

## Improvement of Diagnostic Data Processing System and Development of Remote Participation System in JT-60U

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A mainframe computer for data processing system in JT-60U, called by Inter-Shot Processor based on the MSP-OS of FUJITSU GS21 200/M with CMOS technology (MSP-ISP), supervises the communication inside the data processing system, provides the data acquisition, produces the diagnostic data base and communicates with the JT-60U control system. The MSP-ISP was replaced by the new Inter-Shot Processor based on the UNIX-OS of FUJITSU PrimePower 450 with four parallel processor of 1.1GHz each (UNIX-ISP) in 2005 after spending three and more years, using the recent information technology. Because of a difference of OS, the UNIX-ISP cannot supervise all user jobs and make a priority of the job. Therefore, the role of MSP-ISP was separated to the main processor of the UNIX-ISP for the supervision of the data processing and its front-end processor for the user's programs. The performance of UNIX-ISP is ~10 times as higher as the MSP-ISP at the stand-alone test using the data conversion program of the CXRS data. It can be expected to improve the processing time by the optimization of the total sequence.

Remote participations to the large fusion facility is considered to be an important issue for the extension of the collaborative research among the nuclear fusion community. Environments of the remote research which contain the remote experiment, the remote analysis and the communication with the remote site were developed by "VizGrid" project. The remote experiment system with a high security is established by the certification and the encrypted communication based on Information Technology Based Laboratory (ITBL). The remote system can set discharge parameters from the remote site with assistance of the dedicated machine that checking the consistency of input parameters. The developed system was tested between Univ. of Tokyo and JAEA, and the result indicates that the system using the HTTP protocol is suitable from the viewpoint of the reduction of the amount of the packet.