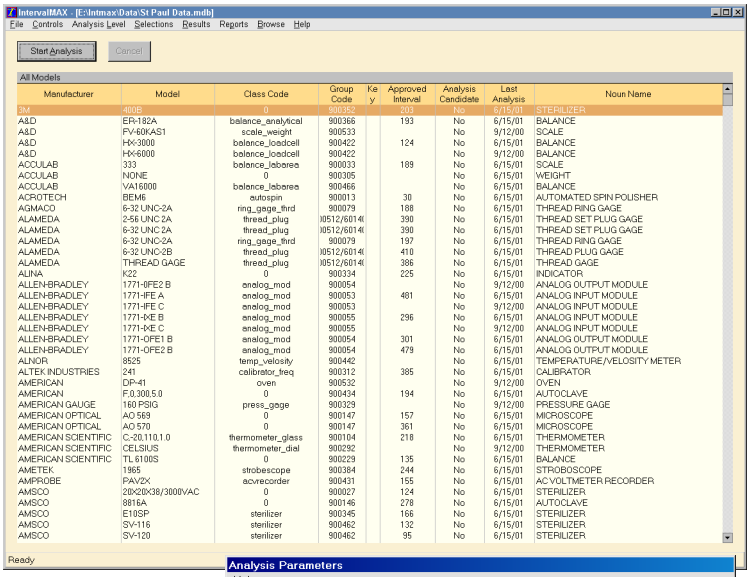
IntervalMAX 2.0

from Integrated Sciences Group

Key Features

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.

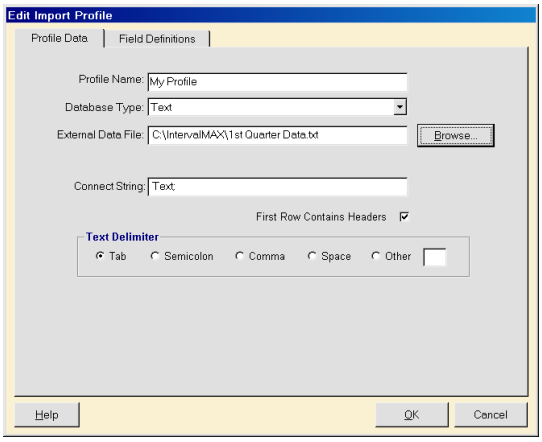


Practical User Interface

- 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.

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.



- 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.

Multi-Level Interval Analysis

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

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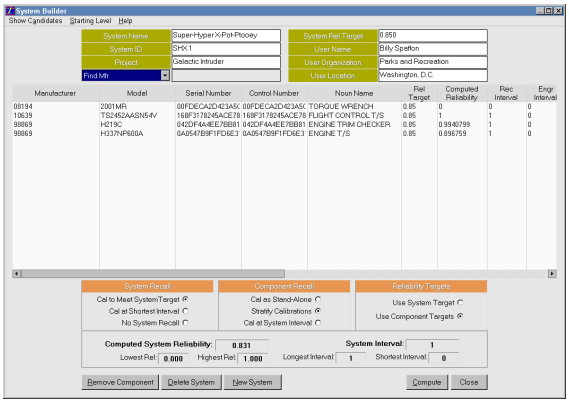
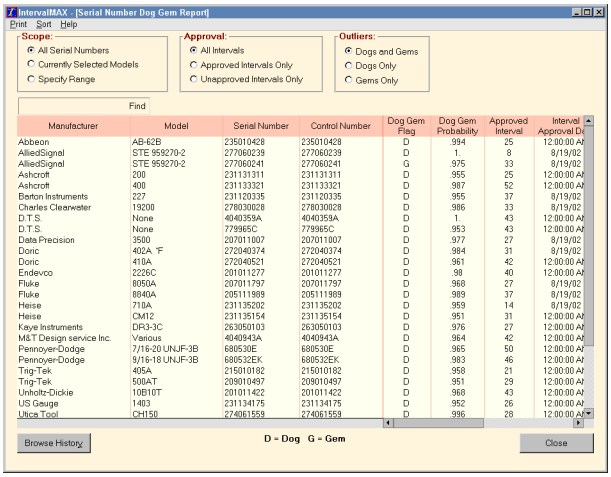


