IntervalMAX Data Import/Export Guide

These notes discuss IntervalMAX data import and export processes relating to the acquisition of calibration service history and the output of interval analysis results to inventory. Also discussed are import and export fields.

Service History Data

Service transactions must be documented in a file, database or database table provided by the IntervalMAX user for import into IntervalMAX. This file, database or table is referred to as the **Service History File**. The Service History File must be composed of sequential records, each of which applies to a service or administrative action.

Some of the fields in the user's service transactions are expected to be stored in the form of "codes" that are defined within the user's operating environment. For example, the code for an as-received in-tolerance condition may be "IT," or "1," or "InTolerance" or anything that signifies that an item was received for service in an in-tolerance condition. Likewise, the action taken (renewal) code for a service transaction may be "A," or "6" or "adjusted," etc.

IntervalMAX can be adapted to whatever specific fields and code definitions an individual user may employ, with certain restrictions. Consider, for instance, the information that indicates whether an item was received for service in an in-tolerance (passed) or out-of-tolerance (failed) condition. If the user's Service History file contains this information explicitly, IntervalMAX can utilize the data. If, however, the presence of an in- or out-of-tolerance condition requires combinations of codes, IntervalMAX cannot utilize the data. Suppose for example, the following algorithm is in place: "In-tolerance if User=A1028 and CR code=1 unless AT code=5." Before IntervalMAX can make use of the data in this case, some preconditioning must be exercised to develop the Service History file prior to IntervalMAX data input to convert the appearance of User=A1028 + CR=1 UNLESS AT=5 into a specific code designation, e.g., "1". The same applies to other fields, in particular those that signify that an adjustment, repair or maintenance action was taken or whether a particular transaction was purely administrative and can be ignored.

Usable Service History Data Formats

The data shown in the table below provide an example of the basic service history data format that IntervalMAX can work with. The minimum number of fields required for analysis are included. Other fields, required to exercise IntervalMAX's full potential (see **Service History Fields**), are excluded.

Manufacturer	Model Number	Serial Number	Control Number	Date Received	Date Serviced	Noun name	Condition Received	Renewal Action
CASELLA	T9154/C	003233	08603	2/7/90	2/7/90	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	8/21/90	8/21/90	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	3/18/91	3/18/91	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	9/25/91	9/25/91	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	3/30/92	3/30/92	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	10/3/92	10/3/92	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	4/16/93	4/16/93	THERMOHYGROGRAPH	OOT	adjust
CASELLA	T9154/C	003233	08603	4/16/93	4/16/93	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	11/4/93	11/4/93	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	5/26/94	5/26/94	THERMOHYGROGRAPH	in tol	no adjust
CASELLA	T9154/C	003233	08603	12/9/94	12/9/94	THERMOHYGROGRAPH	OOT	repaired
CASELLA	T9154/C	003233	08603	9/30/95	9/30/95	THERMOHYGROGRAPH	in tol	no adjust
DATA PRECISION	8200	2160A	05930	1/30/92	1/30/92	DC CALIBRATOR	in tol	no adjust
DATA PRECISION	8200	2160A	05930	8/9/92	8/9/92	DC CALIBRATOR	in tol	no adjust
DATA PRECISION	8200	2160A	05930	2/25/93	2/25/93	DC CALIBRATOR	in tol	no adjust
DATA PRECISION	8200	2160A	05930	7/19/94	7/19/94	DC CALIBRATOR	in tol	no adjust

Unusable Formats

IntervalMAX cannot make use of "summarized" service histories in which the history for each item is presented as conditions received and actions taken, accompanied by summary numbers of occurrences. An example of such a format is shown in the table below.

Manufacturer / Model	Instrument ID	Equipment Status (last six certifications)			
		Complies with Specifications	*Calibrated*	*Out of Tolerance and Calibrated*	*Out of Service*
Aschcroft					
	RXLDP				
	GEL1-100		5	1	
	GEL1-101	2	4		
	GEL2-200	1	5		
	GEL3-302	1	4	1	
	XLDP				
	GEL2-201	2	3		1
	GEL3-301	1	4	1	
	GEL4-400	3	2	1	
5	GEL4-401	1	4		
	GEL5-500		4	2	
	GEL5-501	1	3	2	
	GEL6-600		6		
	GEL7-700		6		
	GEL7-701		6		
	GEL8-800	1	4	1	
	GEL8-801	1	4	1	

Inventory Data

IntervalMAX can write the results of interval analysis to designated files, databases or database tables, referred to as the **Inventory Data Files**. IntervalMAX can accommodate serial number, model number, similar equipment group and instrument class level inventory files.

