MET/BASE Version 6.0 July 1999

This file contains information about the Version 6 release of MET/BASE and contains the following sections:

What's New in V6.0?

What's Changed?

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What's New in V6.0?

32-Bit Software

All of the major MET/CAL applications are now 32-bit applications. The major applications are:

- DB Setup
- Editor
- Install
- Manual Entry
- Run Time

These applications will run under Win95, Win98, and WinNT. They will not run under Win31.

Win2000 will be supported when it is officially released.

Measurement Uncertainty

MET/CAL V6.0 enables compliance with ISO 17025 by providing the ability to calculate measurement uncertainty for each (numeric) test evaluation step.

The calculation is, by default, disabled.

Refer to the on-line help for the VSET FSC for additional information about the measurement uncertainty calculation. (Note: Start by reading the information about the "NMEAS" parameter.)

17025 Compliance

In addition to the measurement uncertainty, V6.0 also includes a new "Customer Table" feature. This allows a customer name to be associated with an asset. The name may be printed on a cal report or certificate.

New Drivers

Many FCS have been added to this release. MET/CAL now supports the following instruments:

- GHz Option for 5800A and 5820A
- Fluke 5820A

- HP 437B Power Meter and EPM-441A in 437B emulation mode
- HP 5335A Universal Counter
- HP 8648A/B/C/D RF Signal Generators
- HP 8901A/B Modulation Analyzers
- HP 8902A Measuring Receiver
- HP 8903B Audio Analyzer and 8903E Distortion Analyzer
- Marconi 2023 and 2024 RF Signal Generators
- Rhode & Schwartz SMY01, SMY02, and SMY43 RF Signal Generators
- HP 8560A/E, 8561A/B/E, 8562A/B/E, 8563A/E, 8564E, and 8565E Spectrum Analyzers (peak search)
- HP 8566B, 8568B, 8590E/L Spectrum Analyzer (peak search)

Please consult the help files in the editor for more information.

Using 5800A-Based Procedures with a 5820A.

In V6.0, procedures written for the Fluke 5800A may be used without modification with a Fluke 5820A. This capability takes effect only when:

(1) a Fluke 5820A is configured and,

(2) a Fluke 5800A is not configured.

Using 5700A-Based Procedures with a 5720A.

In V6.0, procedures written for the Fluke 5700A may be used without modification with a Fluke 5720A. This capability takes effect only when:

(1) a Fluke 5720A is configured and,

(2) a Fluke 5700A is not configured.

New MATH FSC Functions

The following new functions have been added to the MATH FSC. Refer to the on-line help file for complete information.

- DATE - returns current date in specified format
- DFILE - returns path name of DOS/DOSE data file
- GETV - returns value of specified variable from MET/CAL variable file
- IFILE - returns path name of MET/CAL initialization file
- INI - retrieve specified parameter value from MET/CAL initialization file
- PUTV - write value of specified variable to MET/CAL variable file

VSET FSC

The VSET FSC is a general purpose FSC used to assign values to system parameters. In V6.0 most supported parameters are related to the measurement uncertainty calculation.
Refer to the on-line help for VSET for more information.

Abeyance

Abeyance is typically used for a mechanical asset. The asset is calibrated, and then put into a special room where it stays until it is used.

See Abeyance in Chapter 8 of the Users Manual on page 8-19.

Run Time Purge Asset

This feature has been added to provide a function that was available in legacy mode: one-shot calibrations where the lab believes they will never see the UUT again.

Asset and calibration data can now be purged at the end of a calibration run. This allows users to calibrate a UUT, print a cert., and then remove all information about the UUT. This feature only works for assets that have no history; i.e. the asset has an inventory record and a single calibration record. If an asset has more than one calibration history or any location or maintenance history, it can not be purged from the run time.

User Fields

More fields have been added to the inventory, calibration and location forms. The alphanumeric are 48 chars long and the numbers have 2 places after decimal point.

Inventory: 6 alphanumeric, 4 dates, and 4 numbers.

Calibration: 7 alphanumeric, 4 dates, and 5 numbers.

Location: 10 alphanumeric, 4 dates, and 4 numbers.

Run Time Shows Inventory Table Field in Pre- and Post-Prompt Dialogs

The Run Time has been modified so that Inventory Table fields can be included in the pre- and post-prompt dialogs, but only in a read-only mode, and only when the initialization value for the field is read from the database.