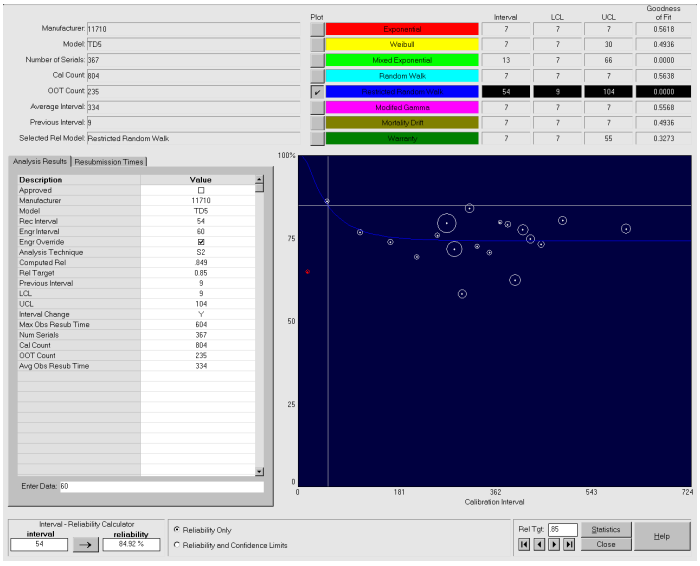
- Intervals can be computed for items with sparse data by pooling data within Classes and Groups defined via the **Class Code Builder** and **Similar Equipment Group Builder**.
- Intervals can be determined for multi-component Systems defined via the **System Builder**. Component intervals can be adjusted 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**.

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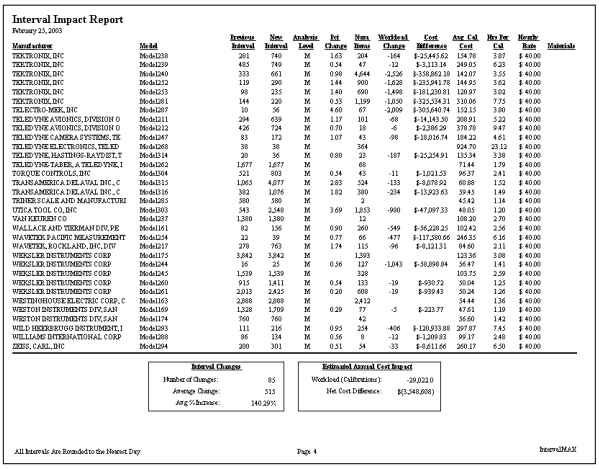
Comprehensive Analysis Reports



