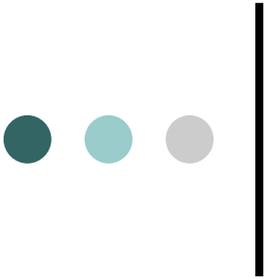




Met/Cal Users Group Meeting





Morning Agenda

- New Products, Promotions, etc...
- MET/CAL Version 7.2

What is new?

How do I use the new features?

Use of Flexible Standards

- Utility Programs
- Next Generation of MET/CAL



Training

<http://training.fluke.com>

Calibration Training
Course Planner

FLUKE

- Instructor-led classroom sessions
- Instructor-led web-based courses
- Self-paced CD-ROM training
- Self-paced web-based training

2005

For up-to-date course schedules, descriptions, and online registration:
www.fluke.com/2005caltraining



Training

- **Classroom Training:**

- Starting in Electrical Calibration
- Metrology for Technicians
- Cal Lab Management
- Preparation for Accreditation
- MET/CAL Database and Reports
- MET/CAL Basic Procedure Writing
- MET/CAL Advanced Procedure Writing
- Product Specific Training
- On-Site Training is available for most of the above classes



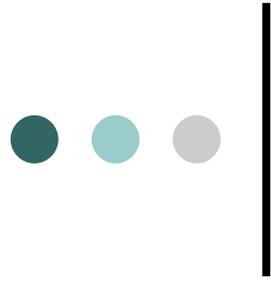


Training

- **Web-Based Training:**
 - MET/CAL Database & Reports
 - MET/CAL Procedure Development

- **Self-Paced Web-Based Training:**
 - Introduction to Measurement and Calibration
 - Precision Electrical Measurement
 - Measurement Uncertainty
 - AC/DC Calibration and Metrology
 - Metrology for Laboratory Personnel (CCT Exam Preparation)





Questions...



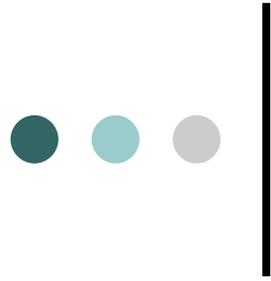


Priority Gold Care Plan



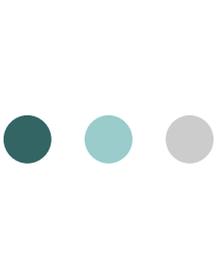
- Features...
 - Available on instruments up to 7 years old
 - Includes one, three or 5 annual calibrations
 - Free repairs complete with calibration
 - 3 day in-house turnaround for calibration
 - Priority turnaround for repairs
 - Discounts on upgrades-10%
 - Discounts on training-20%
 - Free two-day return freight on calibrations and repairs





Questions...





Gold Procedures...

- Fluke 724/725**
- Fluke 2680 Family**
- Keithley 2000/2015/2016**
- Yokogawa DL 1700 Series**
- Tektronix 3000 Series**
- Agilent/HP 3458A**
- Agilent/HP 34410/34411**
- Agilent/HP 34970**
- Agilent/HP 8590**
- Biddle Instruments Megadek**
- Escort 170 Series**
- Tektronix 600 Series**
- Tektronix 700 Series**

Updated

To be posted soon



Gold Procedures...



- Tegam ESI DB877**
- Tegam ESI DB62-11K/ 1M/ 11M**
- Fluke 433/434**
- Fluke 45**
- Fluke 789**
- Wavetek HD130B**
- Wavetek HD160**
- Wavetek 2015/ 2020/ 2030**
- Fluke Scopemeters**
- Tektronix 500 Series**
- Agilent/HP E2378/2377/2373**
- Beckman HD 130B / HD 160**
- Wavetek RMS 225**

Completely Revised

Revised

.....more



Gold Procedures...

FLUKE®



RF procedures now available

Spectrum Analyzers:

Anritsu MS2661C (new)

Anritsu MS2711D (new)

HP 8563A (new)

HP 8566B (converted for use with flexible standards)

HP 8590L (converted for use with flexible standards)

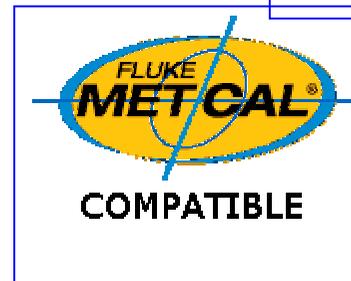
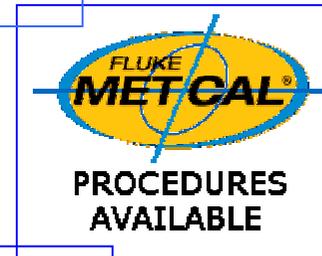
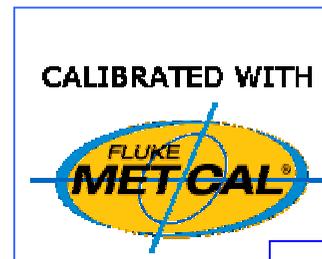
HP 8594E (converted for use with flexible standards)

HP 8595E (new)

Rohde & Schwarz FSH3



Met/Cal Badge . . .





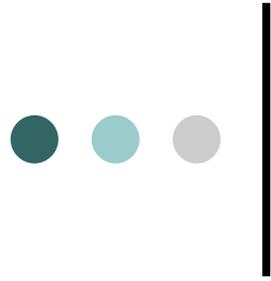
MET/CAL Badge @ Agilent



Fluke completed Model 6000 procedures for Agilent.

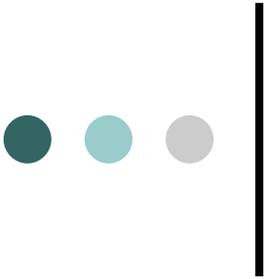
More to come! Agilent 80000/8000 series in the works

The screenshot shows the Agilent Technologies website. At the top left is the Agilent Technologies logo. To its right is a search bar with the word "Search" and a magnifying glass icon. Below the logo are navigation tabs: "Products & Services", "Technical Support", "Buy", "Industries", and "About Agilent". On the right side, there are "Registration" and "Login" buttons. A breadcrumb trail reads: "United States Home > ... > Oscilloscopes, Analyzers, Meters > Oscilloscopes > New Oscilloscopes > Agilent 6000 Series Oscilloscopes with MegaZoom III technology >". The main heading is "Agilent 6000 Series Oscilloscopes with MegaZoom III technology" followed by "MET/CAL Support for the 6000 Series". The content area is split into two columns. The left column contains text explaining the MET/CAL badge: "The MET/CAL badge with 'PROCEDURES AVAILABLE' signifies that Fluke has created Warranted MET/CAL procedures to verify the performance of this instrument using MET/CAL metrology software. These procedures can be obtained from Fluke. Please search for MET/CAL for more information at: [Fluke Corporation](#)". The right column features a large graphic of the "FLUKE MET/CAL PROCEDURES AVAILABLE" logo. To the right of the main content, there are links for "Select a Country or Area" and "Contact Us". Below the main content, there are "More Details" links for "Technical Support", "Library", and "Events", and "Other Links" for "Email Updates". At the bottom, there are links for "top of page" and "printer-friendly version", and a footer with "Privacy Statement | Terms of Use | Webmaster | United States Home | © Agilent 2000-2005".



Questions...





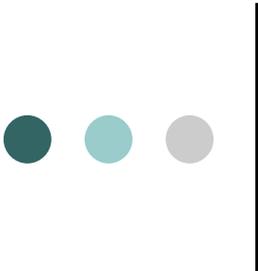
The Objective

- How to supply an unlimited number of MET/CAL procedures to our user base?
 - While maintaining a level of quality
 - Minimizing development resources
 - Maintaining reasonable value

MET/CAL Procedures -VOC

Voice Of Customer

- Never enough procedures to meet User demands
- Access to an untested or part written procedure is better than no available procedure
- Procedures are difficult to share with others
- User confidence is high that procedures available from MET GOLD will function
- MET/CAL users will accept procedures from other sources if quality was known or could be determined
- MET/CAL users are more willing to share procedures with others if rewarded or compensated
- MET/CAL users cannot share procedure with others as these are proprietary to the company they work for
- MET/CAL users are willing to edit/modify procedures that are close to meeting needs



MET/CAL Procedures – a strategy

- Simplify the consolidation of files that constitute a procedure
- Develop a MET/CAL user community repository for procedures
 - Users will upload, download and rate procedures
- Mandate & Automate the process of peer quality rating
- Compensate those that contribute
- Example site



Example site

The screenshot shows a web browser window titled "MET/CAL User Community - Mozilla Firefox". The address bar displays "http://lincoln.tc.fluke.com/metsupport/index.php". The page features a blue header with the "MET/CAL User Community" logo and a navigation menu on the left. The main content area has a yellow background with a "Welcome to the MET/CAL Community!" message. On the right, there is a search box, a survey titled "What version of MET/CAL are you currently running?", and a login form. The survey lists various software versions from 5.00 to 7.11. The login form includes fields for "Nickname" and "Password" and a "Login" button. A footer note says "Done".