To make this work put lines like:

Manufacturer :RD: MFG$ 4202

in the "promptdb.txt" file.

Notice that the attribute field is ":RD:". The ’R’ means read-only. The ’D’ means fetch the field value from the database and use it to initialize the edit control in the prompt dialog. For inventory table fields, an error message will be generated if either the ’R’ or the ’D’ is omitted.

Multi-Part Calibration

It is now possible to perform a calibration in parts, and then use the Manual Entry application to combine the parts into a single calibration event.
When the parts are combined, the user has the option of deleting the component parts. Refer to the User’s Manual, page 3-9 for complete information.

System Error Log

The metcal.ini file now contains the error_log parameter. The parameter points to a text file that MET/BASE errors are written to during execution. If you are experiencing problems, printing out this file will be helpful when you call MET/SUPPORT. In the [startup] section of the ini file, look for the parameter error_log. Then print out the file indicated. For example:

```
error_log  = c:\metcal\errors.txt
```

Picture Conversion

Customers upgrading from DOS MET/CAL (V3.1 or earlier) to MET/CAL V6.0 can use the stand-alone program "pcxtobmp.exe" to convert their PCX format PIC files to BMP format.

What's Changed?

Legacy Mode

This version only supports the "database" mode; the legacy mode is no longer supported. Unfortunately, Ziatech has chosen not to support Win32, so Ziatech boards do not work with version 6

New Install Program

The MET/BASE Install program has been redesigned using InstallShield.

Manual Entry and Query Merged

The Manual Entry and Query applications have been merged. Query is now equivalent to the read-only mode of Manual Entry.

4-Digit Years

All applications now use a 4-digit year representation.

Time Stamps Include Seconds

Time stamps on cal events stored in the database are now accurate to the second. Previously, the resolution was only to the nearest minute.

Crystal Reports 7.0

MET/BASE V6.0 ships with, and uses, V7.0 of Crystal Reports. All reports shipped with V6.0 have been updated and improved.

Run Time Configuration

It is now possible to use the Run Time application to configure:

- Instruments
- IEEE-488 Boards
- Default Serial Port
- Fonts
- Post Run Dialog
- Post Run Macros
- Post Run Reports

Previously these capabilities were available in the Editor or Administrator applications.

Run Time Slew Dialog

The Run Time Slew dialog now allows the arrow keys to be used to slew the calibrator output.

Procedure Management

Procedure management functions which previously were part of the MET/CAL "Administrator" application are now part of the Editor.

"Hide Procedures" has been moved to the Editor's "File" menu.

"Copy Procedures" and "Delete Procedures" are not fully integrated into the Editor, but are invoked from the Editor's "Tools" menu.

Stored Procedures in V6.0

Many new stored procedures have been written to simplify reporting of information in the database. See Chapter 5 pages 5-23 and 5-24 in the Users Manual for stored procedure descriptions.

Validation Information

Validation information is now stored in the database. It is not longer stored in external validation files. See page 8-30 in the Users Manual.

Holiday Information

Holiday information is now stored in the database. It is no longer in an external file. See non-due days on page 8-14 in the Users Manual.

5100B Driver Correction

The 5100 driver has been modified to use the programmed value instead of the center display value when the units are decibels. Previously, the System Actual value was incorrectly reported for 5100 dBm output when in 8506 enhanced mode.

Import Tool

The Import Tool can now import to multiple tables and has improved input data checking.

Fields not computed until save

The calculated fields on the calibration and maintenance screens are not computed until the record is saved. For example, if you have time values in tech time 1 and time 2 on the calibration form, the total time will not be computed and displayed until the record is saved.

Search results displayed much faster

Performing a search in the Manual Entry tool is now much faster than in previous versions. The first record of the search will now be displayed immediately, regardless of the number of matches to the search. However, the total number of search matches will not be known when the first record is displayed. To determine the total number of matches, go to the last record of the search. This forces the counting of all matches to the search criteria.

Asset number read-only

The asset number is now read-only on the Inventory screen. To change an asset number, select "record" then "renumber asset" on the inventory form. Making the asset number field read-only enhances database integrity and reduces locking problems in the database.

