

**FLUKE®**

# **Fluke Precision Measurement**

# **The challenge of asset management and calibrating today's workload**

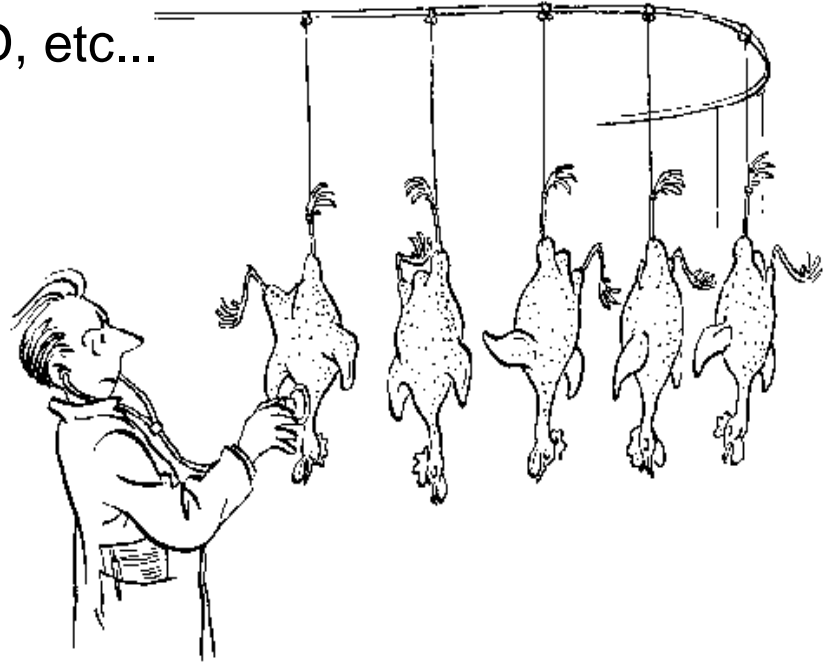
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# The Challenge.....

- Increased Focus on Quality Requirements
- Documentation Requirements
- Workload
- Personnel
- Productivity
- Asset Management
- Equipment

# Quality Requirements

- Quality Standards
  - ISO9000, QS9000, etc...
- Accreditation to a recognized authority
  - UKAS, NKO, NVLAP, DKD, etc...

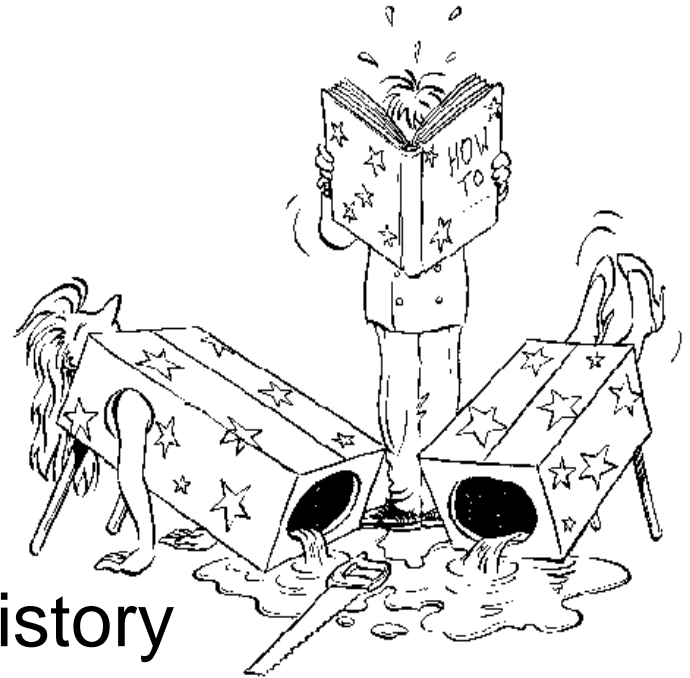


# Quality requirements

- ISO 17025
  - ...establish and maintain procedures to control all documents, such as regulations, ... software, specifications, instructions, and manual.
  - ...use appropriate methods and procedures for all tests and/or calibrations
  - ...where appropriate, estimation of the measurement uncertainty as well as statistical techniques for analysis of test and/or calibration data.
  - ...checks needed to maintain confidence in the calibration status of reference, primary, transfer or working standards and reference materials shall be carried out....

# Documentation

- Procedures
  - Calibration
    - \* Equipment to be used
    - \* Actual calibration process
  - Out of Tolerance conditions
  - Handling and Storage
  - etc
- Calibration Records and History
- Measurement Uncertainty
- Traceability



# Workload

- Technology Drive
  - DMMs
    - \* More functionality
      - Capacitance, Temperature, Frequency, etc
    - \* Increased automation
      - RS232/IEEE-488
    - \* Increased Accuracy
    - \* Lower cost of ownership
    - \* Growing Installed base



# Workload

- Oscilloscope Trends
  - Increased Bandwidth
  - Increased Functionality
  - More complex
  - Becoming Measurement Tools
  - Lower Cost of Ownership
  - Growing Installed Base



The Agilent 86100A Infinium DCA is a high-speed **50 GHz** oscilloscope that also functions as a digital communications analyzer.