Menu

- Home
- Downloads
- Encyclopedia
- FAQ
- Feedback
- Forums
- Journal
- Private Messages
- Search
- Surveys
- Top 10
- Web Links
- Your Account

Who's Online

There are currently, 1 guest(s) and 0 member(s) that are online.

You are Anonymous user. You can register for free by clicking [here](#)

Welcome to MET/CAL User Community

Welcome to the MET/CAL Community!

This site is provided as a benefit to users of Fluke metrology software, including MET/CAL, MET/TRACK, and MET/TEMP. Available on this site are resources contributed by both Fluke and the user community. Membership in the community is free - you only need to create an account to start enjoying the benefits of membership! Memberships are subject to the terms and agreements, so please review them before becoming an active participant. Again, welcome to the community! We hope that the resources provided here help you to maximize the benefits provided by Fluke metrology software products.

Search

Search

Survey

What version of MET/CAL are you currently running?

7.11

7.10

7.01

7.00

6.11A

6.11

6.10

6.01

6.00

5.10

5.00

Earlier than 5.00

Results Polls

Votes: **7**
Comments: **0**

Login

Nickname

Password

Don't have an account yet? You can [create one](#). As a registered user you have



MET/CAL User Community - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://lincoln.tc.fluke.com/metsupport/modules.php?name=Forums

Getting Started Latest Headlines

MET/CAL® User Community

Search

MET/CAL User Community: Forums

Forum FAQ Search Usergroups Profile No new messages Log out [stevec]

You last visited on Thu Aug 17, 2006 1:47 am
 The time now is Thu Aug 17, 2006 1:47 am
 MET/CAL Community Forum Index

View posts since last visit
View your posts
View unanswered posts

Forum	Topics	Posts	Last Post
General			
Introductions Introduce yourself to the community! Moderators msell , Pete , bob_mck	0	0	No Posts
News & Announcements Inform the community about metrology news, new products, or other topics of interest to members Moderators msell , Pete , bob_mck	0	0	No Posts
MET/CAL			
Procedure writing Questions and answers about MET/CAL procedures, as well as tips & tricks. Moderators msell , Pete , bob_mck	0	0	No Posts
MET/TRACK			
Configuration Questions and answers about customization of MET/TRACK, as well as tips & tricks. Moderators msell , Pete , bob_mck	0	0	No Posts
Crystal Reports Share your questions and experiences about the Crystal Reports reporting tool included with MET/TRACK and MET/CAL Moderators msell , Pete , bob_mck	0	0	No Posts
Sybase ASA Questions and answers regarding Sybase Adaptiver Server Anywhere (all versions) Moderators msell , Pete , bob_mck	0	0	No Posts
Hardware			
57xx series Questions and answers for the 5700, 5720 series of precision multifunction calibrators Moderators msell , Pete , bob_mck	0	0	No Posts
Other calibration eqp't Questions and answers about calibration equipment provided by manufacturers other than Fluke	0	0	No Posts

Done

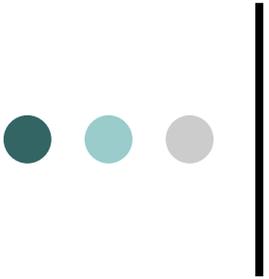
Menu

- Home
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- Private Messages
- Search
- Surveys
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- Web Links
- Your Account

Who's Online

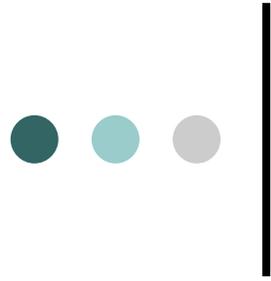
There are currently, 0 guest(s) and 2 member(s) that are online.

You are logged as **stevec**.
You have 0 private message(s).



We Need Your Input

- Procedure Development Community
 - See Peter Dack (peter.dack@fluke.com)

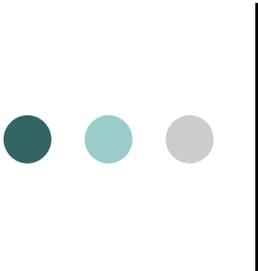


Questions...



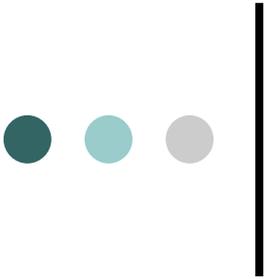
What's new in 7.2...





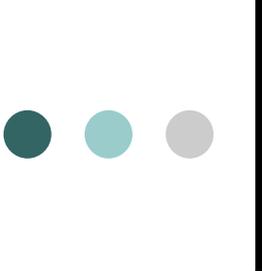
What's new in 7.2...

- Anticipated release Sept '06
- Coincides with the release of new hardware
- New FSC's
- New features to enhance RF calibration
- New Flexible Standards
- Procedure portability tool (Pack/Unpack)



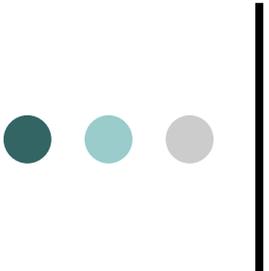
Version 7.2 – Flexible Standards

- Problem: Need multiple procedures for a UUT using different standards
- Solution: Single procedures capable of supporting different standards -- Flexible Standards



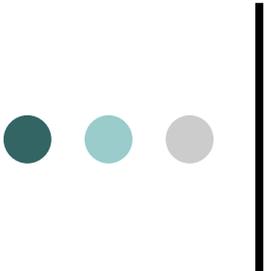
Version 7.2 – Flexible Standards

- Easy to implement:
 - Procedure based
 - 7.2 supplied with “starter set” of accuracy & control files
 - Easy for customer to add additional FS supported instruments by editing supplied initialization file
 - Procedures coming using FS feature



Version 7.2 – Pack/Unpack

- New tool to package procedures and reinstall in a MET/CAL *Plus* system.
- Works from the MET/CAL procedure editor.
 - Unpack will be downloadable freeware
 - Useful for customers who do not have V7.20 or later and who have access to Gold procedures



Version 7.2 – Pack/Unpack

- Combines the procedure, sub procedures and auxiliary files needed to run a calibration.
 - Enhanced procedure portability and distribution
 - Migrate Gold Warranted procedures
 - Reduces user error (missing files)

Version 7.1 – New FSCs

- 53131/M53131 Agilent/HP 53131A Timer/Counter
- 53132/M53132 Agilent/HP 53132A Timer/Counter
- 53181/M53181 Agilent/HP 53181A Counter





Version 7.2 – New FSCs

- 8845/6
- 9640
- 5320
- N5531S
- PSA
- 5350/5351/5352





Version 7.2 – New FSCs

- 9640 - Fluke 9640A Reference Source
 - Instrument control
 - Sine
 - Modulation
 - Sweep
 - Learn Mode
 - Automatically generate procedure statement based on front panel setup



Version 7.2 – New FSCs

- 9640 - Fluke 9640A Reference Source
 - FSC supports slewing
 - FSC uses Name/Value Syntax

9640 +Level = -130 dBm; Freq = 100 MHz; Outplmp = 50 ohm



Version 7.2 – New FSCs

PSA/opt 233-Based Measuring Receiver Solution (Collectively, N5531S)

P-Series Power meter (N1911A/12A)

Supports ALL PSA models (including 50 GHz)

Audio input (100 k?)

