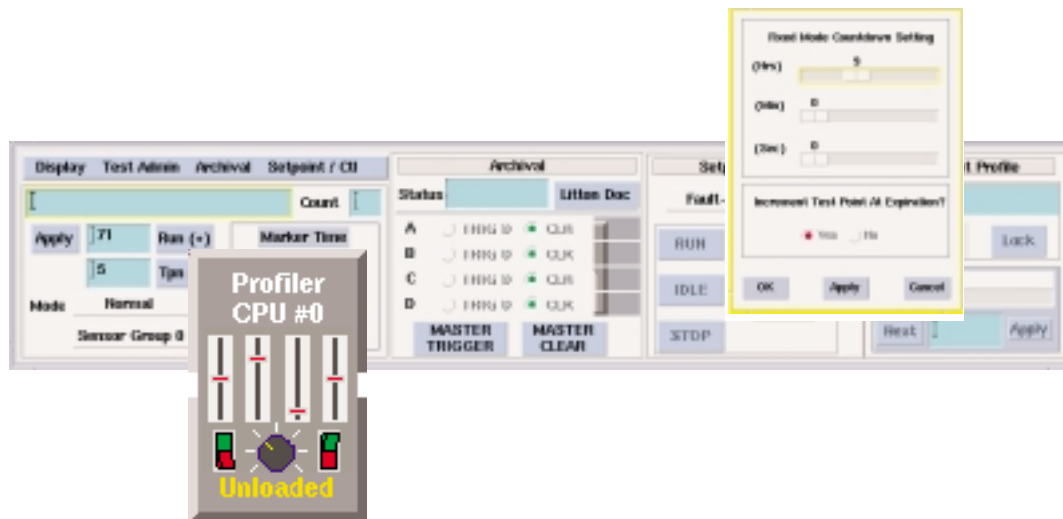


Profiler



Single point of control for test data management in VMEwindow[®]-based real-time data systems

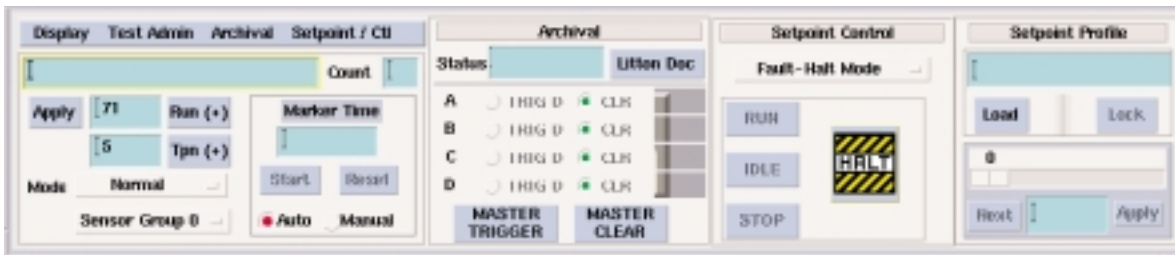
Profiler is an optional component for VMEwindow that assists in organized test management and provides automated stimulus/ response test capability.

To help organize test data, *Profiler* provides the data system operator with a single point of control for establishing data management or characterization markers. The Run and Test Point Numbers are typically used to identify data and to provide a consistent mapping to a test plan or run matrix, while the Run Type and Sensor Group menus provide a means of further characterizing calibration test conditions to facilitate automated post test processing.

Profiler provides menu selections for the following Run Types: Normal, Quiescent Zero, Shunt, Gravity Tare, Pressure Tare, Esp Full Cal, Esp Zero Call, DC Zero Cal, DC Pressure Cal, AC Pressure Cal and User Defined 1 through 5. Also, the *Profiler* provides a Sensor Group Selection Menu for Groups 0 through 7.

Allows a variety of data management or characterization markers, including:

- Test Point Number
- Run Number
- Run Type
- Sensor Group
- Maneuver Name
- Occurrence Number



The *Profiler* may optionally be used to select a Test Case Maneuver Name and Occurrence Number which are subsequently used in identification legends on post test plots. In addition, the Test Case Maneuver can be used to coordinate real-time data displays, where the user associates specific screen formats with the various maneuvers or test cases. When a given maneuver is selected, its associated screens are displayed on both local and remote hosts as desired.

Parametric Setpoint Stimulation and Feedback Monitoring

The *Profiler* provides the capability to schedule and output parametric setpoint values to assist in repeatable automated system testing. The *Profiler* supports both Time Domain and Condition Domain setpoint profiles, and each of these may be comprised of an arbitrary number of setpoint parameters.

When executing Time Domain Profiles, a series of setpoint or simulation values are output as a function of elapsed time. In addition to outputting user defined scalar values, a time dependent assignment for a setpoint parameter may be made to any other system measure and such as a switch closure, a temperature measurement or some composite computation. The system operator has control over the elapsed time through a graphical user interface, and the elapsed time may be paused, moved backward or moved ahead as desired.

When executing Condition Domain Profiles, a sequence of desired setpoints are output, but there is no time dependence. With Condition Domain Profiles, the user may optionally associate a feedback parameter with each setpoint parameter and specify an acceptable error tolerance for each setting. When automatically executing a Condition Domain Profile, the system will wait until the feedback response parameters are all within the user

specified error tolerances. Once the feedback residuals are acceptable, the system will optionally trigger user specified archiving, will increment the Test Point Number and will move to the next condition in the schedule. The system operator controls the overall execution of the profile through a graphical user interface and may pause or resume table execution as desired.

All Standard Device Control Interface Hardware is Supported

Since the *Profiler* is fully integrated within VMEwindow, virtually all standard interfaces are supported, and custom interfaces can also be supported, if necessary. The *Profiler* has been used to assist with automatic testing in several diverse areas of application where a variety of interfaces and devices have come under control.

Examples of Wind Tunnel Applications:

- D/A to command external servo controllers for hydraulic and electrical valves and other mechanisms
- IEEE488 to command dedicated device control computers
- RS232 to command a specialized recording system and facility computer system
- TCP / IP to command a networked computer system

Examples of System Laboratory and Integration Testing:

- RS485 control of Electrical Load Banks
- D/A control of Auxiliary Power Unit Speed / Load Profile (gas turbine engine)
- Discrete Digital Bit Output for Timer Controls
- MIL-STD 1553 to control an Aircraft ECS system and to Emulate Flight Conditions
- SCRAMnet Replicated Memory to control Flight Control Electro Hydraulic Devices
- Analog, Digital and Network I/O to perform end to end test of cables and components for a Naval Navigation and Control System

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