Each record of an Inventory Data File is comprised of the information for each inventory element. For example, a record in a serial number Inventory Data File provides information for a specific serial numbered item. Likewise, a record in a model number Inventory Data File provides information for a specific manufacturer/model.

The specific data fields needed in each Inventory File are described later in this document.

Recommended Import/Export Architecture

IntervalMAX users have found the import/export architecture depicted below to be optimal

As the graphic shows, this architecture includes the Service History File and the Inventory File. Since these files are external to IntervalMAX they are also referred to as “holding tanks.” Both contain information obtained from the corporate Calibration Data Management System.

Data from the Service History Data holding tank are imported by IntervalMAX and accumulated in a table called the *Cumulative History Table*. These data are analyzed by IntervalMAX, resulting in recommended calibration intervals and other output. The recommended intervals are exported by IntervalMAX to the appropriate Inventory holding tank. Other output is available through various IntervalMAX reports.

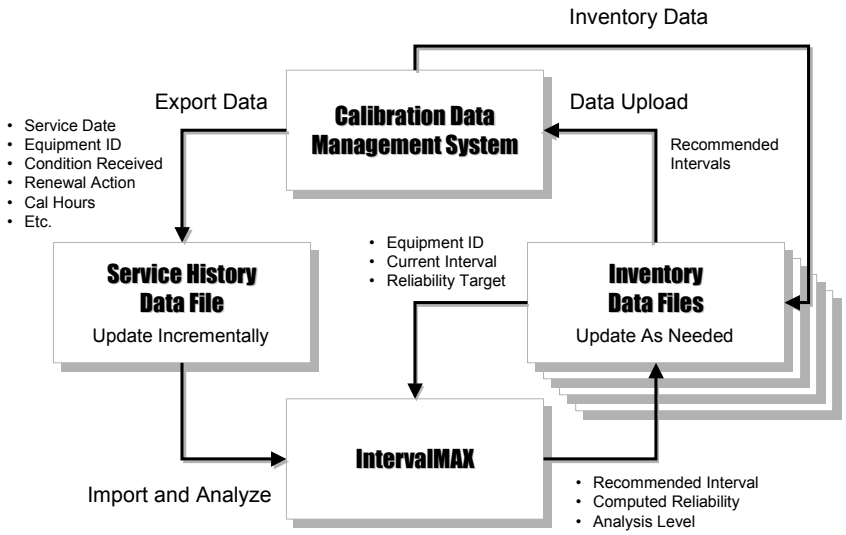

Figure 1. **Recommended IntervalMax Import/Export Architecture**. Calibration service history and inventory file data reside in intermediate "holding tanks." IntervalMAX imports history data for analysis. Recommended intervals are compared with current intervals in inventory during engineering review and in Method A3 interval testing. Approved intervals are written to the appropriate inventory file(s).

One advantage of the above architecture is that data are exported from and uploaded into the Corporate Data Management System at the user's discretion. Another principal advantages is that the Calibration Data Management System is buffered from IntervalMAX, that is, nothing is written directly by IntervalMAX to the system that manages equipment ID, status, recall cycles, etc.

Importing Service History Data

Using service history records, IntervalMAX assembles what is called a Resubmission Time Series such as the following

Example Resubmission Time Series

Weeks Between Calibrations	Number Calibrated	Number Observed In-Tolerance	Measurement Reliability
1-2	0	0	0
2-4	4	4	1.0000
5-7	6	5	0.83333
8-10	14	9	0.6429
11-13	13	8	0.6154
19-21	22	12	0.5455
26-28	49	20	0.4082
37-40	18	9	0.5000
48-51	6	2	0.3333

IntervalMAX uses observed measurement reliabilities and times elapsed between calibrations to develop a functional relationship between in-tolerance probability and time since calibration. Once this relationship is established, IntervalMAX computes a calibration interval whose computed reliability is set equal to a user-defined reliability target.

Resubmission Time Series are assembled for each manufacturer/model, similar equipment group and instrument class in the IntervalMAX database. To assemble a Resubmission Time Series, IntervalMAX needs to be able to track and compile the service history of each individual item.

Import Profiles

Setting up IntervalMAX to import calibration service history from an external file or table requires the development of an Import Profile. IntervalMAX can accommodate more than one profile, if desired. Profiles are accessed through the **Import Configuration** screen, shown below.

