

IntervalMAX

The World's Most Sophisticated Interval Analysis System

It's basic arithmetic. If you calibrate twice as often as you need to, your calibration costs will be double what they should be. If you calibrate three times as often as you need to, your costs will be triple what they should be. Obviously, the frequency of calibration is a major cost driver. Nevertheless, it is a demonstrable fact that **many calibration organizations calibrate two to four times more often than necessary**. Why? Simply because, in many cases, the correct calibration interval is unknown and, if the correct interval is unknown, it's safest to use a short one. The same reasoning applies to test intervals and even maintenance intervals. On the other hand, **many critical items are not calibrated frequently enough**. In these cases, measurement error can sometimes jeopardize product integrity or mission success.

What these facts tell any smart manager is that no effort should be spared to determine correct intervals. Fortunately, a methodology exists for doing just that. The methodology is called **Method S2** and it's documented in **NCSLI's RP-1**. Unfortunately, it can cost up to between \$1M to \$2M to develop a system based on S2. So, what to do? Do you continue to pour a fortune down the support cost drain or should you start climbing the software development mountain? Actually, you don't need to do either. What you need is **IntervalMAX**.

Correct intervals in the shortest possible time at minimum expense

IntervalMAX is an **established software package** that defines the state-of-the-art in test/calibration interval analysis. IntervalMAX incorporates all the features of Method S2 and more — including a host of management options and spin-offs **designed to help you optimize your test or calibration support**.

IntervalMAX computes test and calibration intervals at minimum cost and with minimum effort. It does this by using automated maximum likelihood techniques. With these techniques, **IntervalMAX fits complex reliability models to data, tests the models for validity, computes intervals, and calculates cost and workload impact**.

MULTI-LEVEL ANALYSIS

IntervalMAX computes intervals for instrument classes, groups, model numbers, individual serial numbers and systems...

Model Number Analysis

Model number intervals are computed by pooling data for individual instruments within the same manufacturer/model number. The U.S. Army, Navy, Air Force and major aerospace corporations do this to find the **best intervals** and to **optimize recall scheduling**.

Similar Equipment Group and Instrument Class Analysis

Similar Equipment Groups are families of model numbers that have a common application and are similar in complexity and technology. Instrument Classes are "supergroups" of manufacturer/models that have a common basis for comparison. Pooling data within groups and classes allows intervals to be computed for **items with sparse data**. Once a group or class level interval is obtained, it can be used as an initial interval for items assigned to a group or class or as a yardstick for comparing the performance of equipment made by different manufacturers.

Initial Intervals

Optimal Intervals - Minimum Expense

Automated Data Compilation and Conditioning
Advanced Data Analysis and Modeling

Intervals to Meet Reliability Requirements

Instrument Classes
Similar Equipment Groups
Instrument Model Numbers
Instrument Serial Numbers
Systems

NCSLI Method S2 and More

State-of-the-Art Methodology
Exceeds DoD and ISO Requirements

Reliability Models for All Types of MTE

All MTE Uncertainty Growth Mechanisms Represented
Automated Model Testing and Selection
Model Selection Based on Data Analysis

User Defined Criteria and Policies

Graphical Interface
All Interval and Related Management Issues Covered

Flexible Scope

Analyze all Data or Selected Data Subsets
Analyze Cases With Sufficient New Data Only
Pick Analysis Candidates from Drag-and-Drop Lists

Efficient Review and Approval

Intervals for Classes, Groups, Systems, Model Numbers and Serial Numbers
Recommended Intervals with Confidence Limits
Interval Change Flags
Engineering Overrides
Case-by-Case or Summary Interval Approval

Complete Visibility

Comprehensive Data and Statistics
Resubmission Time Histograms
Reliability Model Plots
"What-if" Analyses for Reliability Targets and Intervals

Comprehensive Reports

Class, Model Number, Group and Serial Number Intervals
Interval Cost and Workload Impact
Serial Number and Model Number Dogs and Gems
Cal/Test Organization, Technician and MTE User Outliers
Class, Group and Model Number Technical Data
Interval System Evaluation

Identification of Statistical Outliers

Serial Number Dogs and Gems
Model Number Dogs and Gems
Suspect Using Activities
Suspect Test/Cal Activities
Suspect Technicians

On-Screen Help

Expert Technical Support

Substantial Return on Investment

Priced Well Below Potential Cost Savings

Secure Future

Leading Edge Developers
Ongoing R&D
Responsive to Customer Needs

Optional Maintenance Contract

Serial Number Analysis (Dogs and Gems)

By comparing the performance of individual serial numbers within a model number family and equipment model numbers within groups and classes, IntervalMAX is able to identify significantly bad or good performers. These items, called **dogs and gems**, are automatically assigned short or long intervals, as appropriate.