Known Problems

5535

Reports from V6.0 beta testers indicate that there may be a problem with the 5335 and M5335 FSCs. These FSCs may not work with HP 5335A V1.0 firmware. They have been tested only with V1.1 firmware. The problem is being investigated. (If you experience a 5335A-related problem, you may wish to contact MET/SUPPORT to see if an updated version is available.)

Import of Multiple Records to a Single Asset

At present, multiple records cannot be reliably imported for a single asset during a single execution of the import tool. This is because the TAG value must be a unique number that is assigned to the event using two pieces of information, the asset MTAG and the time of entry into the database. Therefore two records imported within one second would cause a collision, which would result in the second record being rejected.

Late additions to the manual

Changes for the getting started guide

On page 4, bullet one, the statement (Refer to the installation and Upgrade Guide) is incorrect. It should say (Refer to the installation instructions in the National Instruments documentation that came with your IEEE-488 board).

Changes for the install manual

1. For upgrade users where Fluke Metrology Software is installed on a network. DBUPDATE must be executed from the server PC instead of a client workstation as advised by the Installation and Upgrade Guide. This is because access is required to the database files during execution, not just to the data via the database engine.

a) If the server computer does not have any client applications installed, use the client installation setup program which exists in the CLIENT sub-folder of the MET/BASE executable directory. Run SETUP.EXE from this directory. You may install any client application. This will set up the ODBC data source on the server and enable the DBUPDATE.EXE application to login to the database.

b) Execute DBUPDATE.EXE.

c) FOLLOW DBUPDATE INSTRUCTIONS CAREFULLY. Many of the instructions on the screen require specific user actions or the update may abort.

d) If you desire, the Fluke Metrology Software - Client Uninstall program may be run to remove the client from the server machine without affecting the operation of the server.

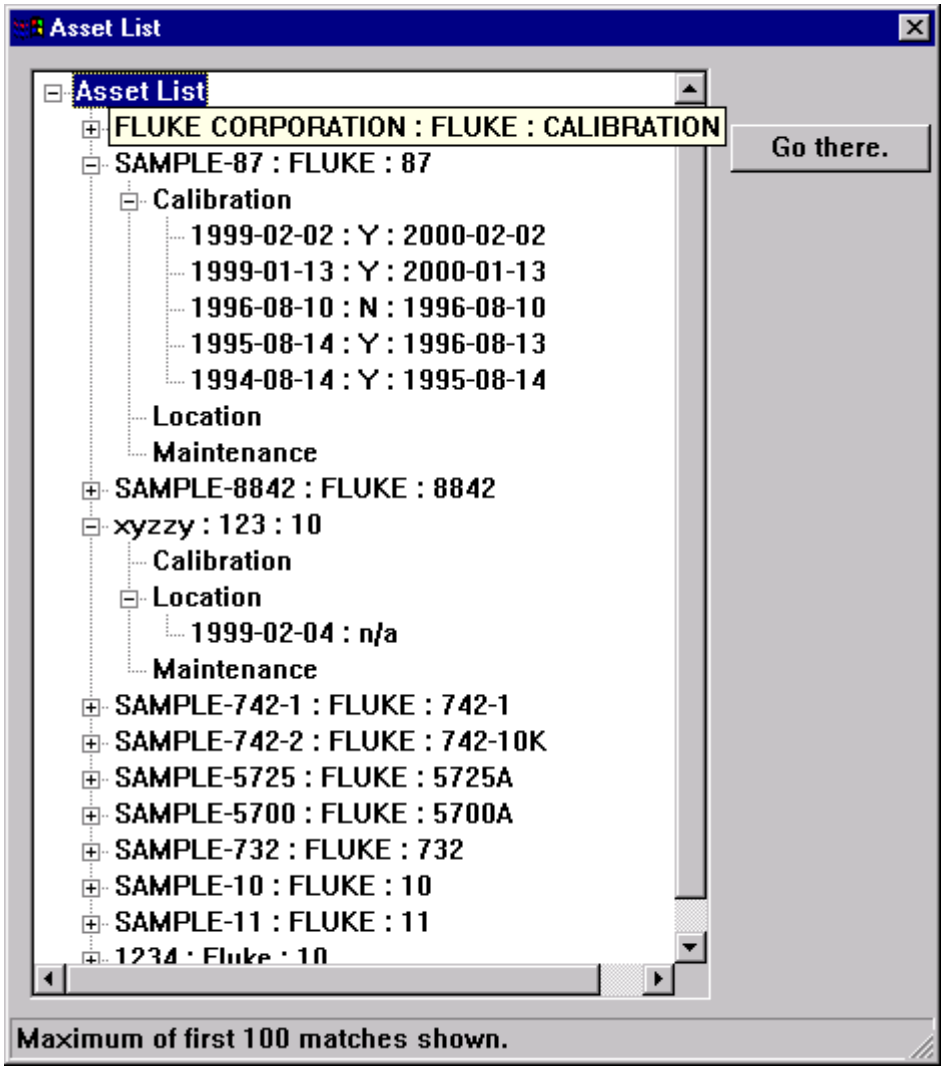
2. The Install and Upgrade Guide indicates that the language preference will be queried during the server installation. This has been changed to be asked only during the client installation to allow for different workstations on a single database to operate with different languages.