PSA Built-in Measuring Receiver personality (opt 233) w/ PSA user interface



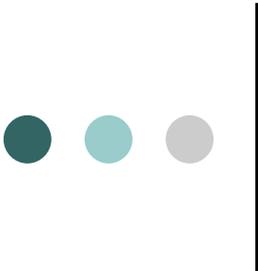
LAN-based communications

System GPIB (SCPI)

N5532A sensor module extended to 50 GHz

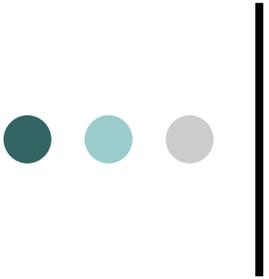
Version 7.2 – Named Variables

- We now support the use of Named Variables
 - **Makes procedure easier to read/write**
 - **Do not need GETV/PUTV etc.**
- Examples:
 - Local Variable
 - **MATH** **RefLevel = -10**
 - Global Variable
 - **MATH** **@Channel = 1**



New MATH Functions

- Read/Write to ini file
 - Specify a directory for wif/rif functions
- New file utility functions
- Read from user configured instrument information file
- Load up a contiguous sequence of registers in a loop.
- String replacement function



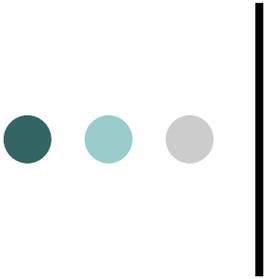
New MATH Functions

- Prepend/Append spaces to a string
- New numeric test functions
- Return the full instrument name of a configured instrument
- Return the asset number of the UUT

Read/Write to .ini

- New MATH FSC function to read or write to an .ini file
- Function name is **RIF**
- Function name is **WIF**

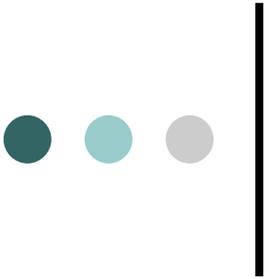
Store your cal factors



New Math functions

New File Related Utility Functions:

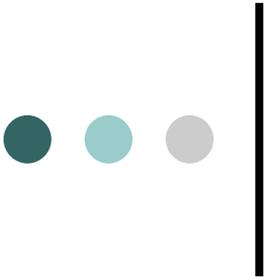
- (1) **EXISTS** - determine if specified file exists
- (2) **FLEN** - determine length of specified file
- (3) **ISDIR** - determine if specified file is a directory file
- (4) **ISORD** - determine if specified file is an ordinary file
- (5) **MTIME** - determine modification time of specified file



New Math functions

- RINF** - read data from user-configured instrument information file
- RINFE** - read data from user-configured instrument information file and generate an error message when the requested parameter value is not found

The path for these files may be added to the metcal.ini file.



New Math functions

A new MATH FSC utility function, REPL, to perform string replacement.

Example:

```
MATH S[1] = "abc def ghi"  
MATH REPL("def", "xyz", S[1])
```

The call to REPL above will change the value of S[1] to:

abc xyz ghi

New Math functions

- BASE** - convert number to base units
- IS_DIM** - validate dimensioned number string
- IS_UNIT** - compare specified units to units in dimensioned number
- PSCALE** - return scale factor based on units prefix
- UNIT** - return units symbol from dimensioned number string
- UPREFIX** - return units prefix symbol from dimensioned number string

New Math functions

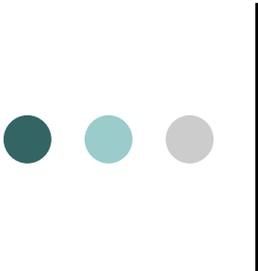
Two new functions, PAD and PADB, to append or prepend, respectively, spaces to a string.

For example, to add 13 spaces to the end of a string:

MATH S[3] = PAD("xyz", 13)

PAD append spaces to make string specified length

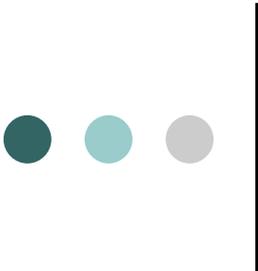
PADB prepend spaces to make string specified length



New Math functions

V7.11 includes 3 new MATH FSC numeric test functions:

- (1) Function IS_NUM to determine if a string is entirely numeric.**
- (2) Function IS_NUM_LEAD to determine if a string begins with a number.**
- (3) Function IS_NUM_SUB to determine if a string contains an embedded number.**

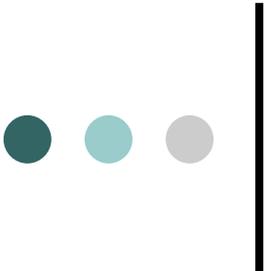


New Math functions

A new MATH FSC function named "INSTR" which, when given an alias, returns the name of the corresponding configured instrument.

MATH S[5] = INSTR("5700")

Assuming the workstation has a configured Fluke 5700A with alias "5700", the call above will return the string "Fluke 5700A".



New Math functions – 7.11 sp1

UUT Returns the asset number of the UUT.

Example: $\text{MATH S}[1] = \text{UUT}()$

New Math functions – 7.2

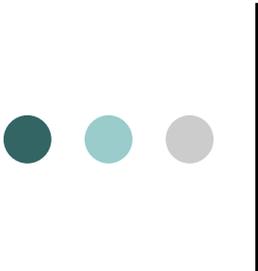
CAL

Returns the value of a specified Calibration Table field, for a specified cal record of a specified asset.

The first argument specifies the asset number (string) of the instrument for which the specified Calibration Table value is to be retrieved.

The second argument specifies the record number. Records are numbered from 1 to <NREC>, where record 1 is the oldest record and record <NREC> is the most recent. It is possible to access the records in reverse order by specifying a negative record number:

Example: MATH MEM2 = CAL("Sample-5700", 5, 2342)



New Math functions – 7.2

NCAL

Returns the number of cal records for a specified asset.

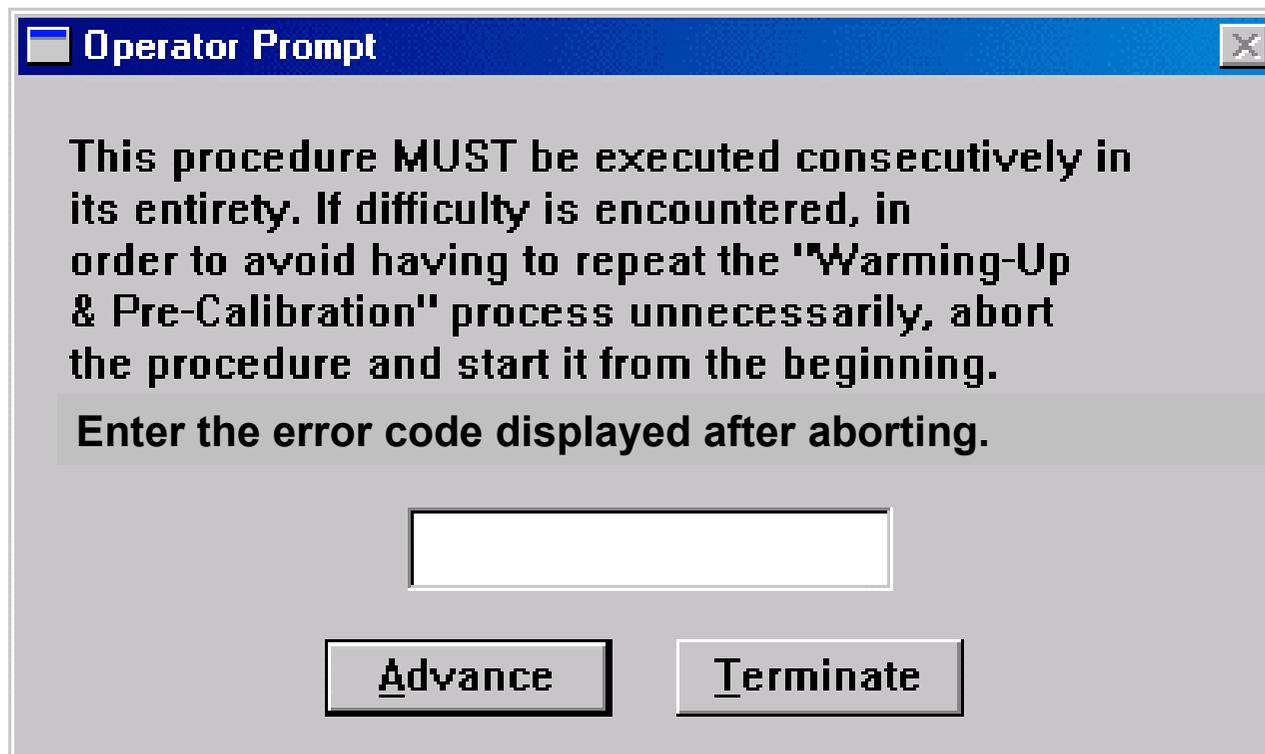
The first argument specifies the asset number (string) of the instrument for which the specified Calibration Table value is to be retrieved.

