	5	—	—	—

Status Report: Ending Period 3

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	6	5	—	—	—
2	0%	—	5	—	—	—
3	30%	—	7	—	—	—
4	25%	—	5	—	—	—
Cumulative Totals		—	22	—	—	—

Status Report: Ending Period 4

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	6	5	—	—	—
2	0%	—	7	—	—	—
3	50%	—	10	—	—	—
4	50%	—	8	—	—	—
Cumulative Totals		—	30	—	—	—

Status Report: Ending Period 5

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	6	5	—	—	—
2	50%	—	8	—	—	—
3	60%	—	12	—	—	—
4	70%	—	10	—	—	—
Cumulative Totals		—	35	—	—	—

Status Report: Ending Period 6

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	6	5	—	—	—
2	50%	—	10	—	—	—
3	80%	—	16	—	—	—
4	Finished	—	15	—	—	—
Cumulative Totals		—	46	—	—	—

Status Report: Ending Period 7

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	6	5	—	—	—
2	Finished	—	14	—	—	—
3	Finished	—	20	—	—	—
4	Finished	—	15	—	—	—
5	0%	—	0	—	—	—
6	50%	—	9	—	—	—
Cumulative Totals		—	63	—	—	—

Period	SPI	CPI	PCIB
1	—	—	—
2	—	—	—
3	—	—	—
4	—	—	—
5	—	—	—
6	—	—	—
7	—	—	—

$SPI = EV/PV$
 $CPI = EV/AC$
 $PCIB = EV/BAC$

FIGURE A13.1C

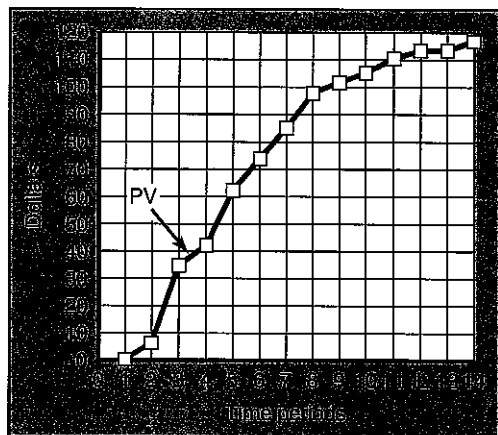
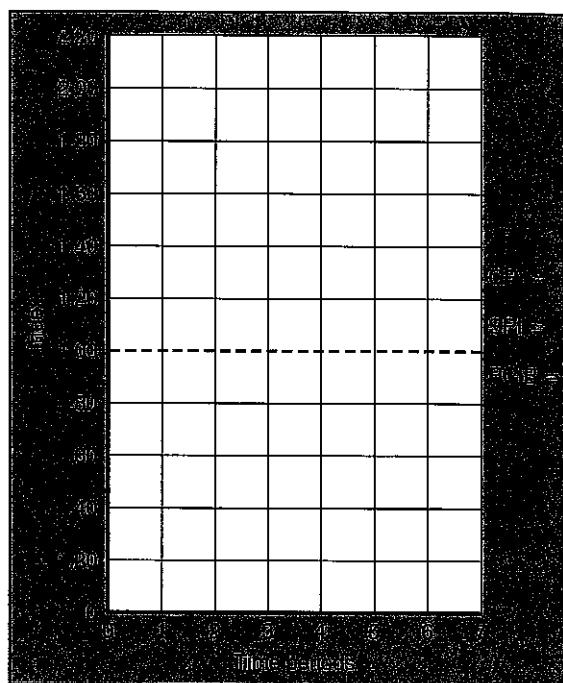


FIGURE A13.1D



2. Given the information provided for development of a catalog product return process for periods 1 through 5, assign the PV values (using the rules) to develop a baseline for the project. Compute the SV, CV, SPI, and CPI for each period. Explain to the owner your assessment of the project at the end of period 5 and the future expected status of the project at the completion.