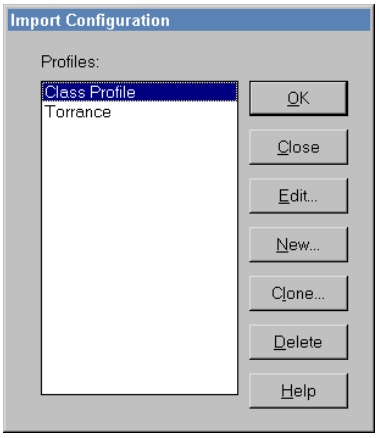

Figure 2. **Import Configuration**. Alternative import configurations can be created, edited, deleted or cloned.

Clicking the **New**, **Edit** or **Clone** button calls up the **Edit Import Profile** screen. The screen has two parts: **Profile Data** and **Field Definitions**.

Profile Data

Each Import Profile links the data in an External File to the fields in IntervalMAX. Defining an Import Profile involves entering a **Profile Name** for the Import Configuration; specifying the **Database Type**, entering the name and location of the **External Data File** to be imported; specifying the **Record Source** that contains the data; and creating the appropriate **Connect String** that applies to the format of the External File.

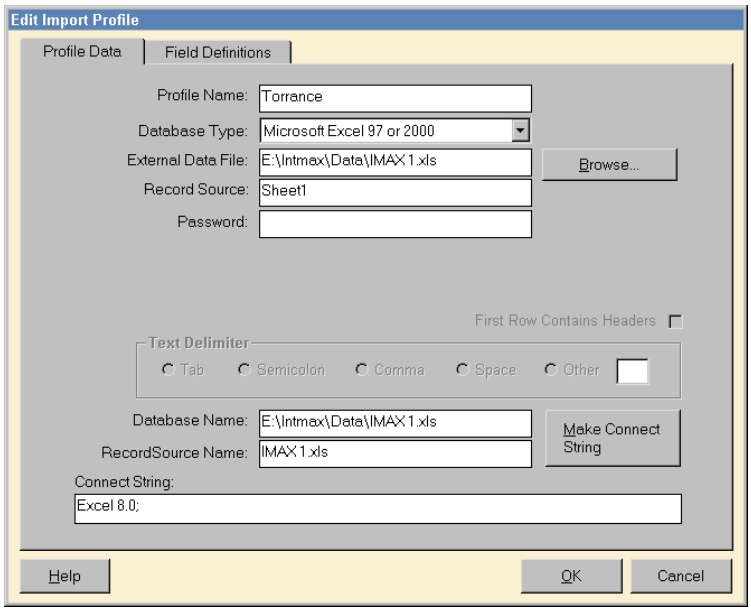

Figure 3. **Import Profile Setup**. Information needed to connect to the service history file, table or database is entered here.

Database Type

This entry indicates the type of database or file holding the data to be imported. The types of databases and files that can be accessed by IntervalMAX are:

Microsoft Access 2000 and earlier
dBase III and IV
Microsoft Excel 3.0 and 4.0
Microsoft Excel 5.0 and 95
Microsoft Excel 97 and 2000
Lotus 1-2-3 WK1
Lotus 1-2-3 WK3
Lotus 1-2-3 WK4
HTML
Delimited Text
ODBC.

Accessing ODBC databases, such as SQL Server, Oracle or FoxPro requires a format-specific ODBC driver. ODBC drivers can usually be obtained from the manufacturer of the database in question.

External Data File

The External Data File specifies the Name and Location of the External File.

Record Source

The name of the Record Source of the External Data File that contains the data to be imported varies with Database Type. For example, with dBase, Excel 3.0, Excel 4.0, Lotus and Text File formats, the Record Source has the same name as the External Data File. In these cases, it is handled by IntervalMAX internally.

With Microsoft Access formats, the name of the Record Source is the name of either a Table or a Query within the database. For Excel 5.0 and higher, it is the name of the Worksheet containing the data to be imported. For HTML imports, it is the name of the page containing the data to be imported.

For imports using ODBC drivers, the name of the Record Source depends on the specific driver.

Connect String

The Connect String is a key that participates in unlocking access to the database or file containing the data to be imported. The Connect String is created by IntervalMAX for the selected Database Type when the **Make Connect String** button is pressed.

