

### §36. Real Time Data Monitoring System Improved in Flexibility

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We developed a data monitoring system and have been used it for monitoring experiments at NIFS. The system shows data as following:

- (1) It has many windows and displays one selected window among them.
- (2) It splits 1 window into 8 panes.
- (3) Only 1 series of data is shown in each pane.

When there are more than 8 data, we must choose an adequate window from a lot of windows. We used it for the experiment to acquire data with 48 channels ADC and the following problems became clear.

- (1) For comparing similar data, too few numbers of data can be shown at the same time.
- (2) When the positions and combinations of data are not fitting the sense of the user, it is necessary to re-define configuration and re-start the system.

The system is written in C language and if we modify it so that many things can be changed on the fly, the system will become more complicated than we can control it. Therefore, we developed a new real time monitoring system using Java language on a Sparc Station. Java language has many advantages in developing the dynamically changing programs.

The new system has the functions such as:

- (1) It has only one window, but can create and remove panes at any time.
- (2) The selected data can be displayed in an any pane, if the unit of the data is same to the unit of the data shown in the pane.
- (3) In recording a current monitoring configuration beforehand, it is possible to set the configuration at the next start time.

Using these functions, users can display the combination of data depending on their needs. Because of the platform independence, the Java program should work in the cheap PC environment. The data exceeding 1000 channels can be monitored at the same time, if the data are transmitted to many PCs with multicast protocol.

Fig. 1 shows the initial view of the system. Fig. 2 shows the view selecting data to add.

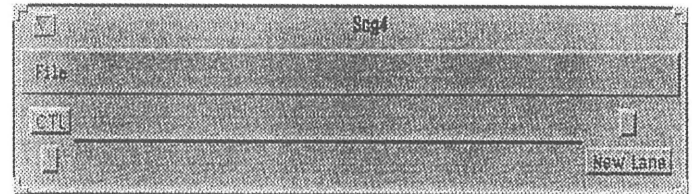


Fig.1 Initial view.

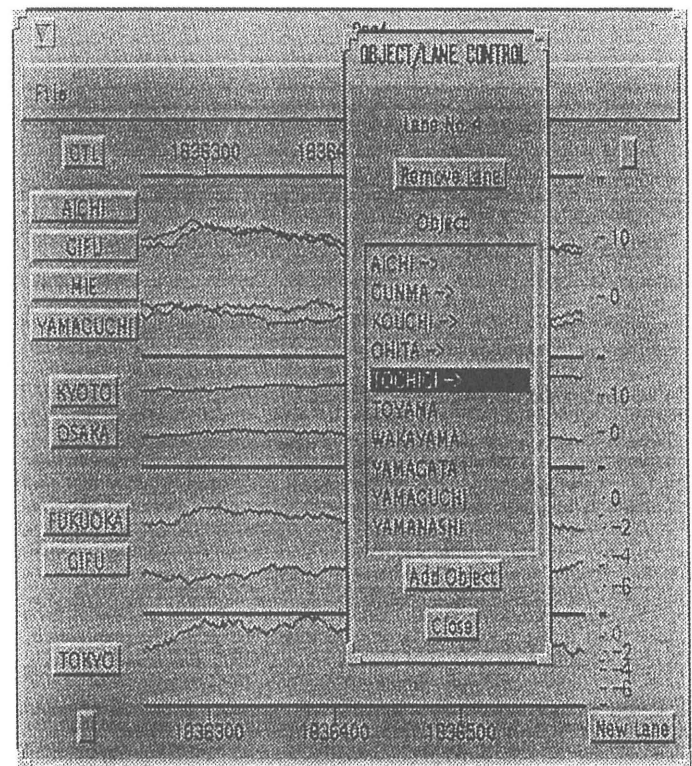


Fig.2 Adding data on the fly.

#### References

- 1) Kariya, J. et al. A Flexible and Extensible Monitoring System for Large Scale Experiments, Proc. of ICEC16/ICMC(1996),673-676