

What's New in V5.1?

1. TARGET FSC

A new FSC, "TARGET", has been added to allow the procedure writer to specify the jump destination when the operator chooses "Repeat" or "Cancel" in the Post Test dialog. Please refer to the on-line help for the TARGET FSC for additional information.

2. RESET FSC

A new FSC, "RESET", has been added to allow the procedure writer to specify RESET commands for user-configured instruments. The specified RESET commands are executed when the system instruments are reset (after each evaluation step, unless ASK- Q is specified, and after an error). The RESET commands are also executed after procedure termination. RESET statements can be specified for both IEEE-488 and serial instruments. Refer to the on-line help for the RESET FSC for full details.

3. Config Editor in Run Time

The MET/CAL Configuration Editor is now available in the Run Time application. In V5.0, the Configuration Editor was available in the Editor application, but not the Run Time. In database mode, the minimum operator level allowed to use the Run Time Configuration Editor can be configured. The default level is set to 3.

4. Run Time Prompt for Asset Numbers of Required Instruments

In database mode, the Run Time now prompts for the asset number of any potentially required instrument (system instrument, user-configured instrument, or manual standard) for which the workstation-specific system configuration information does not specify an asset number.

If the user chooses "Cancel" in response to the prompt, or enters an empty asset number, the procedure is aborted. The asset number must not be the same as the asset number of any other configured instrument, and the asset number must refer to an asset in the database.

Asset numbers entered into the Run Time in response to this new prompt are internally retained by the system until the system configuration information is modified, or until the application (MET/CAL Run Time) exits, whichever comes first.

If desired, this feature can be disabled by setting "req_std_prompt" to "no" in the "[startup]" section of the initialization file ("metcal.ini").

5. Alternate Alias

User-configured and system devices may now be assigned an

alternate alias string. Rules are all the same as for the primary alias string. A device cannot have an alternate alias unless it has a primary alias.

Note that the uniqueness requirement still exists. No alias string, whether primary or alternate, may be the same as any other alias string for a configured device.

6. New Initialization File Parameters for DOS and DOSE FSCs

On networked systems conflicts can arise related to accessing the DOS/DOSE data file ("dosdose.dat"). On some systems the DOS/DOSE data file is created in the directory where the MET/CAL executables reside. If this directory is on a shared file system, two or more workstations running the MET/CAL Run Time or Editor at the same time may cause the DOS/DOSE data file to be created and/or accessed in the same directory at the same time, yielding unpredictable and incorrect results.

In some cases this problem is solved by specifying a "Start In" directory on the local workstation in the properties for the application (Run Time or Editor). This solution, however, has the undesirable side-effect of forcing the report files ("*.rpt") and the validation files ("*.val") to also be in the "Start In" directory.

To address this problem, three new, optional, initialization file parameters have been added:

user_cwd

This parameter specifies the working directory for user programs. That is, it becomes the current directory for an executing user program.

Unless otherwise specified, it also becomes the directory where MET/CAL looks for user programs (unless a full path or partial path specification is given in the procedure), and becomes the directory where the DOS/DOSE data file is created and accessed.

user_data_dir

This parameter specifies the location of the DOS/DOSE data file. If specified, it takes precedence over any "user_cwd" specification.

user_prog_dir

This parameter specifies the directory where user programs reside. If specified, it takes precedence over any "user_cwd" specification.

A "user_prog_dir" specification has no effect on a DOS or DOSE procedure statement which gives a full path specification for the user program.

For example,

```
DOS c:\metcal\myprog.exe
```

This DOS statement executes the "myprog.exe" in "c:\metcal" regardless of what "user_prog_dir" specifies in the initialization file.

If the DOS or DOSE statement provides a partial path specification, the partial path specification is relative to the "user_prog_dir" specification (if any).

For example,

If the initialization file specifies:

```
user_prog_dir = c:\metcal
```

and a DOS statement in a procedure specifies:

```
DOS exe\myprog.exe
```

then MET/CAL executes the program "c:\metcal\exe\myprog".