Field Definitions

Defining an Import Profile also involves cross-referencing External **Field Names** with IntervalMAX Field Names; matching External **Condition Received Codes** with IntervalMAX Condition Received Codes; and translating External **Renewal Action Codes** to IntervalMAX Renewal Action Codes.

Try Connect

Once the Import Profile has been established, IntervalMAX is ready to connect to the external data source. To establish the connection, click the **Try Connect** Button. This places fields of the external database in the **Available Names** window on the right of the Field Definitions tab.

Current Interval Units

In order to employ data in the Current Interval field, IntervalMAX must know whether entries are expressed in months, weeks or days. The appropriate units are implemented by selecting them from the dropdown list.

Linking Field Names

To enable IntervalMAX to interpret the data during import, it is necessary to link the external field names to the IntervalMAX field names. This is done by clicking each external field name and dragging it to the **External Field Names** box adjacent to the **IntervalMAX Field Names** box that corresponds to it. For

example, if, in the external data, the condition received of calibrated items has the field name **CR**, click on this field in the Available Names window and drag it to the box to the right of the IntervalMAX Field Name **Condition Received**.

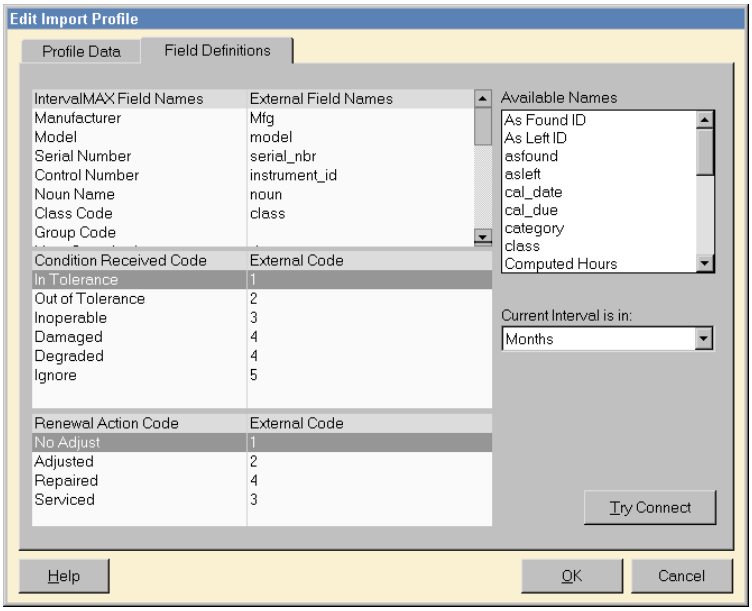

Figure 4. **Import Profile Definition**. Field names in the external service history file, table or database are cross-reference to IntervalMAX field names on this screen. In addition, the Condition Received and Renewal Action codes found in service history are entered next to their counterparts in IntervalMAX.

Linking Data Codes

Most organizations that accumulate calibration history data employ codes for describing condition received, action taken, equipment status, etc. IntervalMAX needs to be able to interpret these codes in order to perform interval analysis and other related analyses. This interpretation is made possible by linking the codes in the external data to the code fields in IntervalMAX. This is done by entering each relevant external code in the appropriate **External Code** box on the Edit Import Profile screen.

Specifically, IntervalMAX needs to know the condition each item was in when it was received for service and what was done to the item during service. For this reason there are two sets of External Code links: **Condition Received** and **Renewal Action**.

The profile shown above is one in which data are to be imported into IntervalMAX from a dBASE III database. Cross-referencing the external fields to the IntervalMAX designations is done by dragging entries in the **Available Names** list to the **External Fields** column of the first table.

Cross-referencing **Condition Received** and **Renewal Action** codes is done by typing the appropriate entry for each condition or action. The only restriction on such entries is that they match the corresponding entries in the service history to be imported.

Condition Received refers to the state of an item as received for testing or calibration. The Condition Received indicates the in- or out-of-tolerance status of the item during use. The emphasis on the state of the item during use is important. More is said about this point in the discussion on **user detectability**. The Condition Received designators are defined as follows:

In-Tolerance

The measured values of all parameters tested or calibrated were found to be within specification limits.

Out-of-Tolerance

One or more of the measured values of the parameters tested or calibrated were found to lie outside specification limits.

Inoperable

The item was received for testing or calibration in an inoperable condition.

Damaged

The item was received for testing or calibration in an operable condition but suffered apparent damage since its last testing or calibration service. "Damage" in this context refers to any physical deficiency that may have an affect on the in- or out-of-tolerance state of the item.