FIGURE A13.2A

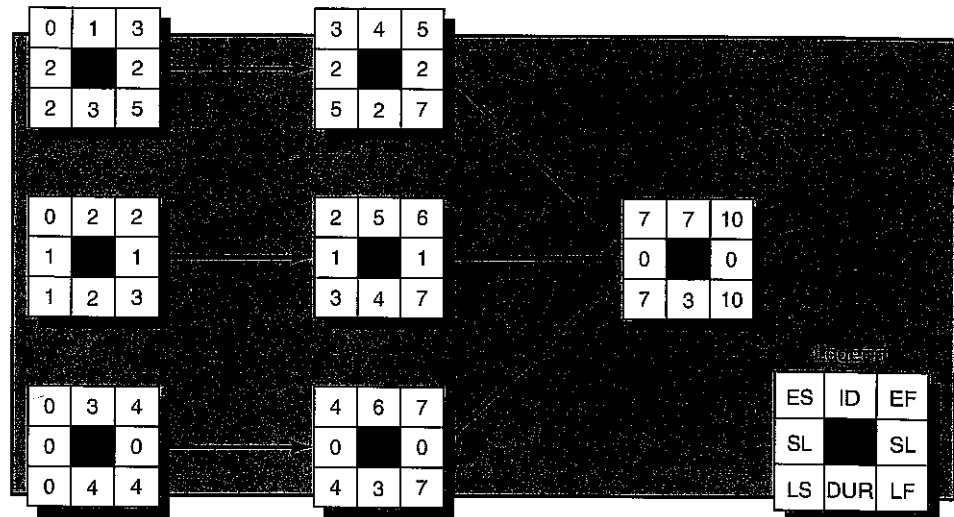


FIGURE A13.2B

Schedule information							Baseline budget needs												
EV Rule	ACT/ WP	DUR	ES	LF	SL	Total PV	Time period												
							0	1	2	3	4	5	6	7	8	9	10		
1	1	3	0	5	2	30													
2	2	2	0	3	1	20													
3	3	4	0	4	0	30													
4	4	2	3	7	2	10													
5	5	4	2	7	1	40													
6	6	3	4	7	0	30													
7	7	3	7	10	0	60													
Total PV by period																			
Cumulative PV by period																			

Status Report: Ending Period 1

Task	%Complete	EV	AC	PV	CV	SV
1	40%	—	8	—	—	—
2	0%	—	12	—	—	—
3	30%	—	10	—	—	—
Cumulative Totals		—	30	—	—	—

Status Report: Ending Period 2

Task	%Complete	EV	AC	PV	CV	SV
1	80%	—	20	—	—	—
2	Finished	—	18	—	—	—
3	50%	—	12	—	—	—
Cumulative Totals		—	50	—	—	—

Status Report: Ending Period 3

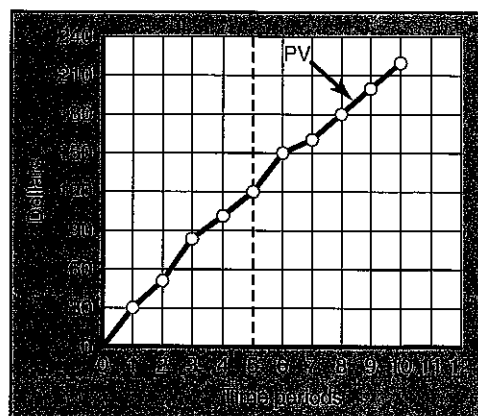
Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	27	—	—	—
2	Finished	—	18	—	—	—
3	70%	—	15	—	—	—
4	0%	—	5	—	—	—
5	30%	—	8	—	—	—
Cumulative Totals		—	73	—	—	—

Status Report: Ending Period 4

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	27	—	—	—
2	Finished	—	18	—	—	—
3	Finished	—	22	—	—	—
4	0%	—	7	—	—	—
5	60%	—	22	—	—	—
Cumulative Totals		—	96	—	—	—

Status Report: Ending Period 5

Task	%Complete	EV	AC	PV	CV	SV
1	Finished	—	27	—	—	—
2	Finished	—	18	—	—	—
3	Finished	—	22	—	—	—
4	Finished	—	8	—	—	—
5	70%	—	24	—	—	—
6	30%	—	10	—	—	—
Cumulative Totals		—	109	—	—	—

FIGURE A13.2C

Period	SPI	CPI	PCIB
1	—	—	—
2	—	—	—
3	—	—	—
4	—	—	—
5	—	—	—

SPI = EV/PV
CPI = EV/AC
PCIB = EV/BAC

Appendix 13.2

Obtaining Project Performance Information from MS Project

The objective of this appendix is to illustrate how one can obtain the performance information discussed in Chapter 13 from MS Project 2007. One of the great strengths of MS Project is its flexibility. The software provides numerous options for entering, calculating, and presenting project information. Flexibility is also the software's greatest weakness in that there are so many options that working with the software can be frustrating and confusing. The intent here is to keep it simple and present basic steps for obtaining performance information. Students with more ambitious agendas are advised to work with the software tutorial or consult one of many instructional books on the market.

For purposes of this exercise we will use the Digital Camera project, which was introduced in Chapter 13. In this scenario the project started as planned on March 1 and today's date is March 7. We have received the following information on the work completed to date:

Design Spec.s took 2 days to complete at a total cost of \$20.

Shell & Power took 3 days to complete at a total cost of \$25.

Memory/Software is in progress with 4 days completed and two days remaining. Cost to date is \$100.

Zoom System took 2 days to complete at a cost of \$25.

All tasks started on time.

STEP 1 ENTERING PROGRESS INFORMATION

We enter this progress information in the TRACKING TABLE from the GANTT CHART VIEW ► TABLE ► TRACKING:

TABLE A13.2A Tracking Table

Task Name	Start Date	Finish Date	% Comp.	Actual	Planned	Cost	Res.
Project Started Planning	3/1/07	3/2/07	100%	2 days	2 days	\$0.00	0 days
Design Spec.s	3/1/07	3/2/07	100%	2 days	2 days	\$20.00	0 days
Shell & Power	3/1/07	3/4/07	100%	3 days	3 days	\$25.00	0 days
Memory/Software	3/1/07	3/7/07	67%	4 days	6 days	\$100.00	2 days
Zoom System	3/1/07	3/3/07	100%	2 days	2 days	\$25.00	0 days
Assembly	3/3/07	3/5/07	0%	0 days	2 days	\$0.00	2 days
Test	3/5/07	3/7/07	0%	0 days	2 days	\$0.00	2 days