3. In the language preference selection dialog box, double-clicking a language is not an expected user interface as indicated by the manual. Use a single mouse click to select and de-select languages.

4. Mapping the shared MET/CAL executable is only required if it has not been accomplished during a previous installation. There is no advantage to redundantly mapping a network drive which is already mapped on a client workstation. The Installation and Upgrade Guide could be interpreted to suggest doing so.

Asset list

An example asset list is shown below. It shows up to the first 100 matches from the last search criteria. These assets can be expanded to view a summary of the calibration, location, and maintenance information for each asset. Highlighting an asset and selecting "go there" will bring up data for that asset.



Customer and asset association

Customers and assets can be associated with each other. On the inventory data entry form, a user can select the Customer off of the records menu. This brings up a list of customers. One customer can be associated with an asset. The Customer List screen shows a list of customers (similar to how the Asset List shows a list of assets) and all of the assets that belong to that customer.

Language Support field titles on data forms

The customization tool (dbsetup) now allows up to 5 titles for each data field. Only one set of titles is displayed on a workstation. To change the title set displayed, change the “titleset” parameter in the [database] section of the metcal.ini file to correspond to the titleset you want to use.

Run Time Self-Calibration Check

A new check has been added to the MET/CAL Run Time to guard against self-calibration, i.e., against the situation where the asset number of the UUT is the same as the asset number of a required calibration standard.

Previously, MET/CAL has always allowed this, but its validity is questionable.

There's also a new optional initialization file parameter named "self_cal" which can be set to one of three values: "yes", "no", and "warn". It goes in the [startup] section.

Omitting the parameter from the initialization file is equivalent to "self_cal = no".

Here's how the check works:

If "self_cal" is set to "yes":

The workstation is configured to unconditionally allow self-calibration. In that case no check is done, and it is ok to type in a UUT asset number that is the same as the asset number of a required calibration standard.

If "self_cal" is set to "no" or not specified:

The workstation is configured to unconditionally disallow self-calibration. If the UUT asset number is the same as the asset number of a required instrument, an error message is generated and procedure execution is terminated.

If "self_cal" is set to "warn":

The workstation is configured to conditionally allow self-calibration. If the UUT asset number is the same as the asset number of a required instrument, the operator is prompted to see if procedure execution should be continued or aborted.

V6.0 is shipped with no "self_cal" specification in the initialization file. I.e., it defaults to "no", and self-calibration is not allowed.

New Procedures

The following new calibration procedures are included with V6.0:

- ***Fluke 2620A, 2625A, and 2635A Hydra Series II***

Procedure type: Calibration Verification: RS-232 Closed-loop

Uses 5700A

or 5720A

or 5700A: IEEE-488 Closed-loop (2620A only)

or 5720A: IEEE-488 Closed-loop (2620A only)

- ***Fluke PM 2811, PM 2812, PM 2813, PM 2831, and PM 2832 Power Supplies***

Procedure type: Calibration Verification: IEEE-488 Closed-loop
Uses 5500A, 8842A, PM 3382

Procedure type: Calibration Adjustment: IEEE-488 Closed-loop
Uses 8842A

- ***Fluke PM 5139 Function Generator***

Procedure type: Calibration Verification: IEEE-488 Closed-loop
Uses 8901B, 8568B, 437B, 8842A, PM 3382A, PM 5192, PM 6680:

- ***Fluke PM 5190 Function Generator***

Procedure type: Calibration Verification: IEEE-488 Closed-loop
Uses 8901B, 8568B, 8842A, PM 3382A, PM 5192, PM 6680