Degraded

The item was received for testing or calibration in an in-tolerance state and in an operable condition but with some degradation of performance requiring maintenance or repair.

Ignore

The item was received for calibration under circumstances that indicate that the time elapsed since the prior testing or calibration service should be ignored. An example is a case where a calibrated item is re-calibrated after removal from preservative storage (e.g., vacuum sealed and temperature controlled).

Renewal Action indicates the type of service rendered to an item received for testing, calibration or other service. The term "Renewal" refers to the extent to which the parameters of an item are adjusted, repaired or otherwise corrected to their nominal values. The Renewal Action designators are defined as follows:

No Adjust

No adjustments or corrections (hardware or software) were made that would affect the in- or out-of-tolerance state of any parameter tested or calibrated.

Adjusted

Adjustments or corrections (hardware or software) were made that would affect the in- or out-of-tolerance state of one or more parameters tested or calibrated. **Example**: Adjustment of a precision balance to correct for bias.

Repaired

Physical repair or maintenance was applied to the item that may affect the in- or out-of-tolerance state of one or more of its tested or calibrated parameters. **Example**: Cleaning of electrical contacts that would affect output or sensitivity level.

Serviced

No adjustments or other corrections were made that would change the values of parameters tested or calibrated. Physical repair or maintenance was applied to the item that would have no impact on the in- or out-of-tolerance state of one or more of its tested or calibrated parameters. **Example**: Replacement of a blown fuse with no other corrective action taken.

Service History Fields

The fields that can be imported into IntervalMAX are the following:

Name	Type	Size
Manufacturer	Text	60
Model	Text	40
Serial Number	Text	20
Date Received	Date/Time	8
Control Number	Text	50
Noun Name	Text	120
Measurement Area	Text	20
Class Code	Text	20
Group Code	Text	20
User Organization	Text	10
User Location	Text	20
Cal Organization	Text	10

Service Date	Date/Time	8
Condition Received	Text	2
Renewal Action Code	Text	1
Current Interval	Long Integer	4
Cal Hours	Single	4
Hourly Rate	Currency	8
Materials	Currency	8
Project	Text	20
Technician	Text	20
Noun Code	Text	10
Acquisition Value	Currency	8

These fields can be segregated into two sets: Required Fields and Supplemental Fields.

Required Fields

The required fields for each service action are

Field	Description
Manufacturer	Manufacturer or producer of the item serviced.
Model	Model number designator for the item serviced.
Serial Number	Serial number designator for the item serviced. Usually set by the manufacturer.
Control Number	Unique, non-transferable, identifying number for the item serviced.
Date Received	Date at which the item was received for service.
Service Date	Date at which service was performed.
Condition Received	Condition of the item as received for service.
Renewal Action Code	A code indicating any corrective or preventive action during service.

Supplemental Fields

In addition to fields required for interval analysis, other fields are used for supplemental analysis or to extend the results of interval analysis to cover a wider range of items in inventory. Supplemental fields are

Field	Description
Noun Name[1]	A standardized description of the item serviced.
Noun Code[2]	A unique code corresponding to a Noun Name.
Class Code	A designator subdividing a noun name grouping into low, medium and high acquisition value. Used to develop intervals for manufacturer/models with sparse data.
Group Code	A designator for the serviced item indicating membership in a similar equipment grouping. Used to develop intervals for manufacturer/models with sparse data. Since similar equipment groups are more homogeneous that instrument classes, Group intervals are considered more representative than Class intervals.
User Organization	The organization using the serviced item. Used primarily to identify outliers.
User Location	The location of the User Organization.
Cal Organization	The organization performing the calibration service. Used primarily to identify outliers.
Current Interval	The calibration interval of the item as received for service.
Cal Hours	The hours required for service. Used in developing the Interval Impact Report.[3]
Hourly Rate	The hourly service rate. Used in developing the Interval Impact Report.
Materials Cost	The cost of materials incurred during service. Used in developing the Interval Impact Report.
Project	The project to which the serviced item is assigned.
Technician	The identity of the servicing technician. Used to identify outliers.
Acquisition Value	The cost of the item normalized to current dollars. Useful for developing Class Codes.

Exporting Recommended Intervals and Related Data

IntervalMAX can export the results of an interval analysis directly to **Inventory Data Files**. We recommend either (1) the creation of dedicated inventory files or tables for IntervalMAX use or (2) the

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[1] This "supplemental" field is almost a necessity. If a Class Code is not available, it can be used to create classes that significantly extend the range of items for which IntervalMAX can determine an interval.

