

UncertaintyAnalyzer 3.0

The Swiss Army Knife of Measurement Uncertainty Analysis

If you're in **research, design, development, manufacturing, calibration or testing**, then you need **UncertaintyAnalyzer** from **Integrated Sciences Group**. Why? Because all these activities rely on measurements, and all measurements involve error, uncertainty and risk. To control errors and risks, you need to estimate uncertainty, and estimating uncertainty is what **UncertaintyAnalyzer** is all about.

With **UncertaintyAnalyzer**, you identify error sources, estimate and combine uncertainties, estimate biases, compute tolerance specifications and more **without training in statistics or probability**.

ISO and NCSLI / ANSI COMPLIANT

UncertaintyAnalyzer makes compliance with **ISO/IEC 17025** and **ANSI/NCSL Z540.3** a breeze. This is because it implements the methods and techniques of the **ISO/TAG4/WG3 Guide to the Expression of Uncertainty in Measurement (the "GUM")** and **NCSLI RP-12** in a comprehensive user-friendly desktop tool.

Using the **GUM** or **RP-12** can require a strong statistical background, but using **UncertaintyAnalyzer** doesn't. **UncertaintyAnalyzer produces results that normally require a high-priced consultant or in-house guru.**

Whether you're a scientist, design engineer, production engineer, test engineer, metrologist, or anyone else concerned with measurement accuracy, you need to know only information that falls within your technical specialty. **UncertaintyAnalyzer** furnishes the statistical expertise, while you furnish the technical knowledge.

This does not mean that "tough" problems are glossed over. You can rest assured that your analysis will cover all sources of measurement error and your results will be based on techniques and methods that represent the leading edge in uncertainty analysis.

UncertaintyAnalyzer makes this possible through easy to follow on-screen procedures and user-interactive worksheets that cover a wide spectrum of error sources. **The worksheets carry you through each analysis in a structured way that ensures covering all the bases.** Even complex analyses that involve repeatability error, digital sampling error, computation error, uncertainty propagation, multiparameter measurements, environmental factors, or operator bias are made easy.

INTERESTED IN ISO ACCREDITATION?

Building on prior analyses is an excellent way to **develop complete statements of your measurement capability**. This involves doing analyses for categories of measurements performed by your organization and printing or otherwise displaying the results as capability statements. As you work through the process, you'll discover how easy it is to convert one statement into another. Since each analysis is grounded in ISO methodology, backing up an accreditation scope becomes almost a trivial exercise.

SHORTCUT DATA ENTRY WITH THE INSTRUMENTATION DATABASE

When you enter specs and other information about equipment parameters in an analysis, you need to save the data for future use. With

A Step-by-Step Analysis Pathway

UncertaintyAnalyzer's worksheets turn a complicated analysis into a set of smaller, simpler analyses that can be easily handled. For each step, the user supplies only technical information about the measurement and enters the measurement results. First-time users find that comprehensive analyses take only minutes, not the days or weeks needed with spreadsheets or other tools.

DEFINE WHAT'S BEING MEASURED

Click the **Subject Parameter Bias** button. Select the measurement area and units and enter whatever information you have about the parameter being measured. If the parameter being measured displays discrete values or markings, click the **Subject Parameter Resolution** button. Enter resolution information as appropriate. If the parameter being measured provides values taken from digital samples, click the **Digital Sampling** button and enter information about the parameter's sampling characteristics.

DEFINE WHAT'S MAKING THE MEASUREMENT

Click the **Measuring Parameter Bias** button. If the parameter is a toleranced attribute, enter tolerance limits and an estimate of the in-tolerance probability at the time of measurement. If the parameter is a reference standard, put a check in the **Reference Standard** box and enter information from a calibration report or other document. Next, click the **Meas. Parameter Resolution** button. Enter resolution information as appropriate. If the measuring parameter samples data for digital processing, click the **Digital Sampling** button and enter the relevant information. If computation error is involved, click the **Computation** button and use the built-in **Computation Error Uncertainty Worksheet**.

DESCRIBE WHO'S MAKING THE MEASUREMENT

Concerned about parallax or other sources of operator error? Just click the **Operator Bias** button, select options, and enter information.

ENTER THE MEASUREMENT RESULTS

Click the **Subject Parameter Random** or **Meas. Parameter Random** button (whichever applies) and enter your measurement results in a table. If you have already recorded these results in another application, just open the other application from within **UncertaintyAnalyzer** and import the data.

DESCRIBE THE MEASURING ENVIRONMENT

Click the **Environmental Factors** button and use the **Measurement Environment Uncertainty Worksheet**. If your analysis calls for extra detail, click any of the environmental error source buttons to call up the **Tolerance Worksheet for Environment Parameters**. If, after measurement, the parameter will be subjected to stresses that add to the uncertainty of its measured value, click the **Stress Response** button to activate the **Stress Response Uncertainty Worksheet**.