# Workload

- Hybrid Instrumentation
  - ScopeMeter
  - Documenting Process Calibrator
- Requiring a variety of calibration instrumentation
- Very popular instruments



# Workload Trends

- New Regulations

- Forcing the use of different and new classes of instruments

- \* Electrical Testers
    - \* Air Quality testers
    - \* Power Quality Analyzers
  - \* Not calibrated (regularly) before!



# Workload Trends

Result:

- More Instrumentation to be calibrated
- New/different calibration equipment needed

# Personnel

- Higher Calibration Volume means more capacity required.
- Higher Accuracy and Wider Functionality means more specialized personnel and equipment.
- No regular Metrology education
- Lack of metrologists

# Productivity

- Minimal Downtime!!!
  - On Site/In-Situ Calibrations
- Fewer calibrations
  - Optimization of Calibration Interval
    - \* Maintenance of History
    - \* Guard-banding

# Productivity

## “Back to Core Businesses”

- Out-sourcing to TPM
  - Benefits:
    - \* Variable Costs
    - \* Little Fixed Costs
      - Less Personnel
      - Less or no cal equipment
      - No facility
    - \* One Stop Shop

# Productivity

## Back to Core Businesses

- Out-sourcing to TPM

- Drawbacks:

- \* Calibrated Back-Up Instrument Pool
    - \* Additional Logistical costs
    - \* Additional Admin costs
    - \* On Site Cal services legally traceable?
    - \* Not in Control of own Quality
    - \* Is there really a One Stop Shop TPM?
      - Specific Parameters not always handled by TPM
    - \* Loss of technical competence
    - \* Vulnerable traceability.
    - \* Still need for asset management
    - \* Still need for intermediate checks

# Asset Management

- Document Traceability Chain
- Optimize re-call of assets
- Comply to Quality Standards
- Tools for quality control and feedback, measurable Q parameters
- Share/Distribute information
- Data Integrity and security
- Total cost of ownership of assets
- Cost Control



# Asset Management

- Fast throughput, increased volume
- Computer-Aided Calibration, effective use of experienced personnel
- Closed-loop calibrations, multi-task capability
- Increased Productivity
- Asset utilization
- Less back-up instrumentation

# The Solution(s)

- First a few simple questions
  - What's the company's policy on
    - \* Pay back periods
    - \* Quality Control and Assurance
    - \* Core business activities
  - Are there more labs within the corporation
  - Do they share the same quality and documentation systems
  - Can we improve...
    - \* Cost of operation
    - \* Turn around Times (TAT)
    - \* Workload coverage
    - \* Documentation
    - \* Efficiency (use qualified personnel for demanding tasks)

# The Solution(s)

- Some more questions...
  - Are all quality standards known to comply with
  - Is all workload identified to be calibrated regularly and traceably
  - Is there staff to handle the
    - \* calibrations
    - \* documentation
    - \* asset management
    - \* etc.

# The Solution(s)



- Phase One:  
Of the Shelf Software!  
Fluke's MET/CAL *Plus* Software
  - Automates asset management enterprise wide
  - Fulfills requirements of today's Standards
    - \* ISO9000
    - \* ISO17025
  - Automates the documentation consistently
  - Automates calibration processes enterprise wide and consistently
  - Handles all workload types
  - Handles all standards and references
  - Improves throughput and TAT
  - Improves the efficiency of the lab

# The Solution(s)



- MET/CAL *Plus* Software
  - Flexible and Tailor-able to the Cal-Lab's Needs
  - Developed by Metrologists for Metrologists
    - \* Over 100 Man-years of development
  - PC Based
  - Documented
  - Supported
  - Updated Continuously



# The Solution(s)

- Phase 2:  
Multi-Product Calibrators
  - Calibrating today's and tomorrows instrumentation
  - Upgradeable / retrofit-able with options to meet future workload requirements
  - Very Low cost of ownership in relation to workload covered.



# The Solution

- With an installed base of 200 instruments (DMMs, Scopes, Power Quality Meters/Analyzers, Recorders, Current Clamps, Process Calibrators, etc)

MET/CAL *Plus* in combination with a MPC ensure.....

# The Solution

- A pay back period of less than two years
- Complete asset management
- Cost control of assets
- Documented traceability, managed/controlled in house!
- Efficiency
- Compliance with today's standards and requirements.
- Optimized utilization of assets
- Consistency
- Competence prevention



# Special Promotion

- Order a Fluke 5500A Multi Product calibrator



and MET/CAL software



and receive 30% of the total list price.