[2] Like the Noun Name, the Noun Code is useful in developing instrument classes. For instance, if the noun code for the Noun Name “Multimeters, Digital” is 13872, the Class Code for high-priced digital multimeters could be something like 13872H. If each item in the service history already has an assigned Class Code, the Noun Code is not needed for this purpose.

[3] The Interval Impact Report compares current cost and workload against projected cost and workload, the latter based on the assumption that IntervalMAX recommended intervals will be assigned.

addition of certain fields to existing inventory files or tables. The necessary fields are shown under Field Definitions below.

Export Profile

Before intervals can be exported, an Export Profile must be created using the **External Interval Assignment Setup** screens. The setup screen for a serial number export is shown below. Other screens are available for exporting to model number, similar equipment group or instrument class inventories. There are two parts to this screen: **Connection Data** and **Field Definitions**.

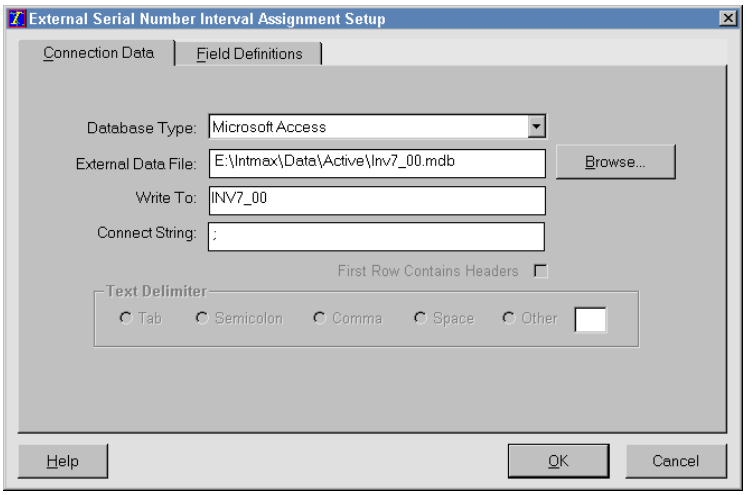

Figure 5. **Export Profile Setup**. Information needed to connect to the an inventory table or database is entered here.

Connection Data

The Export Profile links the fields in IntervalMAX to the fields in an External File. Defining an Export Profile involves selecting a **Database Type**, entering the name and location of the **External Data File** to be imported; specifying the **Write To** location that will receive the data; and creating the appropriate **Connect String** that applies to the format of the External File.

Database Type

This entry indicates the type of database or file to load the interval analysis results into. Currently, the types of databases and files that can be exported to by IntervalMAX are:

Microsoft Access 2000 and earlier
dBase III and IV
ODBC.

External Data File

The External Data File specifies the Name and Location of the database receiving the exported data.

Write To

The name of the location of the External Data File that will receive the data to be exported varies with Database Type. For example, with dBase, the location has the same name as the External Data File. In these cases, it is handled by IntervalMAX internally. With Microsoft Access formats, the name of the Record Source is the name of either a Table or a Query within the database. For exports using ODBC drivers, the name of the Write To location depends on the specific database.

Connect String

The Connect String is the key that participates in unlocking access to the database or file to receive the data. The Connect String is created by IntervalMAX for the selected Database Type when the **Make Connect String** button is pressed.

Field Definitions

Defining an Export Profile involves cross-referencing External **Field Names** with IntervalMAX Field Names. The Field Definitions tab for a serial number export is shown here.

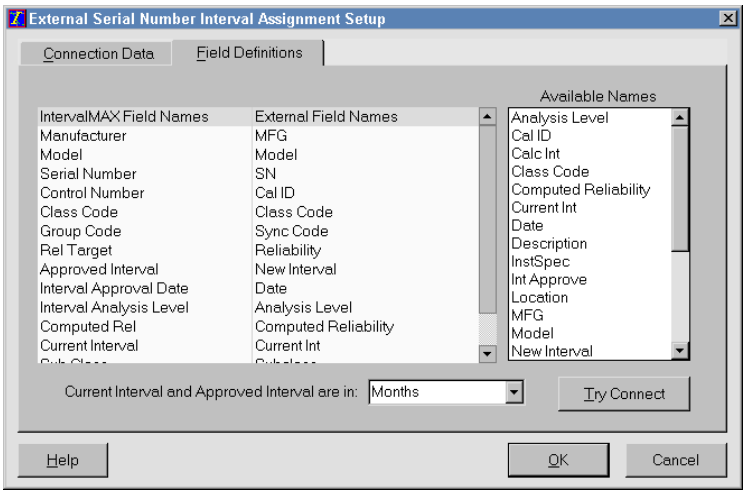

Figure 6. **Export Profile Definition**. Field names in an external inventory table or database are cross-reference to IntervalMAX field names on this screen.

