

§4. LHD Monitoring System for Control Data and Plasma Experiment - 2

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The data monitoring system is completed in the last year and operating for one year the LHD. The system is improved by users' requests. The items of the improvements are as follows,

- 1) Improve the data base system for the operators and users.
- 2) Shot number is automatically sent from LMS computer system to this system.

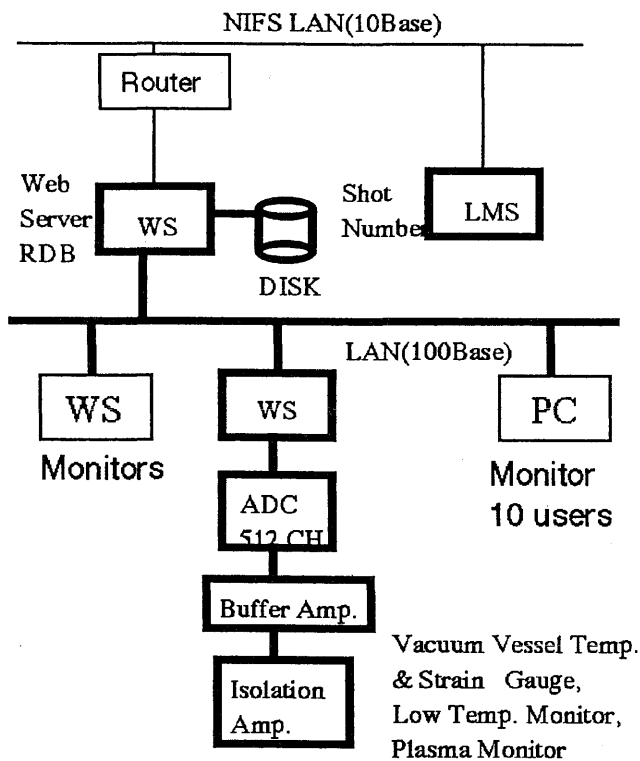


Fig. 1 Present System

When we change the size of the client window, the parameters of the window are reset and sometimes the windows is closed. This bug depends on the bug of Netscape and we use the latest version (ver. 4.5) of Netscape Communicator in order to avoid this bug.

The data are stored by the three layers' structure for the each experiment. But after the practical operation of the system, it is not convenient for the operators and clients, so we changed the two layers' structure. One is for the monitoring system of LHD hardware, and other is for the plasma experiments.

We added the new windows to display the real-time trend data. In the previous system the real-time graph is available, however, the values of the data are sometimes important to perform the experiment, and this function is used to monitor the temperature of the vacuum vessel.

The function of the external trigger system is improved. The previous system is available only for the single trigger mode, but this is not convenient because someone must care the reset of the trigger in every shot. Therefore, we added the normal trigger mode.

The system set up is shown in Fig. 1, and the shot number is automatically sent from LMS computer system to this system for every shot. This shot number can be editing by manually, too. Because of the automatic shot numbering and the normal trigger mode, the data acquisition is completely automatic for the LHD plasma experiment¹.

In order to research the 3D graphics, we developed the new system that is combined with this system. This system can show the 3D graphics with the real-time data on the windows². The technology depends on the Java3D, and this is used to analyze the discharge of NBI.

Reference

- [1] J. Kariya et al, Workshop on PC and Particle Accelerator Control (PCaPAC99), Jan. 12 - 15, KEK Tsukuba, Japan.
- [2] M. Emoto et al, Workshop on PC and Particle Accelerator Control (PCaPAC99), Jan. 12 - 15, KEK Tsukuba, Japan.