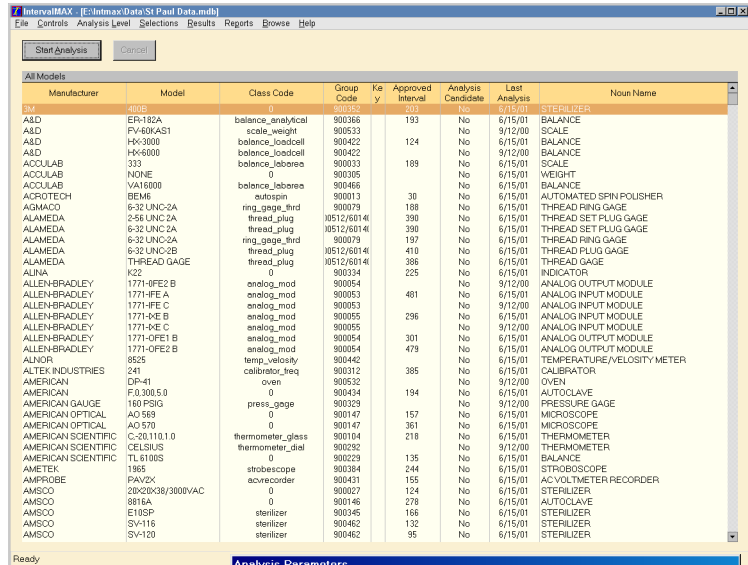


**State-of-the-Art Analysis**

- Incorporates Methods S2 and A3 of NCSLI's RP-1.
- Utilizes reliability models that cover all types of test and measurement equipment.
- Adjusts intervals to meet specified reliability targets.
- Uses efficient algorithms to produce correct intervals in the shortest possible time at minimum expense.

**Practical User Interface**

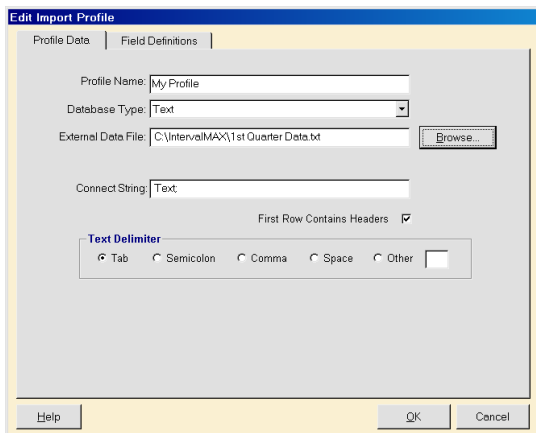
- All IntervalMAX functions and features are accessed from the **Main Screen**.
- Technical and administrative analysis criteria, controls and options are established on the **Analysis Parameters Screen**.
- All screens have access to a full-featured **On-line Help** with content, index and search capabilities for over 550 topics.