Example: MATH MEM = NCAL("Sample-5700")



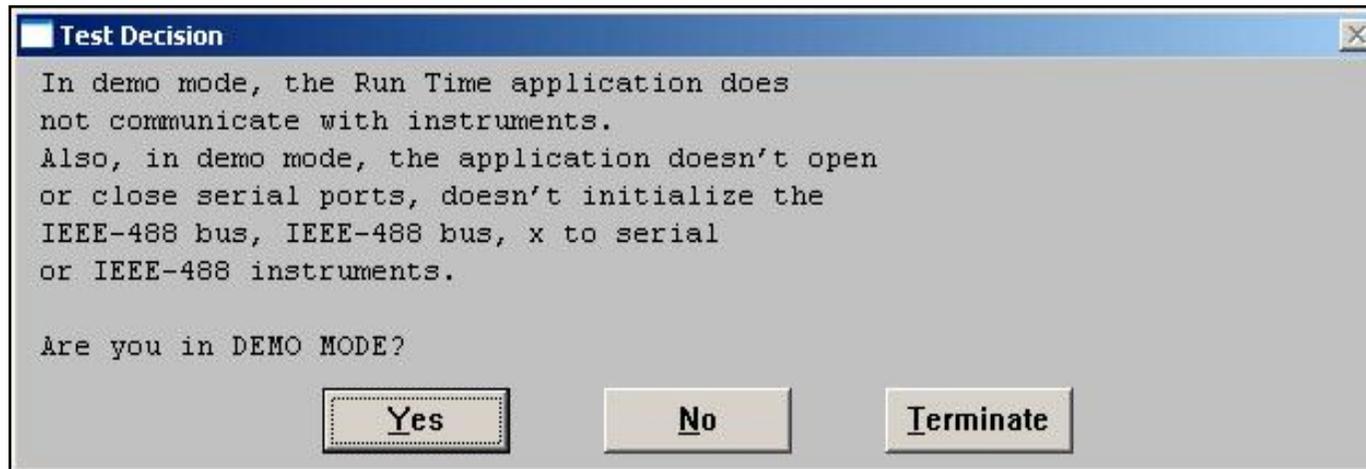
Multiline MEMI Statement

MEMI may now contain up to 32 lines..



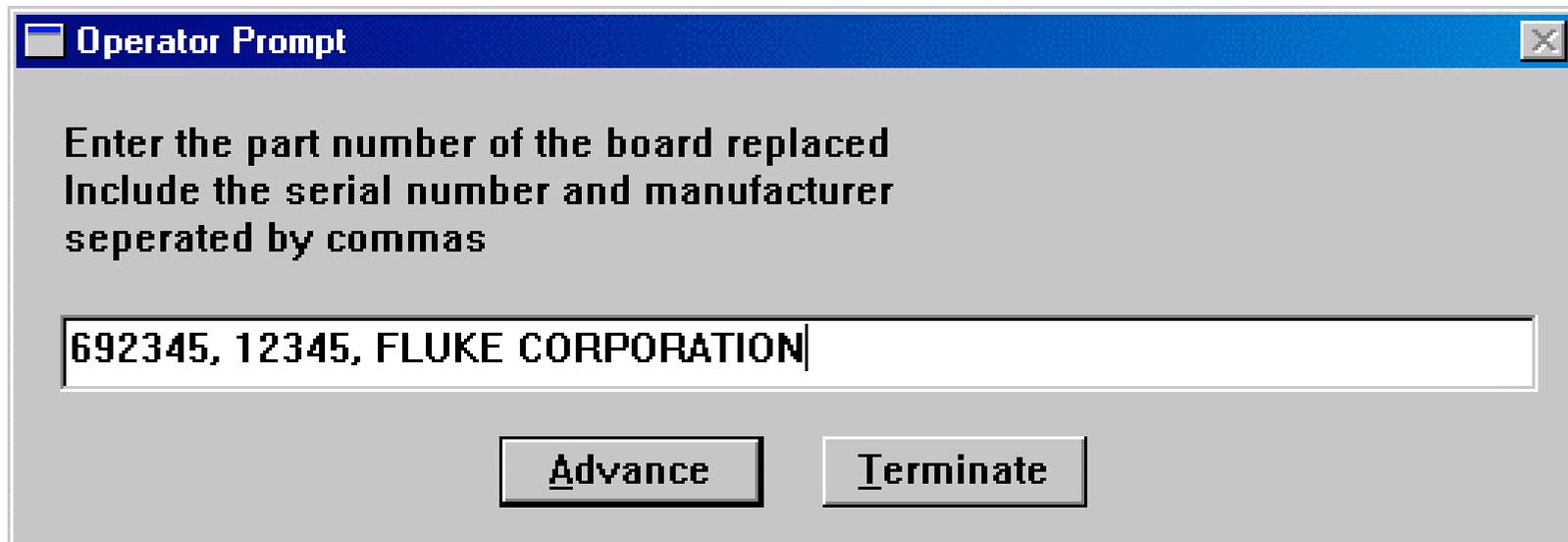
Multiline OPBR Statement

OPBR may now contain up to 32 lines..



Multiline MEM2 Statement

MEM2 may now contain up to 32 lines..



Operator Prompt

Enter the part number of the board replaced
Include the serial number and manufacturer
seperated by commas

692345, 12345, FLUKE CORPORATION|

Advance Terminate



Editor Compile Date Now Adds Time

Turned on by ini parameter:

[Startup]

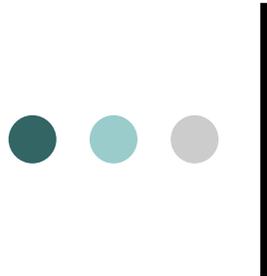
proc_date_format = DD/MONTH/YYYY

ProcHdrDateTime = yes

Fluke MET/CAL Procedure

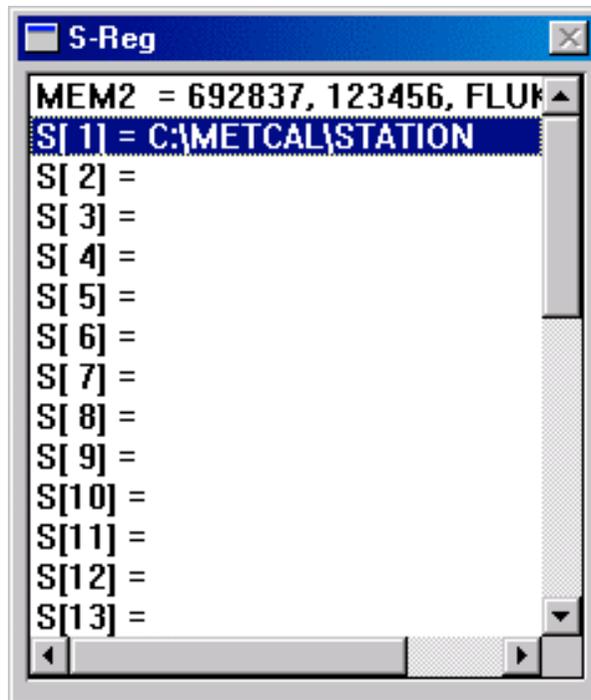
```
=====
INSTRUMENT:      Fluke 87 (1 Year) Cal/Ver 5520A
DATE:            09/May/2005  8:54:32
AUTHOR:          Fluke Training
REVISION:
ADJUSTMENT THRESHOLD: 70%
NUMBER OF TESTS:  0
NUMBER OF LINES:  12
=====
```

```
=====
STEP  FSC  RANGE  NOMINAL  TOLERANCE  MOD1  MOD2  3  4  CON
=====
```



Visible S[x] Registers

Now can view string registers S[1], ..., S[32] in test run



Lose Your Server Connection?

