

Measurement Information Specification

Earned Value
Project Level Only
Organization 10
Version 1.0

Information Need Description	
Information Need	Is project spending meeting budget and schedule objectives?
Information Category	Resources and Cost

Measurable Concept	
Measurable Concept	Financial Performance

Entities and Attributes	
Relevant Entities	Cost and Schedule
Attributes	Dollars

Base Measure Specification	
Base Measures	<ol style="list-style-type: none">1. Cumulative budgeted cost for work performed (BCWP) this month2. Cumulative budgeted cost for work scheduled (BCWS) this month3. Cumulative actual cost for work performed (ACWP) this month
Measurement Methods	<ol style="list-style-type: none">1,2. Based on engineering judgment and documented in Basis of Estimate (BOE).3. Total of all expenditures including development, all services (e.g. CM, QA), and management.
Type of Method	<ol style="list-style-type: none">1. Subjective2. Subjective3. Objective
Scale	Positive real numbers
Type of Scale	Ratio
Unit of Measurement	Dollars

Derived Measure Specification	
Derived Measure	<ol style="list-style-type: none">1. Cost Performance Index (CPI)2. Schedule Performance Index (SPI)3. Cost Variance (CV)4. Schedule Variance (SV)
Measurement Function	<ol style="list-style-type: none">1. $CPI = BCWP / ACWP$2. $SPI = BCWP / BCWS$3. $CV = BCWP - ACWP$4. $SV = BCWP - BCWS$

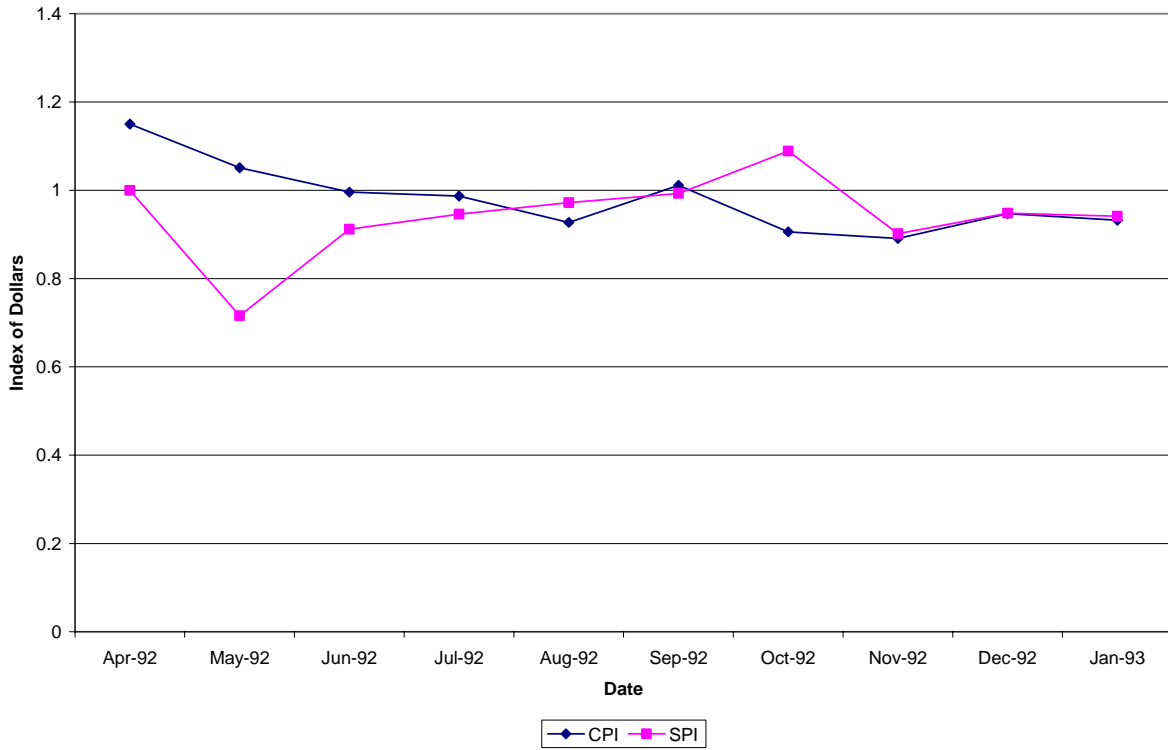
Indicator Specification	
Indicator Description and Sample	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>1. The CPI and SPI Trends</p> </div> <div style="width: 45%;"> <p>2. CV and SV Trends</p> </div> </div> <p style="text-align: center;">See end of file for full-size versions.</p>
Analysis Model	<ol style="list-style-type: none"> CPI and SPI are plotted over time to show trends. Indices greater than 1.0 indicate under cost (CPI) and ahead of schedule (SPI) while indices below 1.0 indicate over cost (CPI) and behind schedule (SPI). CV and SV are plotted over time to show trends and predicted completion costs. Positive variances reflect either under cost or ahead of schedule while negative variances reflect over cost or behind schedule.
Decision Criteria	<ol style="list-style-type: none"> Values less than .85 or more than 1.15, adverse trends Greater than 15% variance, adverse trends
Indicator Interpretation	<ol style="list-style-type: none"> The performing organization started out significantly under cost (CPI > 1.0), while at the same time there was less effort being accomplished than planned (SPI < 1.0). Since these initial perturbations, which were not unexpected, there has been a relatively steady decline in cost performance; schedule performance initially improved, but has now started to decline again. Program details should be reviewed at a lower WBS level to determine those areas that are causing this situation, and potential corrective actions must be reviewed and acted upon. This chart is a dollarized presentation of the same information that is contained in the CPI/SPI chart. For example, in April the performing organization is \$296K over cost for the work that has been accomplished, and there is about \$1.4K of work that had been planned that has not been accomplished. In most cases, schedule variances will later become additional cost variances as dollars are spent to recover schedule.

Data Collection Procedure (For Each Base Measure)	
Frequency of Data Collection	<ol style="list-style-type: none"> Per update to EVMS Plan Per update to EVMS Plan Monthly
Responsible Individual	Project Lead
Phase or Activity in which Collected	All
Tools Used in Data Collection	<ol style="list-style-type: none"> Approved EVMS Plan EVMS Program
Verification and Validation	Check large variances for validity.
Repository for Collected Data	<ul style="list-style-type: none"> • EVMS Program • PAL • PSM Insight

Data Analysis Procedure (For Each Indicator)	
Frequency of Data Reporting	Monthly
Responsible Individual	Project Measurement Analyst and Financial Analyst
Phase or Activity in which Analyzed	All
Source of Data for Analysis	Cost Performance Report (CPR) or Cost/Schedule Status Report (C/SSR)
Tools Used in Analysis	PSM Insight
Review, Report, or User	BAMs Senior Management Project Lead

Additional Information	
Additional Analysis Guidance	<ul style="list-style-type: none"> • During feasibility analysis, make sure that the BCWS and BCWP lines agree with other plans. A fast rise may reflect large equipment purchases or a sudden increase in staffing. • During the project, additional analysis using other measures may be needed to identify the underlying cause of schedule and cost problems.
Implementation Considerations	Large cost or schedule variances should be investigated as soon as possible to identify and correct the problem. If the financial performance baseline is replanned, keep the previous data to justify the change.

CPI and SPI Index of Dollars Over Time



**CV and SV Trends
SAMPLE DATA**