Manufacturer	Model	Class Code	Group Code	Key	Approved Interval	Analysis Candidate	Last Analysis	Noun Name
ASD	ER-182A	balance_analytical	900366	193	No	8/15/01		BALANCE
ASD	FV-60KAS1	scale_weight	900533		No	9/12/00		SCALE
ASD	HK-3000	balance_loadcell	900422	124	No	8/15/01		BALANCE
ASD	HK-6000	balance_loadcell	900422		No	9/12/00		BALANCE
ACCOLAB	333	balance_laborea	900033	189	No	8/15/01		SCALE
ACCOLAB	NONE	0	900305		No	8/15/01		WEIGHT
ACCOLAB	VN15000	balance_laborea	900466		No	8/15/01		BALANCE
ACROTECH	BEM6	autospin	900013	30	No	8/15/01		AUTOMATED SPIN POLISHER
AGMADO	6-32 UNC-2A	ring_gage_thr	900079	188	No	8/15/01		THREAD RING GAGE
ALAMEDA	6-32 UNC-2A	thread_plug	0512/6014	390	No	8/15/01		THREAD SET PLUG GAGE
ALAMEDA	6-32 UNC-2A	thread_plug	0512/6014	390	No	8/15/01		THREAD SET PLUG GAGE
ALAMEDA	6-32 UNC-2A	ring_gage_thr	900079	197	No	8/15/01		THREAD RING GAGE
ALAMEDA	6-32 UNC-2B	thread_plug	0512/6014	410	No	8/15/01		THREAD PLUG GAGE
ALAMEDA	THREAD GAGE	thread_plug	0512/6014	386	No	8/15/01		THREAD GAGE
ALINA	K22	0	900334	225	No	8/15/01		INDICATOR
ALLENBRADLEY	1771-0FE2 B	enolog_mod	900054		No	9/12/00		ANALOG OUTPUT MODULE
ALLENBRADLEY	1771-0FE A	enolog_mod	900053	481	No	8/15/01		ANALOG INPUT MODULE
ALLENBRADLEY	1771-0FE C	enolog_mod	900053		No	9/12/00		ANALOG INPUT MODULE
ALLENBRADLEY	1771-0FE B	enolog_mod	900055	296	No	8/15/01		ANALOG INPUT MODULE
ALLENBRADLEY	1771-0FE C	enolog_mod	900055		No	9/12/00		ANALOG INPUT MODULE
ALLENBRADLEY	1771-0FE1 B	enolog_mod	900054	301	No	8/15/01		ANALOG OUTPUT MODULE
ALLENBRADLEY	1771-0FE2 B	enolog_mod	900054	479	No	8/15/01		ANALOG OUTPUT MODULE
ALNOR	8628	temp_velocity	900442		No	8/15/01		TEMPERATURE VELOCITY METER
ALTEK INDUSTRIES	241	calibrator_freq	900312	385	No	8/15/01		CALIBRATOR
AMERICAN	DP-41	oven	900532		No	9/12/00		OVEN
AMERICAN	F-9 300S-0	0	900434	194	No	8/15/01		AUTOCALVE
AMERICAN GAUGE	160 PSIG	press_gage	900229		No	9/12/00		PRESSURE GAGE
AMERICAN OPTICAL	AO 589	0	900147	157	No	8/15/01		MICROSCOPE
AMERICAN OPTICAL	AO 578	0	900147	361	No	8/15/01		MICROSCOPE
AMERICAN SCIENTIFIC	C-20.110.1.0	thermometer_glass	900104	218	No	8/15/01		THERMOMETER
AMERICAN SCIENTIFIC	CELSIUS	thermometer_dial	900292		No	9/12/00		THERMOMETER
AMERICAN SCIENTIFIC	TL 8100S	0	900229	135	No	8/15/01		BALANCE
AMETEK	1965	stroboscope	900384	244	No	8/15/01		STROBOSCOPE
AMPROBE	PAV2K	acrecorder	900431	155	No	8/15/01		AC VOLT METER RECORDER
AMSCO	20C200/30/3000VAC	0	900027	124	No	8/15/01		STERILIZER
AMSCO	8816A	0	900146	278	No	8/15/01		AUTOCALVE
AMSCO	E10SP	sterilizer	900345	166	No	8/15/01		STERILIZER
AMSCO	SV-116	sterilizer	900462	132	No	8/15/01		STERILIZER
AMSCO	SV-101	sterilizer	900462	95	No	8/15/01		STERILIZER

**Data Import/Export**

- Test or calibration service history data can be imported into the IntervalMAX database from external sources. Import connections for a variety of database, spreadsheet and other formats are defined and stored using the **Import Configuration** and **Edit Import Profile** screens.
- Data can be imported in MS Access, dBase, MS Excel, Lotus, HTML, Delimited Text and ODBC formats.
- Imported data are automatically screened for potential data conflicts and duplicate records. Data conflicts are flagged and reidentification diagnostics and editing screens are activated for making corrections. Duplicate records are automatically omitted.



**Edit Import Profile**

Profile Name: My Profile

Database Type: Text

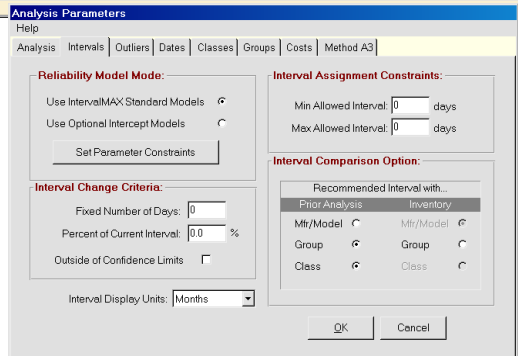
External Data File: C:\IntervalMAX\1st Quarter Data.txt

Connect String: Text

Text Delimiter:  Tab  Semicolon  Comma  Space  Other

**Multi-Level Interval Analysis**

- Intervals can be determined for **Instrument Classes**, **Similar Equipment Groups**, **Instrument Model Numbers**, **Instrument Serial Numbers**, and **Multi-component Systems**.