The Run Time application detects a dropped connection and displays a prompt at the end of procedure execution asking whether to reconnect.

(v.7.11sp1)



IEEE-488 I/O Trace – V7.1

- Assists debugging problems with IEEE-488 I/O by tracing all MFC/CA messages written to or read from the device.
- Debug data written to `<workdir> dir`.
- Use command line arguments “-df -trace”

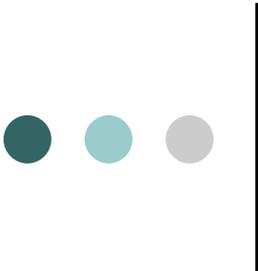
**Remember – IEEE2
and SCPI FSCs help!!**

D:\metcal\mcr32.exe -df -trace

Cal Interval Ranges – 7.1

- Many users extend cal intervals for references.
- MET/CAL accuracy files will allow a range of cal intervals to be mapped to a particular specification.
- For example: “Use the 90-day specs for any cal interval from 2 months to 6 months.”

```
Begin Header
  instrument = Fluke 5500A
  interval   = 60 - 120 days
  confidence = 2.58 sigma
End Header
```



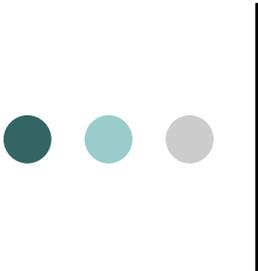
Function: Write to variable cache

- Store value in MET/CAL variable cache.

Example 1: `MATH MEM2 = PUT("temperature", 23.2)`

Example 2: `MATH PUT("temperature", "23.2 degC")`

These can now be replaced by Named Variables

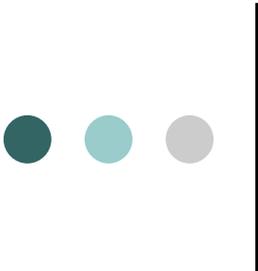


Function: Read from variable cache

- Read value in MET/CAL variable cache.

```
MATH MEM2 = GET("temperature")
```

These can now be replaced by Named Variables



Function: Read from variable.dat

- Read value in MET/CAL/STATION/ variable.dat.

```
MATH MEM = GETV("temperature")
```

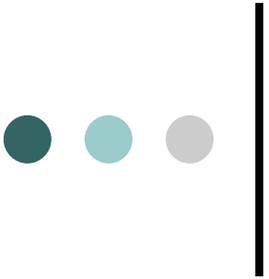
These can now be replaced by Named Variables

Function: Write to variable.dat

- Read value in MET/CAL/STATION/ variable.dat.

```
MATH MEM = PUTV("temperature")
```

These can now be replaced by Named Variables



Flexible Standards

- What do we mean by “Flexible Standards”?
- Why would you use them?
- How are they implemented?
- Practical example using a Flexible Standard.
- What are their limitations?



What do we mean by “Flexible Standards”?

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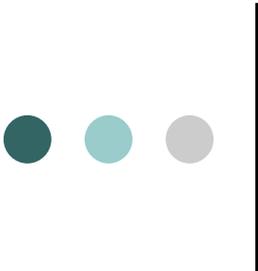
For our purposes, flexible standards refers to *the ability to interchange any reference instrument with another of the same functional class without necessitating procedure modification.*



What do we mean by “Flexible Standards”?

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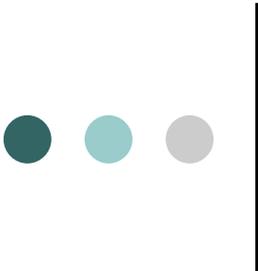
- Currently defined functional classes are: DMM (Digital Multimeter), FGEN (Function Generator), LFCTR (Low Frequency Counter), HFCTR (High Frequency Counter), UWCTR (Microwave Counter), LFSG (Low Frequency Signal Generator), HFSG (High Frequency Signal Generator), SWPG (Sweep Generator), LVLG (Level Generator), and LO (Local Oscillator)



Why use Flexible Standards?

Some metrology disciplines, e.g., RF, utilize a broad number of 'generic' references.

Flexible standards expand the functional usability of procedures while minimizing development and support costs.



How are Flexible Standards implemented in MET/CAL®?

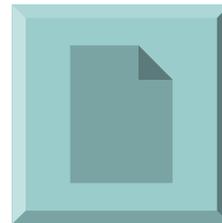
Procedure-based drivers, defined by the class of instruments they control, are called to access the desired functionality of the reference. Specific instrument commands are resident in a text-based initialization file, which may be edited by the end-user at any time to add functionality and/or devices.



How are Flexible Standards implemented in MET/CAL[®]?

FLUKE[®]

Instrument Initialisation file (example)





Configuring a Flexible Standard

System Instrument: Fluke PM 6690 [X]

Asset Number:

IEEE-488 Address:

Alias 1:

Alias 2:

Channel C:

- PM 6690/6xx (100 MHz - 3 GHz)
- PM 6690/7xx (200 MHz - 8 GHz)
- PM 6690/9xx (200 MHz - 14 GHz)
- None

FSC: 6690, M6690, IEEE, SCPI



Procedure Syntax Using Flexible Standards

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```
# Initialize parameter values.  
1.001  CALL          Sub Initialize /LFCTR  
# Reset LF Counter.  
1.002  CALL          Sub Reset IEEE /LFCTR  
# Get LFCTR device name and place into S[12].  
1.003  MATH          S[12] = GET("LFCTR_Device_Name")  
# Get LFCTR measurement terminal name and place into S[21].  
1.004  MATH          S[21] = GET("LFCTR_Ch1")
```



Subprocedure to Initialize a Flexible Standard

FLUKE®

```
# Get and store device name.
```

```
1.001 MATH      MEM2 = INSTR("LFCTR")  
1.002 MATH      PUT("LFCTR_Device_Name", MEM2)
```

```
# Get and store programming section name.
```

```
1.003 MATH      MEM2 = RINFE(GET("LFCTR_Device_Name"), "Prog_Sec_Name")  
1.004 MATH      S[31] = MEM2; PUT("LFCTR_Prog_Sec_Name", MEM2)
```

```
# Get and store FSC.
```

```
1.005 MATH      MEM2 = RINFE(S[31], "FSC")  
1.006 MATH      PUT("LFCTR_FSC", MEM2)
```



Using a Flexible Standard in a Procedure

FLUKE®

```
1.001 MATH      PUT("LFCTR_Func", "Freq_Ch1")
1.002 MATH      PUT("LFCTR_Ch1_Attn", "x1")
1.003 MATH      PUT("LFCTR_Ch1_Cpl", "AC")
1.004 MATH      PUT("LFCTR_Ch1_Imp", "LoZ")
1.005 MATH      PUT("LFCTR_Meas_Time", "2 s")
1.006 CALL      Sub Setup IEEE /LFCTR
```

Tolerance in ACC FSC reflects those of the PM 9691 (OCXO) timebase option.

