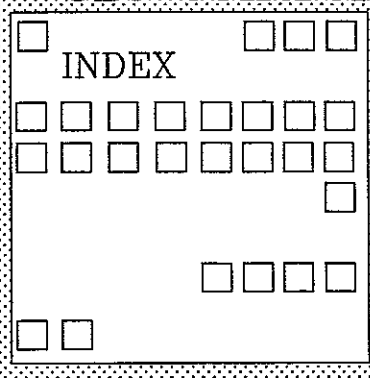
Index Panel

SLC Control Program



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Configuration Activation With Multiknobs

September 10, 1991

Author: *Daniel Van Olst* **Subsystem:** *Configurations* **User Impact:** *Small*
Panel Changes: *Few* **Documents:** *No* **Help File:** *Yes*

A new feature has been added to the configuration facility to allow gradual activation of all or part of a configuration by using a multiknob.

Two new buttons have been added to the configuration panel. These are KNOB ACTVT ALL and KNOB ACTVT PARTL and are similar to the existing activation buttons. If one of the new knob activation buttons is pressed, a multiknob file is created and a knob is assigned. The label on the knob is the selected region name, and the units are "percent activation". The knob starts at 0.0% (no changes applied yet,) and 100.0% means the configuration has been fully activated (just like a regular activation).

All the caution that is taken when using the old activation buttons needs to be applied to the new multiknob buttons as well. In addition, the following factors need to be taken into consideration:

- Not all items can be multiknob-activated. The only ones for which this will work are devices which

  (a) can be activated, and

  (b) can be multiknobed.

  This amounts to BDES's and VDES's for magnet and magnet-like devices, and the secondaries PHAS and DRVR for the primaries KLYS and SBST. Other items in a configuration will be ignored and multiknobing will not be performed for them.

- A configuration activation multiknob can contain many hundreds of items. Exercise caution while turning a configuration activation multiknob.
- Magnets whose DES or CON values in the database are outside the legal limits for the device will not be included in a configuration activation multiknob.
- A configuration activation multiknob has a legal range of -100% to +200%. However, at no time will a multiknob allow a magnet to go outside of its legal range, so all of this range may not be available.

Updating Displays on COWs, XCOWs, and Workstations

October 14, 1991

Author: *Daniel Van Olst* **Subsystem:** *Updating Displays* **User Impact:** *Small*
Panel Changes: *Few* **Documents:** *No* **Help File:** *No*

It is now possible to put a Continuously Updating Display onto a COW, XCOW, or workstation screen. In the case of a COW or XCOW the display is put on the main screen. In the case of a workstation, a new window is opened for the display.

In all cases, the screen is treated exactly as another monitor by the software for the Continuously Updating Displays, and is driven by the Display Processes, not by your SCP. It is possible from one SCP to put a Display on someone else's COW or workstation; therefore some caution is in order.

1. If a COW is to be used as a monitor, press HALT DISPLAY from the main INDEX if there is a SCP display running. This will keep the SCP from interfering with the Continuously Updating Display.
2. Go to the USER DEV PANELS. From there, choose OTHER CUD MONTRS.
3. Choose either COW CUD PANEL, XCOW CUD PANEL, or WRKS CUD PANEL, depending on what is required.
4. Select the COW, XCOW, or Workstation. Press MONITOR HSTA to activate the COW, XCOW or Workstation as a monitor.
5. Go to the CUD CONTROL PANEL. Select the display that is desired and then press DISPLY ONTO MONITR.
6. When completed, make sure to set the monitor HSTA back to OFF. This is especially important for COWs, so that the Continuously Updating display will not interfere with the SCP displays.

New Faults Updating Display

September 11, 1991

Author: *Daniel Van Olst* **Subsystem:** *Updating Displays* **User Impact:** *Small*
Panel Changes: *Few* **Documents:** *No* **Help File:** *No*

A new continually updating display (known as the Faults Updating Display) has been added. This display shows an extended list of the text items from the bottom of the Summary Updating Display, as well as text items representing the changes on the Klystron Updating Display.

Whenever the three letter code for a klystron on the Klystron Updating Display changes, a 28-character translation appears on the Faults Updating Display. The only exception is if the code goes to ACC (for no accelerate triggers) or to blanks (for no problems at all,) in which cases no message comes up on the Faults Updating Display.

