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SLC Control Program

SLC INDEX

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SLCNET Micro Management

February 6, 1995

Author: *Kenneth Underwood* **Subsystem:** *Micros* **User Impact:** *Significant*
Panel Changes: *Many* **Documents:** *No* **Help File:** *Yes*

Two new touch panels will replace 17 current touch panels that provide SLCNET micro reset, IPL, crate verify, and CAMDMP functions. There will be no loss of existing functionality, instead there is an additional feature that permits modification and display of micro timeout values.

After a 2 week trial period, these new touch panels will replace the existing Network Index and 16 other touch panels, but can be temporarily accessed through the NETWRK INDEX button from the main Index Panel. The first touch panel provides buttons for the selection of a micro and crate using the new Dynamic Button Facility as well as a number of frequently needed functions and displays. The second touch panel can be accessed through the MICRO DIAG-NOSTIC button on the first touch panel and provides a number of less frequently used diagnostic functions and displays.

The Dynamic Button Facility provides a software mechanism whereby a small set of touch panel buttons may be used to choose from a potentially unlimited set of hierarchically related context sensitive items. On the SLCNET Micro touch panel the user must first select a micro name and then optionally choose a crate number. For clarity several buttons on the touch panel are labeled with the current micro and crate selection. All selections are sticky and will be reselected upon return to the touch panel.

A micro can be selected by pushing the SHOW PREV MICROS or SHOW NEXT MICROS buttons until the desired micro name is shown or by pushing MICRO: and entering the name of the micro at the prompt. To select another micro push the [MICRO:] button and the current micro and crate will be cleared.

The CAMAC crate number is selected just like the micro name. However, the micro name must be selected first. Only those crates defined in the database for the selected micro will be selectable. In addition all crates may be selected by pushing the [ALL*] button.

Informative messages are issued should a micro or crate selection be required for the requested function. Because of the dynamic nature of the selection buttons, button macros must use the [CLEAR SELEC-TION] and [MANUAL ENTER] buttons to manually enter a selection.

SLCNET Micro Timeout

February 6, 1995

Author: *Kenneth Underwood* **Subsystem:** *SLCNET Micros* **User Impact:** *Small*
Panel Changes: *Few* **Documents:** *No* **Help File:** *Yes*

A facility has been added to manually increase the time the message service will wait for a SLCNET micro to respond in addition to the time that is specified by the software. This facility was added in an attempt to understand and circumvent SLCNET micro timeout problems seemingly associated with the transmission of large blocks of synchronized data from several micros to a VAX process. This problem has been most noticable with BPM Buffered Acquisitions involving a large number of data points from many micros.

The incremental micro timeout facility can be reached by pushing the [NETWRK INDEX] button and then the [SLCNET MICRO PANEL] button. Select the micro to be changed using the Dynamic Button Selections at the bottom of the touch panel. Pushing the [DISPLY MICRO TIMOUT] will display the current timeout values in milli-seconds for all micros. The current incremental timeout value for the selected micro will be displayed on the [CHANGE MICRO TIMOUT] button. Pushing this button will prompt the user for a new value. The prompt also shows the valid input range in milli-seconds.

Any number of micros can be changed, however only the greatest incremental timeout value of all micros in the message service transaction is used. Any changes made to the incremental timeout values are local to the SCP, but they will be applied to all message service transactions, not just BPM Buffered Acquisitions, involving the modified micro(s) by that SCP.

Configuration Files for Fast Feedback Loop Gains

January 26, 1995

Author: *Grossberg* **Subsystem:** *Fast Feedback* **User Impact:** *Small*
Panel Changes: *Few* **Documents:** *No* **Help File:** *Yes*

In response to a recent request, five buttons for managing configuration files for saving loop gains have been added to the fast feedback DIAGNOSTIC panel. To make room for the new buttons, all buttons for performing calibrations have been removed; the calibration buttons still exist on the fast feedback Cascade and Calibration panel. The DIAGNOSTIC panel can be accessed through the fast feedback STATE panel, and other fast feedback panels.

The five new configuration buttons are as follows: [SAVE GAIN CONFIG] saves a config file which contains the current gains and cascade gains for ALL fast feedback loops; [DISPLY GAIN INDEX] displays the index of previously saved loop gains; [INCRMT POINTR] moves the index arrow down for selecting a config; [DECRMT POINTR] moves the index arrow up for selecting a config; [DISPLY GAIN CONFIG] displays the selected loop gain configuration.

Note that there is no button for loading a selected loop gain configuration. It is anticipated that there will be no need for changing the loop gains of ALL loops at the same time. Rather the saved files will be used as reference when changing the gains of individual loops.

Two Changes to VAX Fast Feedback Plots

January 26, 1995

Author: *Ron MacKenzie* **Subsystem:** *Fast Feedback* **User Impact:** *Small*
Panel Changes: *Few* **Documents:** *No* **Help File:** *Yes*

Two changes have been made to the VAX Fast Feedback software which improve the plots that you get when you "acquire data" or request plots from the canned plot panel. These changes allow you to spot trends and periodic oscillations in the data.

The first change is an increase in the ring buffer size from 999 points to a maximum of 2000 points. This means that the scatter plots contain more points of data. This change has been made for three loops only (more loops will follow as appropriate). The loops are: LI27 Feedback, IP COLID FBCK, and FB31 ENERGY.

The second change involves the addition of a new toggle button $\boxed{\text{TOGGLE PLOT LINES}}$ on the Canned Plot Panel. This button may be toggled between LINES and NOLINES mode. When LINES mode is selected, the points on scatter and FFT plots are connected with lines. When NOLINES mode is selected the points are simply plotted without connecting lines. LINES mode is the default mode. Which ever mode is selected, it affects all Feedback scatter and FFT plots for all loops on your SCP.

POLL0 Poll Rate

February 7, 1995

Author: *Kenneth Underwood* **Subsystem:** *SLCNET* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *None* **Help File:** *None*

The SLCNET poll rate low warning message issued by POLL0 has been modified to include the incremental SLCNET error count during the current update interval. A low poll rate warning with a zero SLCNET incremental error count most likely indicates that the SLCNET hardware is working correctly, but is overloaded with large blocks of data from many micros such as from BPM Buffered Acquisition. A non-zero SLCNET error count most likely indicates transmission problems on the network such as a bad amplifier or a stuck micro transmitter.

RTL Watchdogs Revisited

February 6, 1995

Author: *Ron Chestnut* **Subsystem:** *Watchdogs* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *Yes*

The RTL Watchdogs have been upgraded to use the setpoint (SETP) and tolerances (TOLS) on the slow feedback control panel. These watchdogs monitor several (12 and 16) XCOR BDES values. These values are treated as a vector and multiplied by a vector of coefficients to produce a value which corresponds to how well the RTL line is tuned for the desired energy. This value is the SGNL variable on the slow feedback panel. As such, it is history buffered.

Bill Spence is checking the numerical values and will suggest new tolerances so the watchdog will be more responsive to detrimental changes in the XCOR BDES values. For those with even more interest, the units monitored and vectors of coefficients can be found in REF_FEEDBACK: RTL_WATCHDOG_N.FOR and RTL_WATCHDOG_S.FOR.