```
1.007 ACC       10.0000000MH  0.1P%
1.008 TARGET    -m
1.009 CALL      Sub Measure IEEE /LFCTR
1.010 MATH      MEM = MEM / 1E+6
1.011 MEMC      10.0000000MH  2.5P%

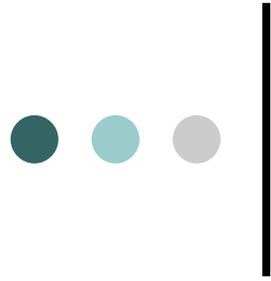
2.001 CALL      Sub Reset IEEE /LFCTR
2.002 END
```



What are the limitations of Flexible Standards?

FLUKE®

- IEEE-488 or RS-232 controlled
- I/O must be ASCII text without special constructions
- Limited error checking (IEEE-488.2 and SCPI compliant instruments)
- Technical adequacy of the device used is the user's responsibility



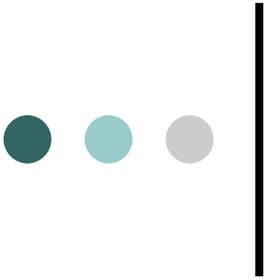
Questions...





Utility programs

do more with less



4 New Utility programs . . .

- Quick Sort - *revised*
- Questions – Answers
- Interval Analyzer/Adjustor
- Manual Met/Cal
- External Services Manage

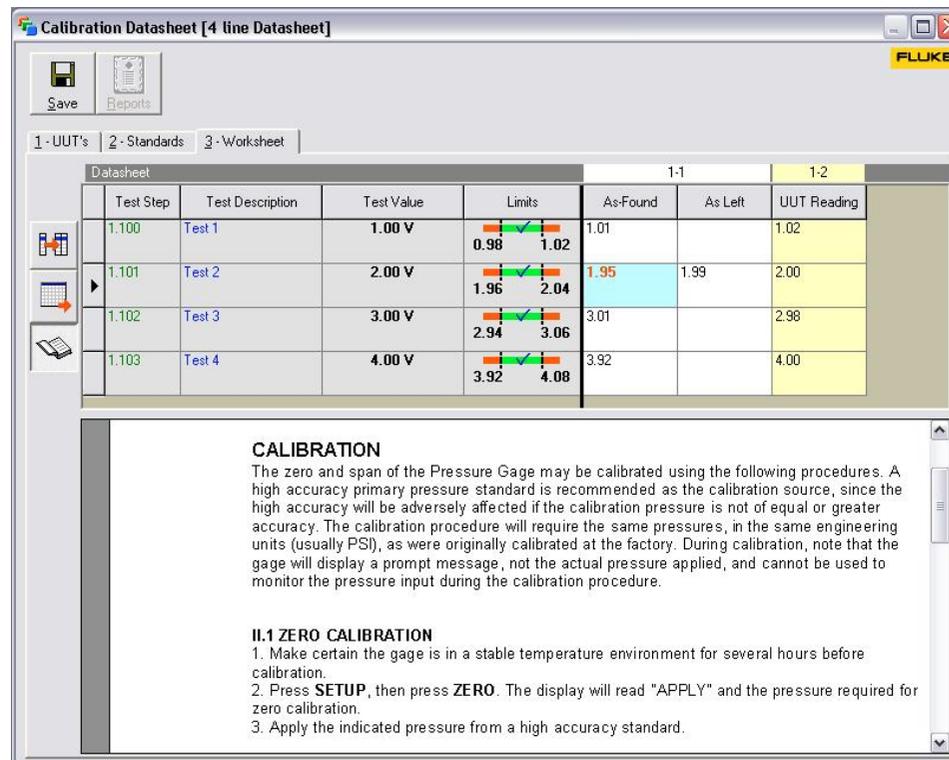


In Development

Free for Met/Support Gold

4. Manual Met/Cal

- Replace spreadsheets
- Cal multiple UUT's
- As-found & as-left capture & reporting



Calibration Datasheet [4 line Datasheet]

Save Reports

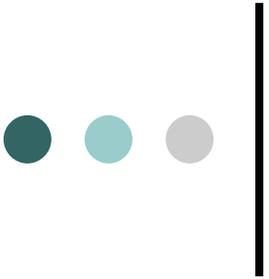
1 - UUT's | 2 - Standards | 3 - Worksheet

Datasheet				1-1		1-2
Test Step	Test Description	Test Value	Limits	As-Found	As Left	UUT Reading
1.100	Test 1	1.00 V	0.98 - 1.02	1.01		1.02
1.101	Test 2	2.00 V	1.96 - 2.04	1.95	1.99	2.00
1.102	Test 3	3.00 V	2.94 - 3.06	3.01		2.98
1.103	Test 4	4.00 V	3.92 - 4.08	3.92		4.00

CALIBRATION
 The zero and span of the Pressure Gage may be calibrated using the following procedures. A high accuracy primary pressure standard is recommended as the calibration source, since the high accuracy will be adversely affected if the calibration pressure is not of equal or greater accuracy. The calibration procedure will require the same pressures, in the same engineering units (usually PSI), as were originally calibrated at the factory. During calibration, note that the gage will display a prompt message, not the actual pressure applied, and cannot be used to monitor the pressure input during the calibration procedure.

II.1 ZERO CALIBRATION

1. Make certain the gage is in a stable temperature environment for several hours before calibration.
2. Press **SETUP**, then press **ZERO**. The display will read "APPLY" and the pressure required for zero calibration.
3. Apply the indicated pressure from a high accuracy standard.



4. Manual Met/Cal

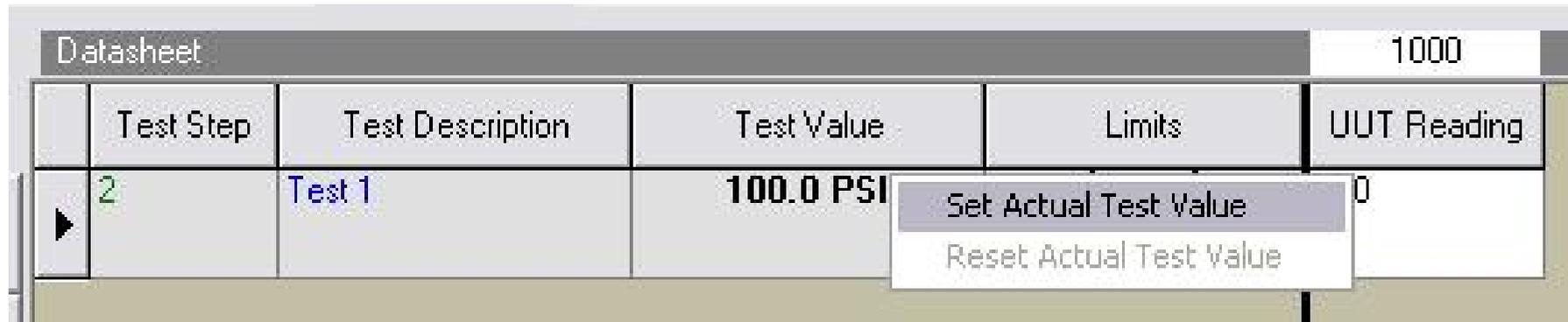
- 2 New features

- 1 Can set the actual test value if it differs from the nominal
- 2 Can customize the “Save Cal” screen

Coming to your favorite support site real soon

4. Manual Met/Cal

- Right-Click the Test Value cell
- Select “Set Actual Test Value”

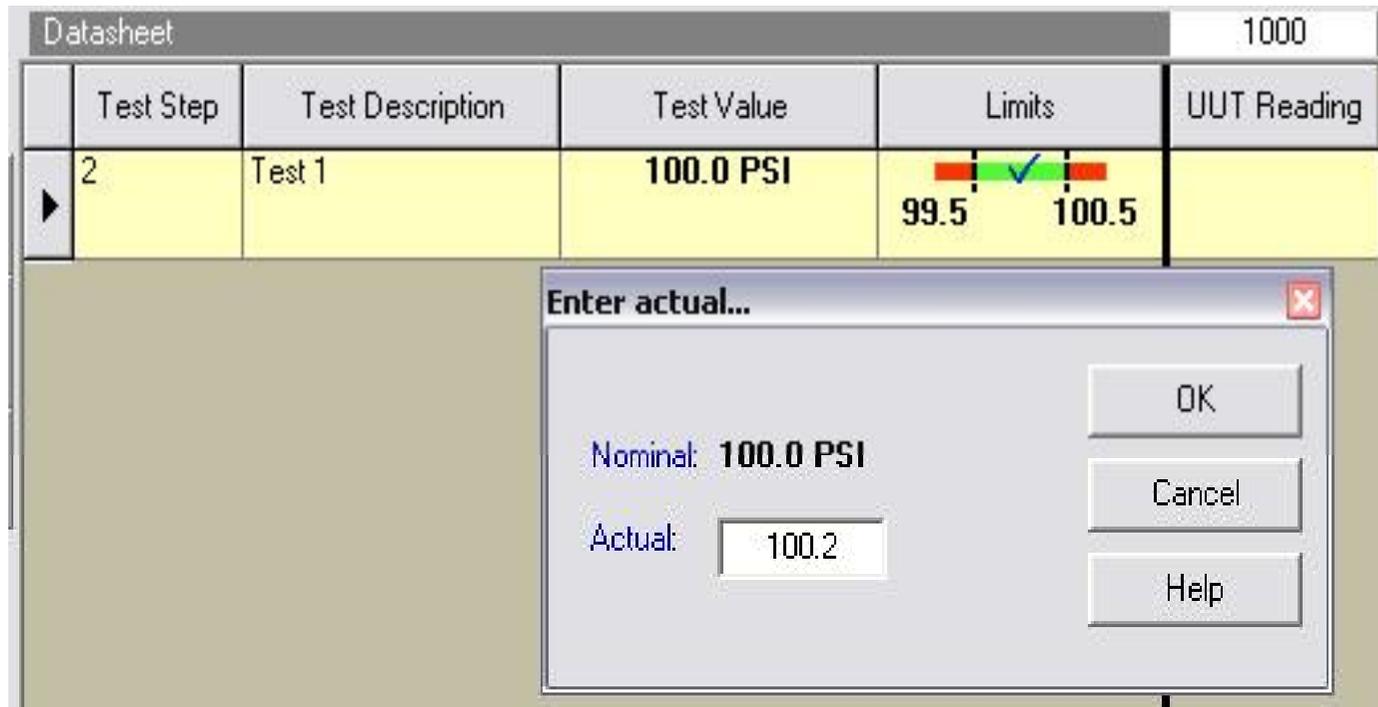


The screenshot shows a software interface with a table titled "Datasheet". The table has five columns: "Test Step", "Test Description", "Test Value", "Limits", and "UUT Reading". The "Test Value" column contains the text "100.0 PSI". A context menu is open over this cell, showing two options: "Set Actual Test Value" and "Reset Actual Test Value". The "UUT Reading" column contains the value "0".