System Interval Analysis

With IntervalMAX, special intervals can be determined for items that are components of systems. A **variety of options** are available for this. For instance, component intervals can be adjusted to meet individual reliability targets or an overall system target. In addition, component recall schedules can be synchronized in stratified calibration plans, tied together in a single "system interval" or can be set on an individual item basis.

INTERVALS ON DEMAND

Intervals can be analyzed automatically or on demand. Working through a **graphical user interface**, IntervalMAX can analyze intervals for an entire measuring and test equipment inventory or only for selected model numbers and other options. For example, analyses can be run for specified combinations of users, service date ranges, manufacturers, model numbers, classes, etc.

BEST INTERVAL ASSIGNMENT

IntervalMAX uses a **built-in selection hierarchy** to choose the best interval from available class, group, model number and serial number intervals. The selected interval is then adjusted to user needs in accordance with the **appropriate reliability target**. Reliability targets are assigned at the system, class, group, model number and serial number levels. **Custom intervals** are determined using special reliability targets or engineering overrides. If a particular item has a high or low criticality application, just enter the applicable reliability target. IntervalMAX computes an appropriately short or long interval and assigns it to the item.

Intervals Adjusted to User Needs

COMPREHENSIVE ANALYSIS RESULTS

When an analysis run is finished, results are available at the click of a button. In addition to calibration intervals, you get **comprehensive lists** of identified dogs and gems, an interval impact report, reports on unusual equipment usage, identification of unusual calibration activity and more. For those special cases, where you need to know as much as possible about uncertainty growth over time, you can call up **reliability model plots** showing how in-tolerance percentage changes with time since calibration. A **resubmission time histogram** is also available for assessing whether actual calibration intervals are in compliance with assigned intervals.

CONVENIENT DATA ACCESS

IntervalMAX can be easily interfaced with existing data management systems. To get test or calibration data into IntervalMAX, just save it in a popular format (dBASE, FoxPro, Btrieve, Access, etc.). From there, it's a simple matter of cross referencing data fields. Since IntervalMAX provides a **built-in data import utility**, cross-referencing involves merely dragging and dropping field names from one list to another—and this only needs to be done once. IntervalMAX remembers

Drag-and-Drop Interface

cross-referencing schemes by storing them in "profiles."

Getting data *from* IntervalMAX is just as easy. IntervalMAX exports intervals to data management systems through an export interface, defined by an export profile established in the same way as the data import profile.

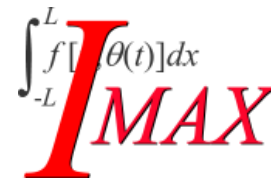
Incidentally, if you are using OpenMETRIC from Diversified Data Systems, import and export profiles are already built in, so data importing and exporting are seamless and virtually effortless.

SECURE BUT FLEXIBLE ACCESS

IntervalMAX can be installed on a single **PC workstation** or on a **PC network**. If installed on a network, IntervalMAX can be accessed by anyone with network access. Users are assigned one of three security levels. Assignments are controlled by the IntervalMAX System Administrator.

EASY SYSTEM INTEGRATION

IntervalMAX runs in Windows 95, 98, NT, ME, 2000 and XP. It has been **thoroughly exercised** in a variety of user environments on both networks and stand-alone PC workstations. What's more, we perform exhaustive preliminary runs with samples of your data free of charge before you buy.



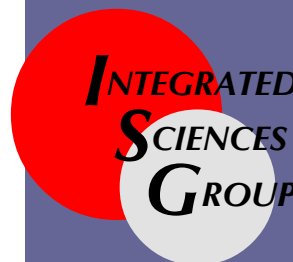
IntervalMAX Pricing

Version 2.0	Starts at \$3300 (USD)
Upgrade from Version 1.0	Starts at \$1320 (USD)
Maintenance Option	Starts at \$675
System Administrator Training	Base amount of \$6,000 plus travel expenses plus \$220 per student

For More Information

Call 1-800-400-7866
Visit our Web Site www.isgmax.com
Contact us by E-mail sales@isgmax.com

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14608 Casitas Canyon Road
Bakersfield, CA 93306