Interval Impact Report

February 25, 2003

Manufacturer	Model	Previous Interval	New Interval	Analysis Level	Pct Change	Num Items	Workload Change	Cost Difference	Avg Cal Cost	Hrs Per Cal	Hourly Rate	Materials
TEKTRONIX, INC	Model238	201	740	M	1.63	204	-164	$-25,445.62	154.78	3.07	$ 40.00	
TEKTRONIX, INC	Model239	483	749	M	0.54	47	-12	$-3,113.14	249.05	6.23	$ 40.00	
TEKTRONIX, INC	Model240	333	661	M	0.98	4,644	-2,226	$-358,862.18	142.07	3.55	$ 40.00	
TEKTRONIX, INC	Model252	119	200	M	1.44	900	-1,628	$-253,941.78	144.05	3.62	$ 40.00	
TEKTRONIX, INC	Model253	98	235	M	1.40	690	-1,498	$-181,230.81	120.97	3.02	$ 40.00	
TEKTRONIX, INC	Model281	144	220	M	0.53	1,199	-1,050	$-325,534.31	310.06	7.75	$ 40.00	
TELECTRO-MEK, INC	Model287	10	56	M	4.60	67	-2,009	$-303,640.74	152.15	3.80	$ 40.00	
TELEDYNE AVIONICS, DIVISION O	Model211	294	639	M	1.17	101	-68	$-14,143.30	208.91	5.22	$ 40.00	
TELEDYNE AVIONICS, DIVISION O	Model212	426	724	M	0.70	10	-6	$-2,206.29	370.70	9.47	$ 40.00	
TELEDYNE CAMERA SYSTEMS, TE	Model247	83	172	M	1.07	43	-98	$-18,016.74	184.22	4.61	$ 40.00	
TELEDYNE ELECTRONICS, TELED	Model268	38	38	M		364			924.70	23.12	$ 40.00	
TELEDYNE HASTINGS-RAYDIST, T	Model314	20	36	M	0.80	23	-107	$-25,254.91	133.34	3.38	$ 40.00	
TELEDYNE-TABER, A TELEDYNE, I	Model262	1,077	1,077	M		68			71.44	1.79	$ 40.00	
TORQUE CONTROLS, INC	Model304	521	803	M	0.54	43	-11	$-1,021.53	96.37	2.41	$ 40.00	
TRANSAMERICA DELAVAL INC., C	Model315	1,065	4,077	M	2.83	524	-153	$-8,079.92	60.88	1.52	$ 40.00	
TRANSAMERICA DELAVAL INC., C	Model316	302	1,076	M	1.82	380	-224	$-13,923.63	59.45	1.49	$ 40.00	
TRINER SCALE AND MANUFACTURI	Model285	580	580	M		2			45.42	1.14	$ 40.00	
UTICA TOOL CO, INC	Model303	543	2,249	M	3.69	1,053	-900	$-47,097.33	40.05	1.00	$ 40.00	
VAN KEUREN CO	Model237	1,380	1,380	M		12			108.20	2.70	$ 40.00	
WALLACE AND TIERMAN DIV, PE	Model161	92	156	M	0.90	260	-349	$-36,220.25	102.42	2.56	$ 40.00	
WAVETEK PACIFIC MEASUREMENT	Model234	22	39	M	0.77	66	-477	$-117,300.66	246.35	6.16	$ 40.00	
WAVETEK, ROCKLAND, INC, DIV	Model217	278	763	M	1.74	115	-96	$-8,121.31	84.60	2.11	$ 40.00	
WEKSLER INSTRUMENTS CORP	Model175	3,842	3,842	M		1,293			123.36	3.08	$ 40.00	
WEKSLER INSTRUMENTS CORP	Model244	16	23	M	0.56	127	-1,043	$-50,898.84	56.47	1.41	$ 40.00	
WEKSLER INSTRUMENTS CORP	Model245	1,539	1,539	M		328			103.75	2.59	$ 40.00	
WEKSLER INSTRUMENTS CORP	Model260	915	1,411	M	0.54	133	-19	$-930.72	50.04	1.25	$ 40.00	
WEKSLER INSTRUMENTS CORP	Model261	2,013	2,425	M	0.20	608	-19	$-939.45	50.24	1.26	$ 40.00	
WESTINGHOUSE ELECTRIC CORP, C	Model163	2,888	2,888	M		2,412			54.44	1.36	$ 40.00	
WESTON INSTRUMENTS DIV, SAN	Model169	1,328	1,709	M	0.29	77	-5	$-223.77	47.61	1.19	$ 40.00	
WESTON INSTRUMENTS DIV, SAN	Model174	760	760	M		42			56.60	1.42	$ 40.00	
WILD HEERBRUGG INSTRUMENT, I	Model293	111	216	M	0.95	254	-406	$-120,933.88	297.87	7.45	$ 40.00	
WILLIAMS INTERNATIONAL CORP	Model288	86	134	M	0.56	8	-12	$-1,269.83	99.17	2.48	$ 40.00	
ZEISS, CARL, INC	Model294	200	301	M	0.51	54	-33	$-8,011.66	260.17	6.50	$ 40.00	

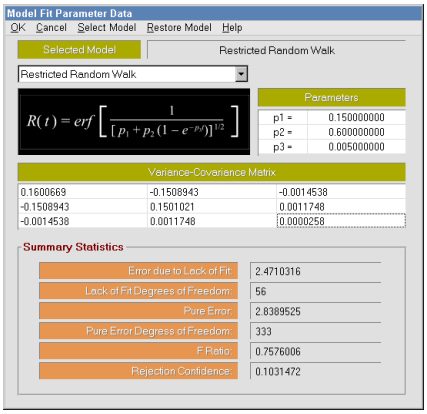
Interval Change	
Number of Changes:	85
Average Change:	513
Avg %Increase:	140.29%

Estimated Annual Cost Impact	
Workload (Calibrations):	-29,022.0
Net Cost Difference:	$(5,548,608)

All Intervals Are Rounded to the Nearest Day — Page 4 — IntervalMAX

- 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.

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.