Datasheet					1000
	Test Step	Test Description	Test Value	Limits	UUT Reading
▶	2	Test 1	100.0 PSI		0

4. Manual Met/Cal

- Enter “actual” test value



Datasheet					1000
	Test Step	Test Description	Test Value	Limits	UUT Reading
▶	2	Test 1	100.0 PSI	99.5 100.5	

Enter actual...

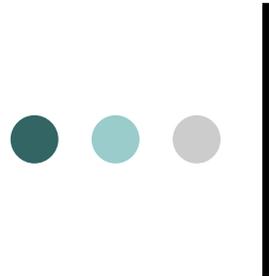
Nominal: 100.0 PSI

Actual:

OK

Cancel

Help



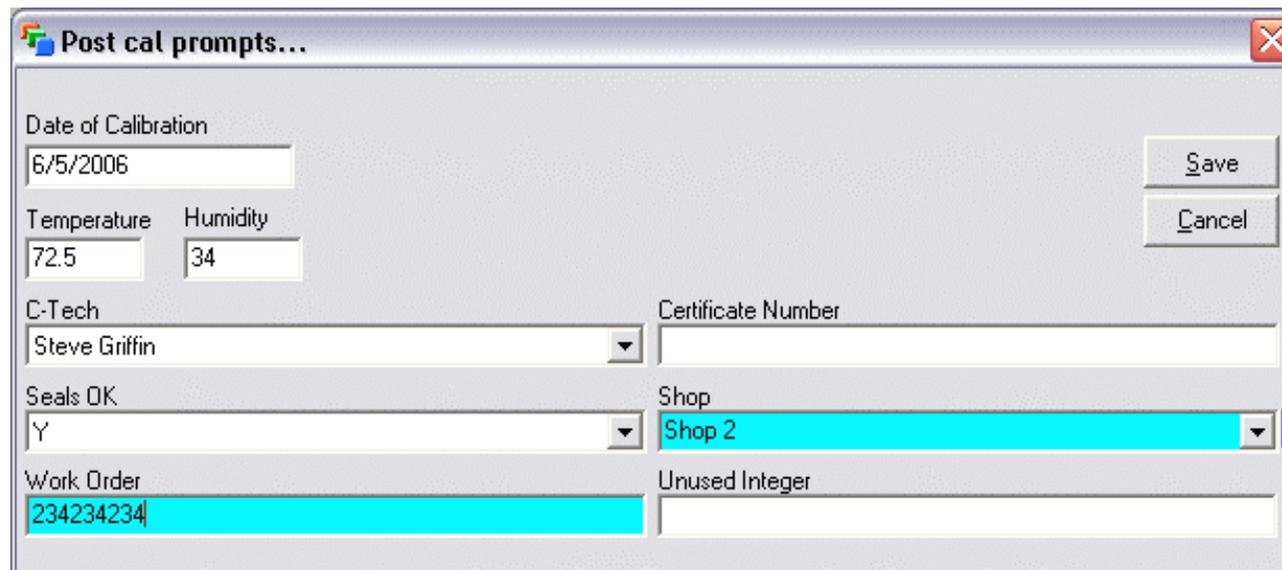
4. Manual Met/Cal

- Actual is displayed
- Test limits are revised
- Pass / fail based on the revised limits

Datasheet					1000
	Test Step	Test Description	Test Value	Limits	UUT Reading
▶	2	Test 1	@100.2 PSI	 99.7 100.7	

4. Manual Met/Cal

- Customize the Save Cal screen
- Fields follow customizing rules
 - (required, validated, default, etc)



The screenshot shows a dialog box titled "Post cal prompts..." with a close button (X) in the top right corner. The dialog contains several input fields and dropdown menus:

- Date of Calibration:** A text box containing "6/5/2006".
- Temperature:** A text box containing "72.5".
- Humidity:** A text box containing "34".
- C-Tech:** A dropdown menu with "Steve Griffin" selected.
- Certificate Number:** An empty text box.
- Seals OK:** A dropdown menu with "Y" selected.
- Shop:** A dropdown menu with "Shop 2" selected.
- Work Order:** A text box containing "234234234".
- Unused Integer:** An empty text box.

On the right side of the dialog, there are two buttons: "Save" and "Cancel".



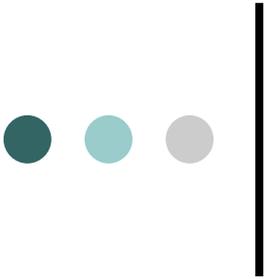
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4. Manual Met/Cal

Questions

?

Coming to your favorite support site real soon



5. External Services

FLUKE®

Manager

In Development

- Monitor, control & track external calibrations and repairs
- Includes Vendor list
- Create, update & close work orders
- Print shipping, status, historical reports
- Report history, costs and activity

5. External Services Manager

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In Development

The screenshot shows a software window titled "Vendors...". At the top, there are buttons for "Add", "Edit", and "Delete". Below these is the text "Fluke - Carrollton". There are four tabs: "Vendor", "Contacts", "Accreditation", and "Contracts", with "Vendor" selected. On the left side, there are navigation arrows and a search icon. The main form area is divided into several sections:

- Name** (orange background):
 - Name: Fluke - Carrollton
 - Vendor ID: 4099
- Phone** (orange background):
 - Phone: 412 703-7000
 - Web Site: www.Fluke.com
 - RMA HotLine: 800 853-2000
- Address** (pink background):
 - Address: 2104 Hutton Drive
 - City: Carrollton
 - State: TX
 - Postal Code: 75006-6807
 - Suite 112
- Shipping to** (green background):
 - Address: [Empty]
 - City: [Empty]
 - State: [Empty]
 - Postal Code: [Empty]

5. External Services Manager



In Development

Check-Out...

Items

