

**Measurement Information Specification  
Critical Path Performance  
Version 3.0**

<b>Information Need Description</b>	
<b>Information Need</b>	
<b>Questions Addressed</b>	<p>Has the critical path been altered? What actions should be taken due to changes in the critical path?</p> <p>What critical path activities are being impacted?</p> <p>Which critical activities are most prone to schedule slips?</p> <p>Has there been a change in the amount of slack time?</p>
<b>Information Category</b>	Schedule and Progress
<b>Description</b>	<p>Critical Path Performance measures the variance between projected and actual schedule performance for project components with direct and immediate impact on schedule baseline and completion goals. The measure provides information on components having the greatest impact on schedules and end-state schedule performance. The measure also assesses the earliest possible completion dates for all activities, based on the longest dependent path in the schedule. Dependent schedule paths are defined as activity strings.</p>

<b>Measurable Concept</b>	
<b>Measurable Concept</b>	Milestone Performance

<b>Entities and Attributes</b>	
<b>Relevant Entities</b>	
<b>Attributes</b>	

<b>Base Measure Specification</b>	
<b>Base Measures</b>	<ul style="list-style-type: none"> <li>• Start and end dates of activity or event</li> <li>• Dependent activities</li> <li>• Length of time to complete each activity or event</li> <li>• Days of slack time for each activity or event</li> </ul>
<b>Measurement Methods</b>	
<b>Type of Method</b>	
<b>Scale</b>	
<b>Type of Scale</b>	
<b>Unit of Measurement</b>	

<b>Categorization</b>	<ul style="list-style-type: none"> <li>• Activity or event name</li> <li>• Version of the plan</li> <li>• Increment</li> <li>• Organization</li> <li>• Degree of schedule dependency between activities (complete, partial, unknown)</li> <li>• Cause of dependency (information needed, resource limitation, management directive)</li> </ul>
<b>Typical Aggregation Structure</b>	<ul style="list-style-type: none"> <li>• Component</li> <li>• Activity</li> </ul>
<b>Typically Collected for Each</b>	<ul style="list-style-type: none"> <li>• CI or equivalent</li> <li>• Activity</li> </ul>
<b>Count Actuals Based on</b>	<ul style="list-style-type: none"> <li>• Customer sign-off</li> <li>• Action items closed</li> <li>• Documents baselined</li> <li>• Milestone review held</li> <li>• Successful completion of tasks</li> </ul>

<b>Derived Measure Specification</b>	
<b>Derived Measure</b>	
<b>Measurement Function</b>	

<b>Indicator Specification</b>	
<b>Indicator Description and Sample</b>	
<b>Analysis Model</b>	
<b>Decision Criteria</b>	
<b>Indicator Interpretation</b>	

<b>Data Collection Procedure (for each Base Measure)</b>	
<i>Complete this section for each base measure listed on the previous page.</i>	
<b>Frequency of Data Collection</b>	
<b>Responsible Individual</b>	

<b>Phase or Activity in which Collected</b>	
<b>Tools Used in Data Collection</b>	
<b>Verification and Validation</b>	
<b>Repository for Collected Data</b>	

<b>Data Analysis Procedure (for each Indicator)</b>	
<b>Frequency of Data Reporting</b>	
<b>Responsible Individual</b>	
<b>Phase or Activity in which Analyzed</b>	
<b>Source of Data for Analysis</b>	
<b>Tools Used in Analysis</b>	
<b>Review, Report, or User</b>	

<b>Additional Information</b>	
<b>Additional Analysis Guidance</b>	
<b>Implementation Considerations</b>	
<b>Project Application</b>	<ul style="list-style-type: none"> <li>• Applicable to all sizes and types of projects.</li> <li>• Often used for projects with schedule constraints and key activities.</li> </ul>

<p><b>Process integration</b></p>	<ul style="list-style-type: none"> <li>• Requires identification of all schedule dependencies between activities. Requires definition of the underlying assumptions and the causes of dependency between activities.</li> <li>• A good estimate of schedule risk is required to evaluate stability of schedule.</li> <li>• Schedule dependencies determine the critical path of activities.</li> <li>• The number of integrated activities, and schedule dependencies often determine the level of program risk.</li> <li>• Environmental consideration (such as delays in senior level approvals, reorganizations, and funding variances) can impact program efficiencies and the ability to meet schedule targets.</li> <li>• The “waterfall” software development model typically contains many critical path dependencies. Other software development models (spiral, prototyping, incrementl/release) reduce schedule dependencies between activities.</li> </ul>
<p><b>Usually Applied During</b></p>	<ul style="list-style-type: none"> <li>• Project Planning (Estimates)</li> <li>• Requirements Analysis (Estimates and Actuals)</li> <li>• Design (Estimates and Actuals)</li> <li>• Implementation (Estimates and Actuals)</li> <li>• Integration and Test (Estimates and Actuals)</li> <li>• Operations and Maintenance (Estimates and Actuals)</li> </ul>