**Analysis Parameters**

Reliability Model Mode:  Use IntervalMAX Standard Models  Use Optional Intercept Models

Interval Assignment Constraints: Min Allowed Interval: 0 days, Max Allowed Interval: 0 days

Interval Comparison Option: Recommended Interval with:  Prior Analysis  Inventory

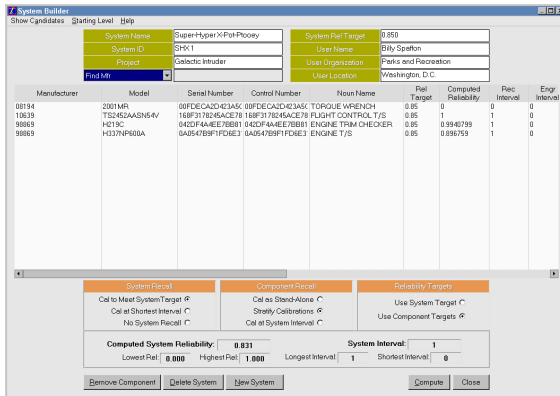
Interval Change Criteria: Fixed Number of Days: 0, Percent of Current Interval: 0.0%

- Interval analysis results can be exported to an external database via the **External Interval Assignment** screen. Export connections are defined and stored using **External Interval Assignment Setup** screens.

**Built-in Cumulative History Database**

- IntervalMAX establishes intervals through analysis of test or calibration history maintained in a **Cumulative History Database**, assembled from imported test or calibration service history.
- Built-in database cleanup functions are available for maintaining the cumulative history data.

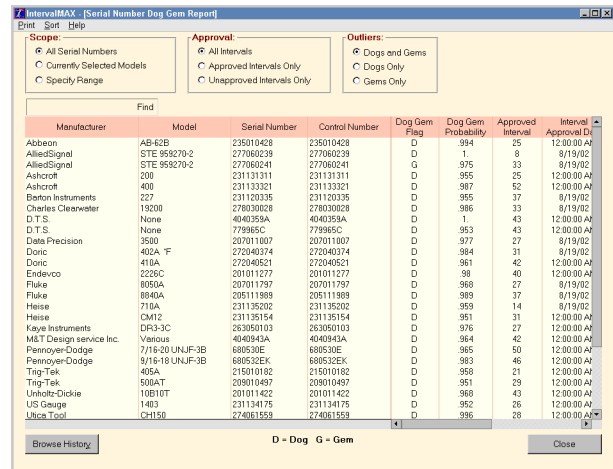
## Key Features



- Intervals can be computed for items with sparse data by pooling data within Classes and Groups defined via the **Class Code Builder** and **Similar Equipment Group Builder**.
- Intervals can be determined for multi-component Systems defined via the **System Builder**. Component intervals can be adjusted to meet individual reliability targets or an overall system target. Several recall options are available including stratified calibration, where recall cycles are adjusted to optimize both logistics and reliability.
- Browsers** are available for viewing information for all analysis levels.

## Outlier Identification

- IntervalMAX automatically identifies significantly bad and good performers (dogs and gems).
- Individual items identified as dogs or gems can be reviewed on the **Serial Number Dogs/Gems Report**.
- Model Number dogs and gems are identified for Class and Group Level Analyses.
- Results can be reviewed on the **Model Number Dogs/Gems Report**.
- Suspect activities, whose mean times to out-of-tolerance are significantly higher or lower than the norm, can be identified for common workloads or inventories and reported on various outlier reports.

