$$\alpha = \Phi\left[\frac{L}{(1+p)/2}\right]$$

SPCView

A Statistical Process Control Module for UncertaintyAnalyzer

A MULTIFACETED TOOL

SPCView is a flexible Windows application that features SPC for controlling measurement processes, tracking attribute values over time, setting calibration intervals for measuring and test equipment parameters, and analyzing trends in general output processes.

MEASUREMENT PROCESS CONTROL

SPCView is the most cost-effective tool available for applying SPC to the control and monitoring of measurement processes. In monitoring a measurement process, users first measure the value of a check standard. Next, the process's measurement uncertainty is estimated using UncertaintyAnalyzer. The results of this analysis are then imported into SPCView. Once in SPCView, **measurements and measurement uncertainty estimates are maintained over time and used to detect and evaluate trends and identify out of control events**.

ATTRIBUTE VALUE TRACKING

Equipment parameters, such as attributes of reference standards, are known to drift with time. Projecting this drift is easily accomplished with SPCView. Each time a standard is calibrated with a higher-level device, the uncertainty in the results of calibration can be estimated in UncertaintyAnalyzer and imported into SPCView. **Since calibration uncertainty is included in the import, SPCView can produce weighted fits** that provide more accurate forecasts than are obtained by other tools.

PARAMETER CALIBRATION INTERVAL ANALYSIS

Calibration intervals are usually determined from in-tolerance or out-of-tolerance events observed at calibration. Normally, these observations are at the instrument level, where an item is pronounced out-of-tolerance if any one of its parameters is observed to be out-of-tolerance. This may be sufficient for general purpose items, but for critical items, we need to determine intervals for individual parameters. Also, we need to base our intervals on changes in parameter values over time, rather than on recorded in-or out-of-tolerances. With SPCView, such analyses are simple and straightforward. Users enter calibration results in UncertaintyAnalyzer and import them into SPCView. **SPCView determines drift rates and projects intervals commensurate with desired in-tolerance confidence levels or maximum allowable uncertainties**.

PRODUCTION PROCESS CONTROL

As production systems develop a history of performance, it sometimes becomes possible to use the accumulated data to evaluate the process. With SPCView, this is done by entering measurements of process output in UncertaintyAnalyzer, computing uncertainties, and importing the results into SPCView. Once in SPCView, options may be selected that compute the process mean value and standard deviation. **SPCView then constructs control limits and provides process control visibility**.
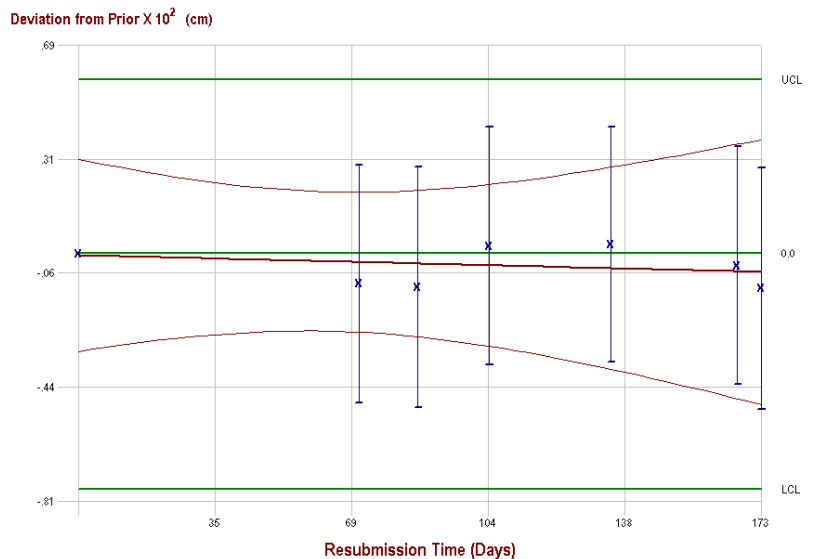
With UncertaintyAnalyzer...

- Identify and estimate measurement process uncertainties
- Estimate measurand and measuring parameter biases

With SPCView...

- Define process control limits
- Import measurement process uncertainties
- Create and maintain control charts
- Detect out of control events
- Test control points and diagnose problems
- Project bias drift and uncertainty growth
- Compute calibration intervals for equipment parameters

With just the click of a button you can...

- Enter UncertaintyAnalyzer results in a process control timeline
- View the process in a control chart
- View process metrics: Cp, Cpk, etc.
- Model and project drift by linear regression
- Evaluate outliers
- Compute parameter intervals
- Copy text and graphics for custom use
- Save analysis results for future updates
- Generate hardcopy charts and reports

Deviation from Prior X 10^2 (cm)

Resubmission Time (Days)

A Multifaceted SPC Analysis Tool

- Import UncertaintyAnalyzer results into a process control timeline.
- Develop statistical process control limits.
- View process histories in control charts.
- Model and project drift by linear regression.
- Evaluate outliers.
- Evaluate quality control using process metrics.
- Detect out of control events.
- Test control points and diagnose problems.
- Project bias drift and uncertainty growth.
- Compute calibration intervals for equipment parameters.
- Issue reports complete with control charts and trend analysis.
- Copy charts and data to spreadsheet, word processing and other applications.