Typical upgrade users running networked systems who experience the problem described above should edit "metcal.ini" on each workstation and set:

```
user_cwd    = c:\metcal\station  
user_data_dir = c:\metcal\station  
user_prog_dir = <shared directory for user programs>
```

7. Power-On SRQs

A change has been made to the power-on SRQ handling on IEEE-488 board 0. Previously, if two or more configured listeners on port 0 had power-on SRQs, and the test and/or clear functions for the system instruments did not clear the SRQ, MET/CAL would detect the first instrument which acknowledged the service request, and then assume that because the serial poll of that instrument did not cause the SRQ line to drop, the instrument must therefore be malfunctioning. The procedure was then aborted. MET/CAL now realizes that there may be multiple instruments with power-on SRQs, and continues to serial poll until all configured listeners have been serial polled, or until the SRQ line is dropped, whichever comes first.

8. Handling of Ziatech SRQs

A change has been made to the way in which SRQs are handled when using Ziatech IEEE-488 boards. Ziatech IEEE-488 boards distinguish between latched SRQs and current SRQs. A current SRQ indicates that the IEEE-488 SRQ line is currently asserted at the time that the status of the line is tested. A latched SRQ indicates that the IEEE-488 SRQ line is not currently

asserted, but has been asserted and de-asserted since the last time the status of the line was tested. In MET/CAL V4.0 to V5.0, an SRQ which was current, latched, or both, was regarded as an SRQ which interrupted normal operation and caused MET/CAL to serial poll instruments to attempt to find out which instrument had requested service. This has been changed so that, in MET/CAL 5.1, a latched-only SRQ is (by default) ignored. This makes SRQ handling on Ziatech boards the same as it has been (since V4.0) on National Instruments boards. For users who would like MET/CAL to continue to operate as it did in versions 4.0 to 5.0 with regard to SRQ-handling on Ziatech boards, the "ziatech_srq_latch" initialization file parameter can be set to "yes" in the "[startup]" section of "metcal.ini". If this parameter is not specified, it defaults to "no", which causes latched-only SRQs to be ignored. It can also be explicitly set to "no", which has the same effect.

9. Serial Polling after SRQ

The serial polling order after an SRQ has been changed so that:

(1) Test Run now works like Run Time in that when an instrument FSC is executed, if the device is an IEEE-488 device, it gets logged as the last-accessed system instrument, and is then the first one which will be serial polled when an SRQ occurs.

(2) System instruments are now serial polled before the UUT (or other device accessed using an IEEE statement) on board 0. This means that if a procedure talks to a system instrument (e.g., HP 3458A) using IEEE statements, but does not use the built-in FSC, MET/CAL's instrument-specific SRQ handler will still be invoked after an SRQ has occurred and the device has acknowledged the service request.

10. "vers" function in MATH FSC.

A new string function, "vers", has been added to the MATH FSC. "vers" returns the version string of the current MET/CAL executable. For example, for V5.0, "vers" will return "5.00".

11. Editor Text Color Now Configurable

Prior to V5.1, the Editor did not allow the color of the text in edit windows to be configured. The color was always black. This has been corrected so that the system-specified window text color is now used by the Editor. (Note that in V5.0 the Editor did allow the normal background color, as well as the selected text and background colors, to be configured.)

12. Post Test Procedure List Selected Background Now Configurable

In the Post Test "Procedure List" dialog, the background color used for selected (highlighted) text can now be configured.

13. Fixed "FL" (floating lows) bug in M550 / M5520.

In V5.0, the Editor did not allow "FL" to be entered in the M550 or M5520 MOD3 field, contrary to the documentation. This did not affect the programming of the instrument, but did prevent a specific automatic connection message from being generated.

14. 255 Comment Limit

The Editor has been changed to generate an error message when attempting to save a compiled procedure file in which there are more than 255 contiguous comment and/or blank lines. Previous versions of MET/CAL failed to detect this situation, and saved an invalid compiled procedure file. This caused the procedure to be corrupted when it was reloaded.

Thanks are due to Ebbe Larsson of Sweden for bringing this problem to our attention.

15. Config Editor Philips PM 6680 Dialog

In V5.0 and prior, the Channel C "None" button was not updated correctly in the "Philips PM 6680" dialog in the Config Editor. This has been corrected.

16. 5440 Timeout

The timeout in the 5440 driver has been changed from 5 seconds to 10 seconds. In addition, the timeout in the 5440 test function, called at the beginning of procedure execution, has been changed from 500 milliseconds to 10 seconds. There were no reported problems with the 5440 driver prior to the change, however.