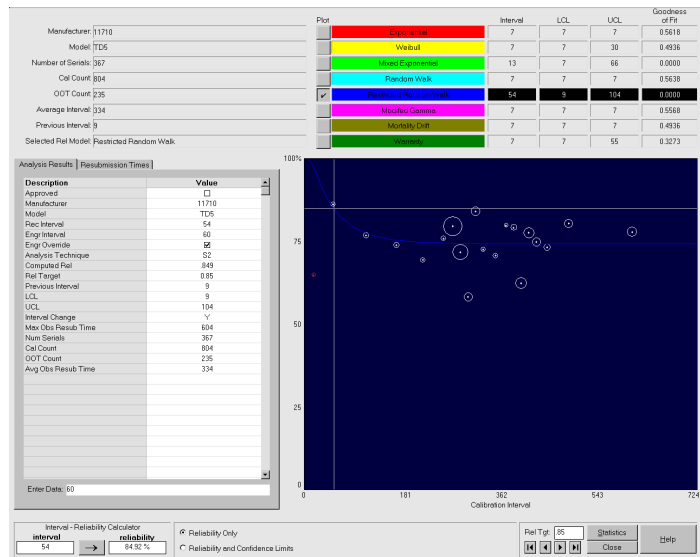


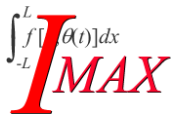
## Cost/Benefit Analysis

- The impact of implementing recommended intervals on workload and cost can be assessed using the **Calibration Interval Impact Report**.
- Default workload and cost parameters can be specified on the **Costs** tab on the **Analysis Parameters Screen**.
- More detailed workload and cost data parameters be specified by manufacturer/model using the **Cost Variables Screen**.

## Detailed Analysis Results

- Several **Analysis Screens** are available for viewing intervals, reliability targets and other related information for each Analysis Level.
- The **Analysis Details Screen** provides both graphical and tabulated information about service history data and analysis results for the selected Analysis Level.
- Statistical information for selected reliability models are displayed on the **Model Fit Parameter Data Screen**.





# IntervalMAX 2.0

from Integrated Sciences Group

## Key Features

### Comprehensive Analysis Reports

- The analysis reporting capability encompasses a wide range of management objectives. Available reports include:
  - Instrument Class Interval
  - Similar Equipment Group Interval
  - Model Number Interval
  - Serial Number Interval
  - Calibration Interval Impact
  - Serial Number Dogs/Gems
  - Model Number Dogs/Gems
  - Suspect Using Organizations
  - Suspect Calibrating Organizations
  - Suspect Calibration Technicians
  - Class Technical Data
  - Similar Equipment Group Technical Data
  - Model Technical Data
  - System Evaluation
- All reports can be viewed, printed and exported to external files.

**Interval Impact Report**  
February 25, 2009

Manufacturer	Model	Reviews	Non-Reviews	Analysis	Est. Change	Non-Workshop	Cost	Est. Cost	Est. Cost	Est. Cost	Est. Cost	Est. Cost
		Items	Items	Lock	Items	Items	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
TELETYPE INC	M644230	291	749	M	1.62	204	-164	\$5445.62	154.78	1.87	\$ 40.00	
TELETYPE INC	M644239	455	749	M	0.54	47	-12	\$ 3,112.14	249.85	6.23	\$ 40.00	
TELETYPE INC	M644240	333	661	M	0.98	444	-2,228	\$50,802.18	192.87	2.65	\$ 40.00	
TELETYPE INC	M644232	119	290	M	1.44	900	-1,628	\$23,941.78	144.85	3.62	\$ 40.00	
TELETYPE INC	M644233	56	235	M	1.40	600	-1,648	\$11,250.00	120.97	3.02	\$ 40.00	
TELETYPE INC	M644281	144	220	M	0.53	1,159	-1,050	\$325,244.31	330.86	7.75	\$ 40.00	
TELETYPE INC	M644287	10	26	M	4.60	97	-2,609	\$305,641.74	122.15	3.80	\$ 40.00	
TELETYPE AMMOVIC DIVISION O	M644211	294	639	M	1.37	101	-69	\$4,143.20	200.91	2.22	\$ 40.00	
TELETYPE AMMOVIC DIVISION O	M644212	426	724	M	0.70	18	-6	\$ 2,286.29	379.78	9.47	\$ 40.00	
TELETYPE CAMERA SYSTEMS INC	M644287	83	172	M	1.87	43	99	\$10,829.94	184.22	4.61	\$ 40.00	
TELETYPE ELECTRONICS TEL ED	M644280	38	38	M				924.70	23.12	\$ 40.00		
TELETYPE MATHEMATICS T	M644314	29	36	M	0.80	33	187	\$25,244.91	115.14	1.38	\$ 40.00	
TELETYPE TABER, A TELETYPE I	M644282	1,677	1,677	M				71.44	1.79	\$ 40.00		
TELETYPE CONTROLS INC	M644384	511	893	M	0.54	42	-11	\$1,223.13	96.37	2.41	\$ 40.00	
TRANS AMERICA EXCHANGE INC, C	M644315	1,065	4,977	M	2.83	234	-133	\$4,079.92	60.88	1.52	\$ 40.00	
TRANS AMERICA EXCHANGE INC, C	M644316	392	1,676	M	1.82	380	-234	\$3,923.63	39.45	1.49	\$ 40.00	
TRANS AMERICA EXCHANGE INC, C	M644285	290	290	M				42.42	1.14	\$ 40.00		
TRINITY SCALE AND MANUFACTURE	M644303	543	2,248	M	3.69	1,823	-980	\$47,997.33	48.05	1.20	\$ 40.00	
UTICA TOOL CO, INC	M644287	1,288	1,288	M				106.20	2.79	\$ 40.00		
YORK DESIGN CO	M644301	62	156	M	0.90	260	-349	\$6,228.25	102.42	2.56	\$ 40.00	
WALLACE AND STEPHAN PULPER	M644284	22	39	M	0.77	66	477	\$17,269.66	246.55	6.16	\$ 40.00	
WARRNER ELECTRIC MEASUREMENT	M644317	278	763	M	1.74	115	-96	\$4,121.31	84.60	2.11	\$ 40.00	
WARRNER ELECTRIC MEASUREMENT	M644317	278	763	M	1.74	115	-96	\$4,121.31	84.60	2.11	\$ 40.00	
WEGGLER INSTRUMENTS CORP	M644115	3,842	3,842	M				122.26	3.08	\$ 40.00		
WEGGLER INSTRUMENTS CORP	M644284	56	55	M	0.56	127	-1,043	\$8,899.84	56.47	1.41	\$ 40.00	
WEGGLER INSTRUMENTS CORP	M644285	1,239	1,239	M				103.75	2.29	\$ 40.00		
WEGGLER INSTRUMENTS CORP	M644280	915	1,411	M	0.54	133	-19	\$939.72	59.04	1.51	\$ 40.00	
WEGGLER INSTRUMENTS CORP	M644281	2,013	2,423	M	0.20	908	-19	\$939.43	59.24	1.26	\$ 40.00	
WEGGLER INSTRUMENTS CORP, C	M644303	2,888	2,888	M				24.44	1.56	\$ 40.00		
WESTON INSTRUMENTS DIV, SAH	M644189	1,238	1,709	M	0.29	77	-5	\$223.77	47.61	1.19	\$ 40.00	
WESTON INSTRUMENTS DIV, SAH	M644174	740	740	M				56.80	1.42	\$ 40.00		
WELLS WOODWARD INSTRUMENTS I	M644283	111	116	M	0.95	254	-406	\$120,838.88	297.87	7.43	\$ 40.00	
WILLIAMS INTERNATIONAL CORP	M644280	86	134	M	0.56	8	-12	\$1,209.83	99.17	2.48	\$ 40.00	
WISCONSIN	M644284	290	393	M	0.51	24	-33	\$6,621.66	266.17	6.20	\$ 40.00	