Try Connect

Once the Export Profile has been established, IntervalMAX is ready to connect to the external data source. To establish the connection, click the **Try Connect** Button. This places fields of the external database in the **Available Names** window on the right of the Field Definitions tab.

Current Interval Units

In order to write intervals data in the Recommended Calibration Interval field, IntervalMAX must know whether entries are expressed in months, weeks or days. The appropriate units are implemented by selecting them from the dropdown list.

Linking Field Names

To enable IntervalMAX to place the data during export, it is necessary to link the external field names to the IntervalMAX field names. This is done by clicking each external field name and dragging it to the **External Field Names** box adjacent to the **IntervalMAX Field Names** box that corresponds to it. For example, if, in the external data, the manufacturer of an item has the field name **MFG**, click on this field in the Available Names window and drag it to the box to the right of the IntervalMAX Field Name **Manufacturer**.

Inventory File Fields

Serial Number Exports

The serial number external fields that IntervalMAX can write to are shown in the Table below.

Name	Type	Size
Class Code	Text	20
Sub Class	Integer	2
Group Code	Text	20
Sub Group	Integer	2
Approved Interval	Long Integer	4
Interval Approval Date	Date/Time	8
Interval Analysis Level	Text	4
Computed Reliability	Single	4

Other fields that should be included in the inventory file or table are

Name	Type	Size
Manufacturer	Text	60
Model Number	Text	40
Serial Number	Text	20
Control Number	Text	20
Current Interval	Long Integer	4
Noun Name	Text	120
Acquisition Value	Single	4
Reliability Target[4]	Single	4
Engr ID	Text	20

The fields in these tables that have not been previously defined are the following:

Field	Description
Sub Class	A statistically homogeneous subclass of an instrument class. Sub Classes are developed within IntervalMAX using a statistical testing procedure.
Sub Group	A statistically homogeneous subgroup of a similar equipment group. Sub Groups are developed within IntervalMAX using a statistical testing procedure.
Recommended Interval	The calibration interval computed by IntervalMAX. This may be a serial number interval, model number interval, Sub Group interval or Sub Class interval. The decision as to which interval to recommend is made within IntervalMAX in accordance with an interval selection hierarchy.
Analysis Level	The analysis level (serial number, model number, etc.) corresponding to the Recommended Interval.
Reliability Target	The desired end-of-period in-tolerance probability. In the inventory file or table, this target is entered for each serial numbered item. If an individual target is different from the reliability target used by IntervalMAX to compute the Recommended Interval, IntervalMAX will use the unique target and recompute the interval for the serial numbered item in question.
Interval Approval Date	The date at which the Recommended Interval was approved within IntervalMAX.
Computed Reliability	The projected end-of-period in-tolerance probability. This will usually be the same as or close to the reliability target. Exceptions occur if intervals are the result of an Engineering Override.
Current Interval	The calibration interval currently in effect in the recall system.
Condition Received	Condition of the item as received for service.
Renewal Action Code	A code indicating any corrective or preventive action during service.
Engr ID	An identification of the individual approving and overriding recommended intervals.

Model Number Exports

The external fields that IntervalMAX can write to a manufacturer/model inventory file or table are the following

Name	Type	Size
Manufacturer	Text	60
Model Number	Text	40
Group Code	Text	20
Sub Group	Integer	2
Class Code	Text	20
Sub Class	Integer	2
Approved Interval	Long Integer	4
Interval Approval Date	Date/Time	8
Interval Analysis Level	Text	4
Computed Reliability	Single	4

[4] If an individual Reliability Target has been entered in the inventory file or table, IntervalMAX will use it in place of the reliability target used to compute the Recommended Interval. If a Reliability Target is not specified in the inventory file or table, IntervalMAX will write the target used.

