

## SPC Software Guide

The Quality Sourcebook's SPC Software Guide features information on companies that provide software for a wide range of applications, including statistical process control, problem solving, statistical analysis, design of experiments, gage R&R and related operations. For more information on any of the products or services listed in this section, contact the companies directly. Please be sure to mention you saw their listings in *Quality Digest's* 2002 Quality Sourcebook!

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### Software Guide

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*This matrix of SPC software manufacturers contains an alphabetical listing of about 100 software companies and distributors and about 100 software products. Product attributes are listed across from the products under broad categories for statistical process control, with each of these categories subdivided into specific product functions. The gage R&R heading includes gage management and control products. An "x" under this heading signifies that the product performs one or more of those functions.*

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*This directory of SPC software manufacturers includes the company name, address, phone and fax numbers, Web address, and a brief description of the software company's products or services. (Please note that not all companies provided us with descriptions.)*

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We appreciate any feedback you have on our SPC Software Guide. If you have any suggestions for how we can improve this guide for next year, e-mail them to [sourcebook@qualitydigest.com](mailto:sourcebook@qualitydigest.com).

## Glossary

ANOVA—analysis of variance. For regression analysis, a table examining the hypothesis that the variation explained by the entire regression is zero.

Capability analysis—studies the ability of a process to meet established requirements. Cp relates the spread of the process to the specification width without regard to the process center. Cpk takes into account the location of the process average. For a statistically in control process that is normally distributed, Cpk can be used to estimate the expected percent of defective material.

Cause-and-effect diagram—also known as a fishbone diagram. Used to explore the possible root causes of a problem.

Closed-loop control—Some software has the capability to control a process based on the SPC analysis. In order for this to work effectively, the system must be able read real-time data from gages, scales, CMMs and other measurement tools and provide control via programmable logic controllers and the like.

DOE—design of experiments, a methodology for designing experiments to test the effect of multiple process parameters on a given process's outcome. The methodology allows for multiple factors to be tested during one experimental run. There are several techniques, including Taguchi, fractional factorial and Plackett-Burman.

Non-normal distributions—the capability of a software to handle non-normal distributions in order to calculate such measures as Cpk.

Operational characteristics (OC) curve—for a given sampling plan, a graph that displays the probability of accepting the lot as a function of the quality of the lot or process

Pareto chart—a combination histogram/cumulative line chart that helps identify causes that have the greatest impact on a problem

Regression analysis—models the relationship between one or more independent variables and a dependent variable

Scatter diagram—an X-Y chart that measures the relationship between two sets of variables. If there is correlation between the variables, the points will be grouped around a line; otherwise, the points will be randomly distributed.