Interval Changes	Estimated Annual Cost Impact
Number of Changes: 85	Workshop (Estimate): \$9,232.00
Average Change: 515	Net Cost Difference: \$23,548,698.83
Avg % Difference: 140.29%	

All Items Are Rounded to the Nearest Dey Page 4 IntervalMAX

### Advanced Features

- Custom intervals can be developed using special reliability targets or engineering overrides. Targets may be assigned at the overall, Class, Group, Manufacturer/Model or Serial Number level.
- Analyses can be run for specified combinations of users, service data ranges, manufacturers, model numbers, classes, etc.
- User-specified reliability model parameter constraints can be set and stored via the **Initialize Parameter Constraints Screen**.
- Parameters, the variance-covariance matrix and summary statistics for each reliability model that was fit to test or calibration history data can be viewed on the **Model Fit Parameter Data Screen**.
- Users can accept recommended reliability model fits or select from a variety of reliability models. All reliability model fits are the result of maximum likelihood estimation (MLE).
- Reliability models are tested statistically for goodness-of-fit and are automatically selected on the basis of both statistical and cost considerations.

**Model Fit Parameter Data**

OK Cancel Select Model Restore Model Help

Selected Model: Restricted Random Walk

Restricted Random Walk

$$R(t) = \text{erf} \left[ \frac{1}{[p_1 + p_2(1 - e^{-\lambda t})]^{1/2}} \right]$$

Parameters:

p1 = 0.150000000  
p2 = 0.600000000  
p3 = 0.005000000

Variance-Covariance Matrix

0.1600669	-0.1508943	-0.0014538
-0.1508943	0.1501021	0.0011748
-0.0014538	0.0011748	0.0000258

Summary Statistics

Error due to Lock of Fit	2.4710316
Lock of Fit Degrees of Freedom	56
Pure Error	2.8389525
Pure Error Degrees of Freedom	333
F Ratio	0.7576006
Rejection Confidence	0.1031472