The klystron portion of the Faults Updating Display gets its information from the Klystron Updating Display process and will not work if the KLYSTRON process is not running.

Machine Mode Support for the Klystron Updating Display

September 11, 1991

Author: *Daniel Van Olst* **Subsystem:** *Updating Displays* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

If SLC is operating in NPI mode whereby the gun in sector 25 is used, only the klystrons in sectors 25-30 will be visible on the Klystron Updating Display. In addition, the klystron portion of the Faults Updating Display will only show items for sectors 25-30.

Fast Feedback Data in Matlab Format

September 10, 1991

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

A new button "Save Matlab File" has been made available on the fast feedback Custom Plot panel. This button makes it possible to save the most recently acquired ringbuffer data to a file which can later be examined using the matlab software.

Each file contains all ringbuffer data and is composed of lists of about 1000 data values and 1000 corresponding time values for each of the elements of the measurement, state and actuator vectors as well as the controller task's version of the measurement and actuator vectors. The matlab variable name for each time and data list is composed of three parts: the first three characters are 'ctl' or 'xxx' indicating that the data is from the controller task or from the task which owns the vector; the next four characters are either 'data' or 'time'; and the final characters represent the name of the element. To accommodate the needs of the matlab software with respect to special characters, all minus signs (-) and plus signs (+) contained in elements names have been changed to 'e' and 'p' respectively.

To use this facility, press the 'Acquire Data' button on any panel where it exists. After the data has been displayed or plotted, press the 'Save Matlab File' button on the Custom Plot panel and respond to the prompt for a file name. If desired, precede the file name with a directory specification. The default file name is 'Matring' and the default directory is the one from which the SCP was invoked.

Error messages that might appear include:

- 'No Data Acquired' – the 'Acquire Data' button needs to be pressed.
- 'Error opening file; possible bad file name' – usually an error in directory specification.
- 'Error Occurred: Matlab File Not Written' – usually preceded by a more specific error indicator.

When the file is written as requested, the message appears:

- 'Matlab File Successfully Written.'

History Buffer Data Files

October 16, 1991

Author: *Ralph Johnson* **Subsystem:** *All* **User Impact:** *Some*
Panel Changes: *None* **Documents:** *No* **Help File:** *None*

The requirements for the history buffer facility call for having all the data available online for a period of one year. Beginning in December we start to delete from the disks those history files that are older than 1 year. Subsequent deletions will be done on the 1st of each month. Files which have been deleted from the disks can still be obtained from the history data tapes, and may be restored for a short period of time if necessary.

History Buffer Plots

October 16, 1991

Author: *Ralph Johnson* **Subsystem:** *All* **User Impact:** *Some*
Panel Changes: *None* **Documents:** *None* **Help File:** *No*

When you ask for a history plot a message will now appear on the graphics screen while the SCP is obtaining the data needed for the plot. A yellow box (black on monochrome monitors) with the black text "GETTING DATA" will appear. When it disappears the SCP has the data and then generates the plot. The delay between the disappearance of the box and the appearance of the plot is the time it takes to generate the graphics. This informational box does not appear on an Ann Arbor terminal.

History Buffer Archive Data

October 21, 1991

Author: *Ralph Johnson* **Subsystem:** *All* **User Impact:** *Some*
Panel Changes: *None* **Documents:** *No* **Help File:** *None*

Each week the previous week's history data is saved in an "archive file". The data is "compressed" by saving one point in a specified time interval. Along with each data point a flag is saved indicating whether the device was trimmed, or its BDES was changed during the interval between the saving of values. This flag was previously lost during data compression and has now been restored.

This flag indicates the following conditions in the order listed below:

- If the value being saved has a format or out-of-range error, the value will be marked as being in error and any other information for data points within the interval being compressed will be ignored.
- Otherwise, if there was a BDES change or a trim done any time during the interval, the value saved will be marked with a BDES change and/or trim flag.
- Otherwise, if the device was off, the value will be marked with an offline flag.

