GAGEtrak® Product Update Version 6.70

New Features and Enhancements in GAGEtrak 6.70

MSA 4th Edition Support

GAGEtrak 6.70 now supports Measurement Systems Analysis 4th Edition calculations for ANOVA, Linearity, Bias, Stability, Attribute Risk Analysis and Attribute Analytic Method studies. A summary of the changes in the MSA 4th Edition relevant to this GAGEtrak product update are provided below.

Bias Studies

To address the changes and improvements made to 4th Edition Bias Studies, GAGEtrak 6.7 adds calculations for Equipment Variation as a percentage of Total Variation (%EV). If a minimum and maximum specification limit has been entered in the Linearity screen, GAGEtrak will also calculate Equipment Variation as a percentage of Tolerance.

In the bias study the %EV determines whether the inherent repeatability error is large. The t statistic compares the bias with the repeatability of the measurements obtained. A Statistically significant bias is rejected, while a not significant bias leads to the acceptance of the bias study. However a large %EV is likely to condone relatively large bias values as not significant. This can lead to confusing results. Hence the evaluation of %EV is recommended as a precursor to bias evaluation. Testing acceptance of a Bias study based on p values is discussed in the AIAG MSA manual and sample study data is provided.

Linearity Studies

Similar to the evaluation of Bias, Linearity evaluations in the MSA 4th Edition will also require %EV calculations to be completed. GAGEtrak 6.7 adds calculations for Equipment Variation as a percentage of Total Variation. As with Bias, if a minimum and maximum specification limit has been entered GAGEtrak will calculate Equipment Variation as a percentage of Tolerance. Linearity is also screened by a precondition of a small %EV. Again, similar to Bias a Linearity evaluation based on large inherent Repeatability error may lead to misleading results.

Repeatability and Reproducibility Studies and the ANOVA Approach

The MSA 4th Edition emphasizes the fact that the ANOVA method of analysis of GRR results identifies the appraiser-part interaction. Therefore, it is recommended as the preferred method of analysis. Except when using the Range method, R&R studies are now recommended to be done with a minimum of 10 parts. GAGEtrak 6.7 defaults to a 10 part study for R&R and ANOVA in accordance with this recommendation.

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Repeatability and Reproducibility Studies - Comparison with the Target Ppk

GAGEtrak 6.7 now allows the user to enter Pp (or Ppk) Target information for use in calculating Percentage of Tolerance (% Tol) results in accordance with the MSA 4th Edition recognition of Ppk in calculation of %GRR.

In earlier editions the MSA manual recommended that %GRR be calculated with Study Variation, Process Variation or the Part Tolerance. In addition to these three approaches, the MSA manual now recognizes that the actual process variation will be tighter than the tolerance width to the extent of the planned Ppk. The %GRR can be calculated with the target value of Ppk as the base line.

Application of Number of Distinct Data Categories – Calculating with the Ppk Approach

GAGEtrak 6.7 now allows the user to enter the Pp (or Ppk) Target for use in calculating nDC value corresponding to % Tolerance.

The MSA 4th Edition manual now further explains the details regarding application of nDC Calculation of nDC. Taking the Pp/ Ppk approach is also covered in more detail.

Attribute Measurement Systems Study

GAGEtrak 6.7 now includes the Study Effectiveness Summary table for MSA 4 studies.

A new table “Study Effectiveness Summary” replaces an incorrect table that was in the MSA 3rd Edition Manual. There are also optional opportunities to apply the %EV changes mentioned above.

Interface Update

The entry screen for each different category of MSA study now includes the “MSA Version” field with a drop-down list that allows you to select MSA Version 3 or MSA Version 4. Studies that were created in MSA 3 will remain “MSA Version 3,” unless you wish to update the study to use the new MSA 4th Edition calculations.

The Pp (or Ppk) Target field has been added to the relevant MSA study screens to accommodate entry of the planned Ppk value for MSA studies.

Database Update

As part of the MSA V4 update, new fields needed to be added to the GAGEtrak database to accommodate the new information required.

If you are using an MS Access database, GTData65.mdb, with GAGEtrak, the first time you link to your database, you will be prompted to automatically update it. If you are using a SQL database, GAGEMGR65 or GAGETRAK65, you will need to run a SQL script on your SQL server to update your database. Please see the file GAGEtrakSoftwareUpdateInstructionsv6_7.pdf for more information on this process.

Special Note

GAGEtrak 6.70 Calibration Management Software will display the 6.70 version number during installation and execution. However, it is an update to the GAGEtrak 6.5 software series. Therefore, the program files and registry entries will be installed into the GAGEtrak 6.5 directory and the GAGEtrak 6.5 registration locations. GAGEtrak 6.70 continues to utilize the previous GAGEtrak 6.5 databases: GTData65.mdb, GAGEMGR65 (SQL) or GAGEtrak65 (SQL).

Related Products (CalPro, Validation Kit, PDA, Netbook PCM)

GAGEtrak 6.70 uses the same versions of CalPro, BEACON, Brother P-Touch Label Printers and PDA as previous GAGEtrak 6.5 releases. Customers with GAGEtrak 6.70 can use the GAGEtrak Validation Guide for 6.61, 6.62, or 6.63. Customers with GAGEtrak PCM (Portable Calibration Module) may install the new GAGEtrak 6.70 PCM application update if preferred but it is not necessary for compatibility with GAGEtrak 6.7.

Technical Support

For more information about the changes in GAGEtrak 6.70, please email your request to support@cybermetrics.com.