



AccuracyRatio FAQs

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Integrated Sciences Group answers frequently asked questions about our AccuracyRatio software. The answers are intended to provide further clarification about the capabilities of our measurement decision risk analysis product. If you have any questions or comments regarding any of the FAQ topics listed below or would like us to answer additional questions, please contact us at isg@isgmax.com.

Question

I already use your RiskGuard freeware, why would I need AccuracyRatio?

Answer

RiskGuard is intended to help people get a good start at analyzing measurement decision risk. AccuracyRatio is a professional tool that can be used to estimate risks in a variety of contexts and generate full reports of the analysis results. Some of the AccuracyRatio features and functions that are not available in RiskGuard are listed below.

- Accommodation of asymmetric subject parameter tolerances.
- Risk baseline definition.
- Calculation of true versus observed percent in-tolerance.
- Computation of “effective” accuracy ratio keyed to risk.
- Reliability modeling for both subject and measuring parameters.
- Calculation of percent in-tolerance based on projected reliability.
- Worksheet for developing uncertainty estimates for direct measurements.
- Bayesian estimates of biases and in-tolerance probabilities for subject and measuring parameters.
- Plots and Graphics
 - Risk baseline versus accuracy ratio
 - Risk versus percent in-tolerance
 - Error distributions
- Built-in measurement units database.
- Built-in Help function.
- Risk Analysis and Uncertainty Analysis Reports.

How does AccuracyRatio's uncertainty analysis capability compare to other ISG software?

Like our Uncertainty Sidekick freeware, AccuracyRatio's uncertainty analysis capability is limited to direct measurements. AccuracyRatio's Measurement Process



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Question

Answer

Uncertainty Worksheet does not contain an interactive step-by-step procedure checklist. Drill-down worksheets are provided for estimating repeatability uncertainty but are not available for other measurement process errors.

Note: AccuracyRatio has the capability of importing analyses from UncertaintyAnalyzer, our most versatile, state-of-the-art tool for analyzing any type of measurement process, from very simple to highly complex.

Are uncertainty estimates made with AccuracyRatio suitable for calibration laboratory accreditation?

For direct measurements, yes. As with all our uncertainty analysis software, AccuracyRatio incorporates methods found in the ISO Guide to the Expression of Uncertainty in Measurement (GUM).

Is AccuracyRatio difficult to use?

No. AccuracyRatio utilizes drill-down screens and worksheets, augmented by on-screen procedures where appropriate, that are designed to facilitate data analysis. AccuracyRatio also has a full on-screen Help function and comes with a comprehensive user manual.

What reports can I generate with AccuracyRatio?

AccuracyRatio has a variety of reporting levels, including summary reports and "drill-down" reports for complete communication of the risk and uncertainty analysis results. All reports are exportable to MS Word. AccuracyRatio's reports capability includes:

- User defined title, submitter, approver, reporting organization, using organization and remarks.
- Font selection and inclusion of plots.

How does AccuracyRatio compare to software offered by other companies?

Currently, no other companies offer such a comprehensive application for calculating and evaluating measurement decision risk.

Why can't I simply use an Excel spreadsheet to analyze measurement decision risk?

Although most technical personnel routinely use Excel spreadsheets, considerable programming effort is required to fully implement the probability and statistics methods necessary for analyzing measurement decision risk. This includes the development of numerical algorithms to perform the double-integration of probability density functions need to compute this risk. The resulting robust risk analysis tool quickly becomes a full-fledged software application instead of a simple spreadsheet template.



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Question

Has AccuracyRatio been validated?

Answer

Currently, there are no standards or guidelines for testing and validation of risk analysis software. However, there are many common-sense protocols that ISG applies, some of which are summarized below.

Validation of mathematical and statistical methods.

ISG routinely publishes papers and articles that clearly describe the mathematical and statistical concepts that are incorporated in our software products. This serves two purposes:

1. It shows that we have an unsurpassed technical understanding of measurement decision risk analysis concepts and principles.
2. The information can be reviewed and scrutinized in the public domain.

Verification of numerical approximations and calculations.

Depending upon the sophistication of the numerical algorithms, our program calculations are verified via hand calculations, Excel spreadsheets, or math and statistics applications such as MathCAD. Verification of numerical algorithms are achieved in a number of ways including:

1. Extensive alpha testing via internal peer review and verification.
2. Vigorous beta testing via external review and verification by selected customer base.
3. Widespread peer review and verification via distribution of freeware subprograms and applets.
4. Large-scale customer use and feedback over the past 15+ years.

Verification of program functionality.

Another important aspect of our software validation is the verification that the program screens, templates, or worksheets function as intended and that data entered into drill-down screens are properly stored and transferred to other screens as needed. Our protocol for testing and validating program functionality is the same as described for numerical algorithms.

Note: When software validation is of primary concern, we



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Question

Answer

Will AccuracyRatio run on the Windows 7, Vista, Macintosh or Linux operating systems?

provide customers with specific validation reports upon request.

AccuracyRatio is a 32-bit Windows-based application. Therefore, it will run on the 32-bit editions of the Windows 7 and Vista operating systems. The Microsoft WOW64 emulator also allows 32-bit applications to run seamlessly on the 64-bit editions of these operating systems.

AccuracyRatio does not run on the Macintosh or Linux operating systems. However, it will run on Macintosh or Linux operating systems running a PC emulator program without any degradation in functionality.

What kind of technical support can I expect to receive?

Technical support is a major consideration for many software users, especially when using a specialized analysis program. Registered users of AccuracyRatio have access to free technical support (via phone, fax and email) from professionals with established measurement decision risk analysis expertise.

Why should I purchase risk analysis software from ISG?

Since ISG has been a major pioneer in developing measurement science analytical methodology over the past 30 years, our software products embody the most advanced tools and methods available.

Our state-of-the-art software products not only comply with ISO standards and guidelines, they also incorporate several ground-breaking measurement uncertainty analysis methods and techniques developed and published by ISG personnel.

Our commitment to product excellence is epitomized by an unmatched level of software maintenance and support. Unlike other companies, we continually strive to improve the functionality of our software by including customer suggested new features or enhancements as part of our free service updates.