History Buffer RMS Value

October 21, 1991

Author: *Ralph Johnson* **Subsystem:** *All* **User Impact:** *Little*
Panel Changes: *None* **Documents:** *No* **Help File:** *None*

The history buffer facility maintains an "RMS" value for most of the magnets in the system. This value is saved in the database secondary "RMS". It is intended to be a measure of the "behavior" of the device over the last few hours. The effect of each individual data point is exponentially damped as it ages. The "RMS" value saved in the database has now been changed so that it is the ratio of the "RMS" value to the tolerance value for the "RMS". Thus any value of the "RMS" secondary greater than 1.0 indicates that the device value is changing more than it should. By saving this ratio it will be easier to find problem devices when using Z-PLOTS of the "RMS". More information may be found in the document DOC$FUNC_REQ:RMS_CALC.TEX on the SLC/MCC VAXes.

Klystron Golding Changes

August 13, 1991

Author: *Daniel Van Olst* **Subsystem:** *Klystron Golding* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *None* **Help File:** *None*

- The Klystron Golding facility now avoids data acquisition if the energy feedback loop(s) for a region are controlling the beam.
- If there is a special phase shifter for a sector (such as for fast feedback) klystrons and subboosters in that sector will not acquire data until the special phase shifter is zeroed.
- If a sector is a fast-feedforward control sector (currently sectors 17 and 18) klystrons and subboosters in that sector will not acquire data until fast feedforward is turned off. (This change and the two before it solve CATER 20481).
- The Klystron Golding Text Display has been changed slightly. Before it showed the current PDES in the first column and the current PDES plus the proposed change in the second column. When updating PDES, these values would change from (for example) 15 and 16.2 to 16.2 and 17.4. This made it appear that continuing to press UPDATE PDES would continue to increment PDES by 1.2 degrees (which was extremely misleading).

  The display has been changed to show the original PDES (from when your analyzer was selected) and the current PDES. For the previous example, the display will show 15.0 and 15.0 before updating PDES, and 15.0 and 16.2 after updating PDES. (This solves CATER 20273).

BPM Range Panel

August 23, 1991

Author: *Linda Hendrickson* **Subsystem:** *BPMO* **User Impact:** *Small*
Panel Changes: *Yes* **Documents:** *No* **Help File:** *No*

A new BPM Range panel has been added to facilitate selection of commonly used BPM measurement definitions. It is accessible from the main BPM measurement panel. Canned BPM measurement definitions are initialized from the panel file. The software supports automatic selection of the public calibration, micro range, absolute or difference orbit selection and damping ring turns. This panel is intended for the convenience of operations, and is expected to be modified after more operational experience has been gained.

Individual Beam Sizes from Beamstrahlung Data

August 23, 1991

Author: *Linda Hendrickson* **Subsystem:** *FF* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *Yes* **Help File:** *None*

The beam scan Autocollide Display software has been modified to show estimated individual beam sizes which are calculated using beamstrahlung (BSM) data. The method used for this calculation is empirical, based on studies by Earl Gero and others and further developed by Volker Ziemann. Truncated widths are calculated for the north and south BSM monitors by subtracting pedestals from the BSM data and calculating the width of data within two sigma of the center. Tables are available for converting individual beam sizes to the resulting BSM widths; the software inverts the problem by guessing the beam widths and minimizing the error in the BSM widths.

BPM Timeslot Difference Displays

December 3, 1991

Author: *Linda Hendrickson* **Subsystem:** *BPMO* **User Impact:** *Small*
Panel Changes: *None* **Documents:** *No* **Help File:** *No*

A new BPM special display has been added to show the difference between BPM data measured on timeslot 1 and timeslot 4. From the BPM measurement panel, the user should first select a measurement definition and a range of micros. Then the [SETUP SPECL DISPLY] button should be used to select the TSDIFF option. the [START-STOP DATA] button may then be used to display the difference between measurements using timeslots 1 and 4.

Integrated Ion Chamber Readings

August 13, 1991

Author: *Terri Lahey* **Subsystem:** *Accelerator* **User Impact:** *Small*
Panel Changes: *Few* **Documents:** *No* **Help File:** *Yes*

The Beam Pulse Accounting subsystem reads and integrates Final Focus ion chambers, SLD RAD monitors, and ion chambers in other parts of the accelerator.

Readings are read at a 6 minute rate and integrated for the past six minutes, hour, shift, day, and week. This data is logged in history buffers and is available from 3 panels off of the Beam Pulse Accounting Panel:

[NFF IONC HSTBUF] [SFF IONC HSTBUF] [MISC IONC HSTBUF]

The SCP panel path is: Index→Special Displays→Beam Pulse Accounting.