17. Procedure Installation Problem

A procedure installation problem was found which caused required subprocedures not to be installed in some cases.

The bug has no effect on 5500 EP

With the HP 3458 procedure disk, the effect was that, if the two main procedures were loaded in the same operation, some sub-procedures would not be installed.

The only procedures affected on the MET/CAL Procedures and 5500/CAL Procedures are the Tek 2440 procedures. If two Tek 2440 procedures are selected to be installed simultaneously, some sub-procedure will not be installed.

For V5.0, the work around is to install the desired Tek 2440 and HP 3458 procedures one at a time.

The problem has been corrected.

18. Database Field 2321

Field 2321 is now 20 characters, rather than 5, in the MCSTD and MCRESLT stored procedures.

19. RTAG for Stored Procedures

RTAG has been changed to "Char (60)" for the "rep_asset" and "rep_tech" stored procedures.

20. Editor Problem Involving Uncompiled Auxiliary Instrument FSCs

In V5.0 and earlier, certain sequences of operations terminating in the Next Error function (F9) could result in the blanking or garbling of instrument FSC statements.

The problem involved instrument FSCs with auxiliary FSCs which contain information required by the Editor in order to do compile-time checks on the main FSC.

For example:

```
1.001 M3458 RNGLK 0mV
1.002 DISP ABC
1.003 3458 0mV          N
```

If all of the following conditions are true:

- (1) The M3458 statement is uncompiled.
- (2) The DISP statement is uncompiled.
- (3) The 3458 statement is compiled.
- (4) The current line is the DISP statement.

then typing F9 causes the 3458 statement to be blanked.

The reason most customers haven't reported this problem is that, typically, uncompiled auxiliary statements do not precede compiled corresponding instrument statements. When the problem arises, it is usually as a result of pasting procedure lines containing auxiliary FSCs before corresponding already-compiled main FSCs.

This defect in the Editor has been corrected.

21. 6060 & 5191 Slewing Problem

In V5.0 slewing does not work correctly for some 6060 and 5191 statements. An example of a statement which fails is:

```
6060 1uT 1% 1V
```

The problem has been corrected in V5.1.

22. Evaluating [SREG<n>] Constructions in IEEE and PORT Statements

A bug has been corrected involving evaluation of [SREG<n>] special constructions. In V5.0, they were evaluated correctly only when they appeared at the beginning of an IEEE or PORT

procedure line. For example, "IEEE [SREG5]abc" worked correctly in V5.0, but "IEEE abc[SREG5]" did not. The problem was that the string was broken into two pieces ("abc" and whatever was in S-Register 5), and sent to the instrument in two separate calls to the IEEE-488 write function, each one terminated by EOI. This error affects IEEE and PORT, but does not affect the display-only FSCs (like DISP), because, for them, the fact that the message was split into smaller pieces unnecessarily didn't matter. The problem has been corrected in V5.1.

23. 5700 Frequency Limit Changed

Changed lower frequency limit from 40 Hz to 20 Hz in the 2.2A range. This affects 5700 and 5720.

24. Magic Values for Database Fields

Special ("magic") values can be specified as defaults for some data fields. The following special values are supported:

- 99/99/99 : current date in current date format
- 99:99 : current time
- U_SEG : user's segregate
- U_NAM : user's login name
- U_WRK : current workstation ID

25. Maintenance Due Dates

Multiple maintenance due dates are now supported.

Maintenance records have a "performed date", "interval", "due date", and "maintenance" type.

Each maintenance type now has an active due date.

Example:

There could now be three active due dates, one for tire-rotation, one for oil change, and one for fluid check.

26. Uses Counts

The uses count for an asset is now incremented when the asset is used as a standard. This applies to "uses" type assets (interval type "U").

In V5.0 and prior, the uses count for standards had to be manually incremented.

27. Running Import from the Command Line

It is sometimes useful to run the import program from the command line. For instance, the user may run the import program every morning to import data entered by another system during the night.

"imp.exe" recognizes the following command line arguments:

- def [file name] def file name
- exit exit flag
- ocal allow out-of-cal standards
- src [file name] source file name
- zero zero source file flag
- l [login string] data source name, user id, & password

The execution of the import program can be automated using various PC scheduling tools. For example, Windows NT supports the "at" command to schedule commands to run at a specific date and time. Consult your Windows documentation for more details.