Enter Asset Number:

All
 Due this month
 Due Next Month
 Overdue

Check-Out Reports

Items Shipping

Cost Center	Cost	Return Date	Asset Number	S/N	Mfg	Model	Description
2002	\$125.00	25 Jul 2006	1000	98798	Wavecrest	101	Pressure Gage
4096	\$204.00	25 Jul 2006	1407	2A16540	PTS	PTS310	Generator

Ship to

Vendor: RMA Number:

PO number: blanket/contract WO/ Ref:

Services

Calibration Type:
 Standard
 Z-540 w/o data
 Z-540 with data
 Accredited

Service Type:
 Calibration
 Warranty Repair
 Non Warranty Repair
 Next On Bench
 Gold Support Member
 Call before Repair

Included

Power Cord Manual

Other:

5. External Services Manager

FLUKE®

In Development

- Need it?
- Have suggestions?
- Want to discuss?

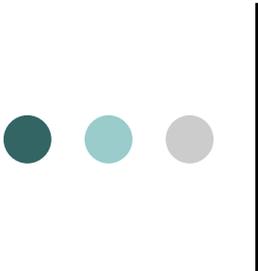
5. External Services Manager

FLUKE®

In Development

Questions

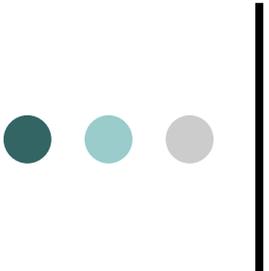
?



Available now at...

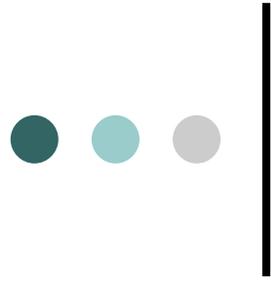
– <http://support.fluke.com>

- Met/support
 - Library
 - Utility programs (*sort by date*)
-
- Requires version 7.X
 - Requires Met/Support Gold
 - No formal support



Could do... Any Interest?

- Maintenance
- Workload scheduling
- Workload leveler
- Tools for scanned or PDF certs
- Document manager
- Real parts manager
- More capable search & replace

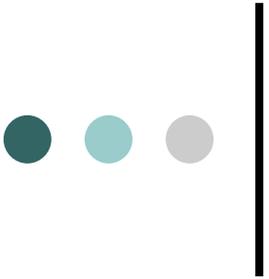


Questions...



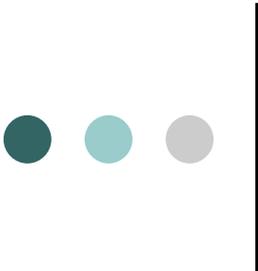


What is Beyond MET/CAL Plus 7.2?????



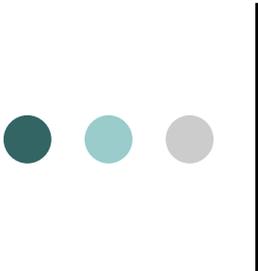
MET/CAL Generation 2

- Extensive VOC collected to date and still on-going
- Revolutionary new platform for MET/CAL
- Multi-year development effort



MET/CAL G2 Development Goals

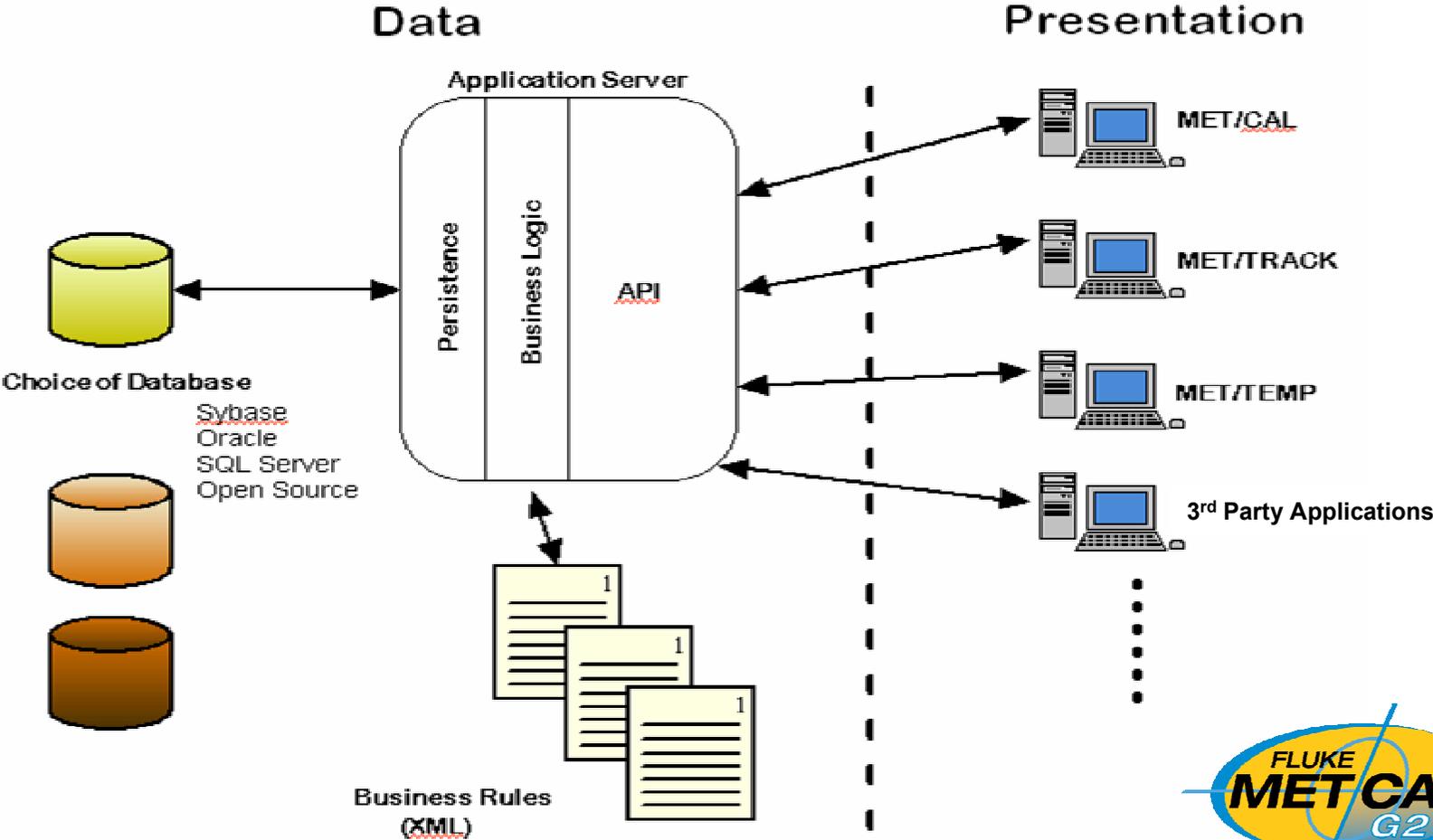
- Make MET/CAL scalable
 - Single user to multi-site enterprise
- Add new workload to automated calibration
- Expand the functionality of MET/TRACK



MET/CAL G2 Development Goals

- Support more regulatory requirements
 - FDA (21CFR Part 11)
- Additional Laboratory Management Capabilities
- Evolve past client/server into...
multi-tiered service oriented architecture.

MET/CAL G2 Architecture Overview

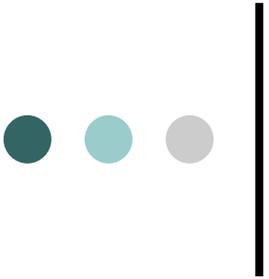


MET/CAL G2 Development

- Engineering development will be staged over three phases
 - Phase 1 - MET/CAL 7.2
 - Enhanced for RF calibration
 - Flexible standards
 - Complete 2006

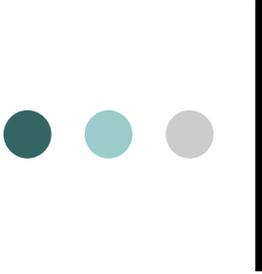


APPLICATION SERVER



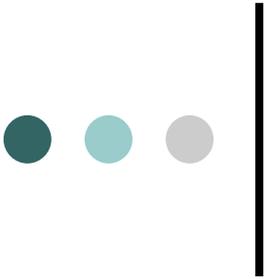
MET/CAL G2 Development

- Phase 2 – MET/CAL G2 (Laboratory Management)
 - Commercially-available high performance application server underlying structure
 - MET/TRACK completely browser based
 - New license structure
 - Addition of 3rd party applications



MET/CAL G2 Development

- Phase 3 – Continued evolution
 - Multiple databases supported
 - Big changes in MET/CAL “Run Time”
 - Complete 2008/2009



We Need Your Input

- Development of browser-based MET/TRACK GUI
 - See Matt Sell (matt.sell@fluke.com)
- Procedure Development Community
 - See Peter Dack (peter.dack@fluke.com)