PRINT THE REPORT

Decide which error sources you want to include in your report and select **Print** from the **File Menu**. Add any report header information you desire and select options for printing detailed sub reports. Click **Print** on the **Report Options** menu and you have a fully formatted, paginated uncertainty analysis report. Click **Preview** and you get a fully formatted report for viewing. If you like, you can export reports to **RTF** or **HTML** files.

UncertaintyAnalyzer, you can capture your work in a built-in instrumentation database. From there, it's a snap to quickly bring the data back into UncertaintyAnalyzer for re-analysis or for use in future analyses. With the instrumentation database, you can easily add, update and delete new items. And, since the instrumentation database is rich in all the fields you need to define items and parameters, you'll discover you can even use it as an equipment management tool.

PUT UncertaintyAnalyzer IN YOUR PROFESSIONAL TOOLBOX TODAY

UncertaintyAnalyzer is a multi-featured, powerful engineering workstation package that you would expect to pay several thousand dollars for. But UncertaintyAnalyzer sells for *far* less. In addition, UncertaintyAnalyzer interfaces with **SPCView**, to provide an historical picture of process uncertainties over time, and also with **AccuracyRatio** to evaluate the impact of uncertainties on measurement decision risk.

Purchases may be paid for by check, Visa, MasterCard, American Express or Discover Card. Purchase orders are accepted from established firms or government organizations. UncertaintyAnalyzer comes with a **thirty-day money back guarantee**, so there's no risk to you.

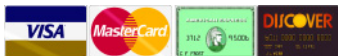
| UncertaintyAnalyzer Pricing | |
|---|--------------------------------------|
| UncertaintyAnalyzer 3.0 | \$995.00 + TX and S & H (USD) |
| Upgrade from Version 2.0 | \$395.00 + TX and S & H (USD) |
| Network License | See Our Web Site for Network Options |
| UncertaintyAnalyzer + AccuracyRatio Combo | \$1690.00 + TX and S & H (USD) |

For More Information

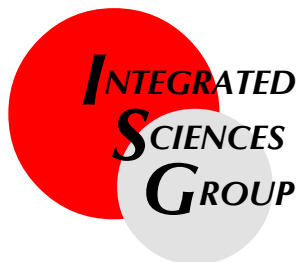
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The Leading Edge in Measurement Technology Analysis and Management

Comprehensive Analysis Guide

Built-in Analysis Worksheets

- Random uncertainty
- Parameter bias uncertainty
- Resolution uncertainty (digital and analog)
- Digital sampling uncertainty
- Operator bias uncertainty
- Computation error uncertainty
- Stress response uncertainty
- Uncertainty due to environment for up to ten error sources
- Multivariate analysis for up to 1000 user-defined error sources
- Uncertainty propagation through measurement systems
- Uncertainty growth from the time of measurement

Interactive Analysis Procedures

- Built-in step-by-step procedure guides
- Identified process error sources
- Quick access features list

On-Screen User Help

- Quick topic info buttons
- Topic help with analysis examples
- Interactive step-by-step procedures
- Pop-up procedures and topical information
- Example analysis files

Bias Uncertainty Estimation

- Measurement standards and toleranced parameters
- Two-sided and single-sided parameter tolerances
- Symmetric and Asymmetric parameter specifications

Built-In SpecMaster

Database interfaces

- Instrument and parameter specifications
- Measurement areas and units
- Importing from external databases or spreadsheets

Comprehensive Reports

- Print and Print Preview with RTF and HTML export
- Summary and detailed analysis reports

ISG Technology Management integration

- Interface to **SPCView** for Measurement Process Control
- Interface to **AccuracyRatio** for Analysis of Measurement Decision Risk

External Application Launcher

- Open external applications for off-line processing

VB Script Editor

- Enter System Equations for Multivariate Analysis
- Enter Transfer Functions for System Modules

Formatted Notes for all Analysis Levels

User-Formatted Analysis Description

Parameter Bias and Process Error Distribution Plots

- Normal, Uniform (Rectangular), Lognormal, Exponential, Student's t, Triangular, U-Shaped, Cosine, Quadratic

Type B Degrees of Freedom Calculator

Automatic Computation of Sensitivity Coefficients

Pareto Diagrams for Sensitivity Analysis

Reliability Models for Projecting

Uncertainty Growth

Automatic Type A and Type B Classification

Bayesian Analysis Options

Analysis of Correlations

Computation of Confidence Levels and Limits

OLE Object Importing

Windows 95, 98, NT, 2000, XP, 7, 8 and 10