- ***Fluke PM 5191, PM 5192, PM 5193 Function Generators***

Procedure type: Calibration Verification: IEEE-488 Closed-loop
Uses 8901B, 8568B, 437B, 8842A, PM 3382A, PM 5192, PM 6680

- ***Fluke PM 5712, PM 5715, PM 5781, PM 5786 Pulse Generators***

Procedure type: Calibration Verification: IEEE-488 Closed-loop
Uses PM 6680, PM 5192, 8842A, PM 3382

- ***Fluke PM 6303A, PM 6304, PM 6306 RCL Meters***

Procedure type: Calibration Verification: IEEE-488 Closed-loop
Uses PM 6680, 8842A

- ***Fluke PM 6662 Timer/Counter***

Procedure type: Calibration Verification
Uses 6060B

- ***Fluke PM 6665, and PM 6666 Timer/Counters***

Procedure type: Calibration Verification: IEEE-488 Closed-loop
Uses 6060B

- ***Gigatronix or Fluke 6060A RF Signal Generator***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  8902A, 8903B, PM 6680, 8560
or    8902A, 8903B, PM 6680, 8566B
or    8902A, 8903B, PM 6680, 8568B
```

- ***Philips PM 2320 Universal Switch Matrix***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  8842A
```

- ***Philips PM 2321 Low Level Scanner***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  8842A
```

- ***Tektronix 2465B Oscilloscope***

Procedure type: Calibration Verification

```
Uses  5500A+SC600
or    5520A+SC600
```

- ***Tektronix TDS 210 and TDS 220 Oscilloscopes***

Procedure type: Calibration Verification: Manual & RS-232 & IEEE-488 Closed-Loop

```
Uses  5500A+SC300
or    5520A+SC300
or    5500A+SC600
or    5520A+SC600
or    5800A
```

- ***Fluke PM 6680, PM 6680B, PM 6681, and PM 6685 Timer/Counter***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  8648D, 5500A, 8842A, PM 5191, PM 3382, PM 5781
or    8648D, 5520A, 8842A, PM 5191, PM 3382, PM 5781
```

Procedures not Included

The following procedures are not included with MET/BASE. They will be available from Fluke for an additional fee. Please call MET/SUPPORT for details.

- ***Fluke 32 Clamp Meter***

Procedure type: Calibration Verification

```
Uses  5500A
```

```
or    5520A
or    5700A, 5725A
```

Procedure type: Calibration Adjustment

```
Uses  5500A
or    5520A
or    5700A, 5725A
```

- ***Fluke 43 Power Quality Analyzer***

Procedure type: Calibration Verification: RS-232 Closed-Loop

```
Uses  5500A+SC300
or    5500A+SC600
or    5520A+SC300
or    5520A+SC600
```

Procedure type: Calibration Adjustment: RS-232 Closed-Loop

```
Uses  5500A+SC300
or    5500A+SC600
or    5520A+SC300
or    5520A+SC600
```

- ***Fluke 725 Multifunction Process Calibrator***

Procedure type: Calibration Verification: RS-232 Closed-Loop

```
Uses  5520A, 3458A
```

- ***Fluke 87/89 Series IV Multimeter***

Procedure type: Calibration Verification: RS-232 Closed-Loop

```
Uses  5520A
```

Procedure type: Calibration Adjustment: RS-232 Closed-Loop

```
Uses  5520A
```

- ***Hewlett-Packard 54810A, 54815A, 54820A, 54825A Infinium DSO***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  5500A+SC600, 34401A
or    5520A+SC600, 34401A
or    5800A, 34401A
or    5820A
```

- ***Hewlett-Packard 54845A Infinium DSO***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  5800A, 34401A
or    5820A
```

- ***Keithley 2001 Multimeter***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  5720A, 5725A
```

Procedure type: Calibration Adjustment: IEEE-488 Closed-loop

```
Uses  5720A
```

- ***Tektronix TDS 794D Oscilloscope***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  5800A
```

- ***Tektronix TDS 820 Oscilloscope***

Procedure type: Calibration Verification: IEEE-488 Closed-loop

```
Uses  5500A+SC600, HP 8648D, Tektronix 067-1338-00
or    5520A+SC600, HP 8648D, Tektronix 067-1338-00
or    5800A, HP 8648D, Tektronix 067-1338-00
```