Process Control Histories

- Choose from four process control options:
  - Measurement Process Control.
  - Parameter Value Tracking.
  - Parameter Interval Analysis.
  - Sampled Process Control.
- Enter, paste or import data into the process control history table for analysis.
- Save the contents of the history table, as well as other key information, in an
- SPCView analysis file (*.spc).

Process Control Limits

- Develop two-sided asymmetric, two-sided symmetric, single-sided upper, or single-sided lower control limits or control bands.
- Enter control limits or bands directly or compute them using a fixed uncertainty or using process statistics.

Control Charts

- Display a plot of each control point in the process history along with upper and lower control limits.
- Show optional one-sigma upper and lower error bars.

Process Metrics

- Process mean value or deviation
- Pure error and process variation uncertainties
- Total process standard deviation
- Process capability Cp
- Capability indices Cpu and Cpl
- Process capability index Cpk

Interval Analysis

- Compute a recommended test or calibration interval commensurate with either a desired confidence level or maximum allowable measurement uncertainty.
- Show the drift rate for the process, projected intercept of the curve fit, and the intercepts of the upper and lower projection limits with the control limits or bands.
- Set the Initial Value and Initial Uncertainty to zero or some other value appropriate for the parameter's interval.

Outlier Identification

- Compute the confidence for rejecting a process as being out-of -control at a selected point.
- Compute false reject risk (beta risk) for each data point.
- Exclude suspect control points to assess impact on the linear regression fit shown on the process control chart. Excluded points become inactive in the process control history, but are not deleted, and are displayed in gray on the process control chart.
- Use the drill-down Resubmission Time Analysis Worksheet to exclude suspect as-found and/or as-left data from Interval Analysis results.
- Sort the Resubmission Time table by Service Date, Resubmission Time, or Deviation from Prior Value.

Analysis Reports

- Generate hardcopy reports of the SPCView analysis results and of the control chart.
- Generate process evaluation reports showing in- or out-of-tolerance status of control points, along with rejection confidences and computed beta risks.
- Report interval analysis results, complete with a trend analysis plot.
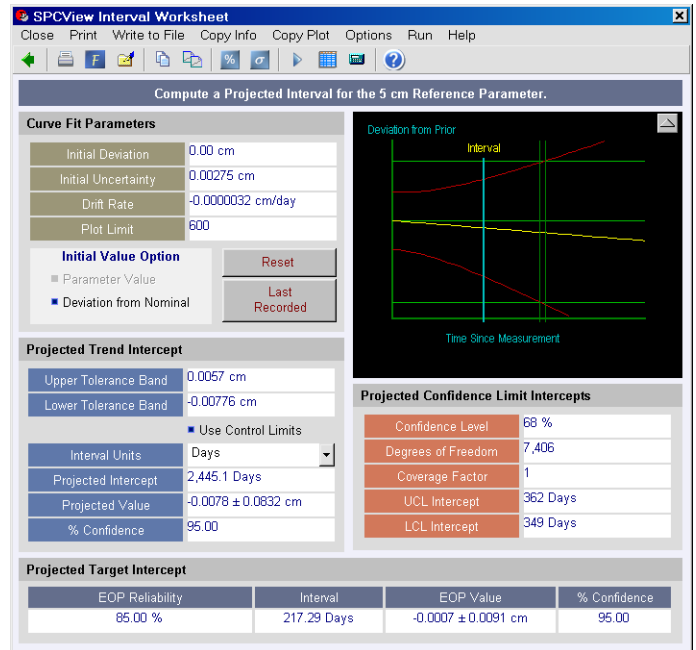

PUT SPCView IN YOUR TOOLBOX

With UncertaintyAnalyzer, you have the industry's leading measurement uncertainty analysis tool. With SPCView, you have a seamless way to bring analysis results into the statistical process control environment. SPCView runs on **Windows 95, 98, NT. ME, 2000 and XP**.

EASY TERMS

We accept Visa, MasterCard, American Express and Discover Card. We also accept purchase orders from established firms or government organizations. SPCView comes with a **thirty-day money back guarantee**.

SPCView Pricing

SPCView 1.7	$350.00 + TX and S & H (USD)
Upgrade from Version 1.6	$195.00 + TX and S & H (USD)
Network License	See Our Web Site for Network Options
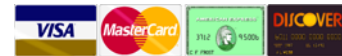
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