Other fields that IntervalMAX can reference and should be included in the inventory file or table are

Name	Type	Size
Current Interval	Long Integer	4
Reliability Target[5]	Single	4
Num Items	Long Integer	4
Engr ID	Text	20

The field in this table that has not been previously defined is the following:

Field	Description
Num Items	The number of individual serial number items within a manufacturer/model that are assigned an interval developed using IntervalMAX.

Similar Equipment Group Exports

The external fields that IntervalMAX can write to a Group level inventory are the following

Name	Type	Size
Group Code	Text	20
Class Code	Text	20
Sub Class	Integer	2
Approved Interval	Long Integer	4
Interval Approval Date	Date/Time	8
Interval Analysis Level	Text	4
Computed Reliability	Single	4

Other fields that IntervalMAX can reference and should be included in the inventory file or table are

Name	Type	Size
Current Interval	Long Integer	4
Reliability Target[6]	Single	4
Num Items	Long Integer	4
Engr ID	Text	20

For Group level exports, the Num Items field is defined as:

Field	Description
Num Items	The number of individual serial number items within a Similar Equipment Group that are assigned an interval developed using IntervalMAX.

Instrument Class Exports

The external fields that IntervalMAX can write to are the following

Name	Type	Size
Class Code	Text	20
Approved Interval	Long Integer	4
Interval Approval Date	Date/Time	8
Interval Analysis Level	Text	4
Computed Reliability	Single	4

Other fields that IntervalMAX can reference and should be included in the inventory file or table are

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[5] If a class-level Reliability Target has been entered in the inventory file or table, IntervalMAX will use it in place of the default reliability target used to compute the Recommended Interval. If a Reliability Target is not specified in the inventory file or table, IntervalMAX will write the interval for the default target.

[6] If a class-level Reliability Target has been entered in the inventory file or table, IntervalMAX will use it in place of the default reliability target used to compute the Recommended Interval. If a Reliability Target is not specified in the inventory file or table, IntervalMAX will write the interval for the default target.

Name	Type	Size
Current Interval	Long Integer	4
Reliability Target[7]	Single	4
Num Items	Long Integer	4
Engr ID	Text	20

For Class level exports, the Num Items field is defined as:

Field	Description
Num Items	The number of individual serial number items within an Instrument Class that are assigned an interval developed using IntervalMAX.

Other Output

IntervalMAX provides reports on analysis results that encompass a wide range of management objectives. Reports may be printed or exported to designated files. Report export is available to the System Administrator only.

Instrument Class Interval Report

The results of interval analysis at the Instrument Class level.

Similar Equipment Group Interval Report

The results of analysis for user-defined groupings of similar equipment.

Model Number Interval Report

The results of interval analysis at the Manufacturer/Model level.

Serial Number Interval Report

The results of interval analysis at the Serial Number level.

Interval Impact Report

The potential impact of assigning current intervals in terms of workload and test/calibration cost.

Serial Number Dogs and Gems

Serial Numbered items with significantly high or low out-of-tolerance rates relative to other Serial Numbers of the same Manufacturer/Model Number.

Model Number Dogs and Gems

Manufacturer/Model Numbers with significantly high or low out-of-tolerance rates relative to other Model Numbers in the same Instrument Class.

Suspect Using Organizations

Users whose calibration results indicate a significantly high out-of-tolerance rate for items in common with other users.

Suspect Calibrating Organizations

Test or calibrating organizations reporting out-of-tolerance rates that are significantly high relative to other organizations that service similar workload items.

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[7] If a class-level Reliability Target has been entered in the inventory file or table, IntervalMAX will use it in place of the default reliability target used to compute the Recommended Interval. If a Reliability Target is not specified in the inventory file or table, IntervalMAX will write the interval for the default target.

Suspect Calibrating Technicians

Test or calibrating technicians reporting out-of-tolerance rates that are significantly high relative to other technicians that service similar workload items.

Class Technical Data Report

Statistical and related information on the results of interval analysis at the Instrument Class Level.

Similar Equipment Group Technical Data Report

Statistical and related information on the results of interval analysis for analyses of user-defined Similar Equipment Groups.

Model Technical Data Report

Statistical and related information on the results of interval analysis at the Manufacturer/Model Level.

System Evaluation Report

A self-assessment feature that compares recommended intervals against observed calibration results to evaluate whether system projections match actual performance.

Note: Access to the Interval Impact, Suspect Using Organization, Suspect Calibrating Organization, Suspect Calibrating Technician, and System Evaluation reports is restricted to the System Administrator.