7. Collaborations Using Super SINET

The collaboration using Super-SINET which is named "SNET" was started in FY 2001. This network is extended as a closed VPN with Multi-Protocol Label Switching (MPLS) technology on Super-SINET. The remote station for "LHD experiment remote participation" was installed in nine Universities. The subject of "all Japan Spherical Tokamak (ST) research program" and "remote use of Supercomputer" had added to the collaboration using Super-SINET in FY 2005 [1-3].

The following sites were newly joined to SNET in FY 2006;
 a) "Naka Fusion Institute, Japan Atomic Energy Agency (JAEA)" as 10th site of "LHD experiment remote participation.
 b) "Graduate School of Frontier Sciences, The University of Tokyo" as 2nd site of "all Japan ST research program".
 c) "Graduate School of Energy Science, Kyoto University", "Graduate School of Engineering, Kyoto University", and "Institute of Laser Engineering, Osaka University" for "remote use of Supercomputer". Totally, four sites were joined on this program.

Three routers had been used for "LHD experiment remote participation" and "all Japan ST research program" and the routing control was rather complex for the maintenance [4]. In FY 2006, three routers were replaced by one higher rank router to ensure the maintenance and the extension for the future programs. The connection between NIFS-LAN and SNET is shown in Fig. 1.

The network monitoring system was also installed in FY 2006. This system covers all the sites of SNET, and the SNET manager checks the convertibility of SNET. The information about the plan for the network interruption also concentrates at the SNET manager and therefore the manager can perform proper actions if the network incident is occurred. SNET is contributed to progress collaborations with high reliability.

References
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[3] Tsuda, K., Nagayama, Y., Yamamoto, T., Ishiguro, S., Horiuchi, R., T., Hasegawa, H.:Ann. Rep. NIFS (2005-2006) 408.
[4] Horiuchi, R., Tsuda, K., Nagayama, Y., Ishiguro, S., Yamamoto, T., Takami, S.: NIFS-MEMO-51, 2006.

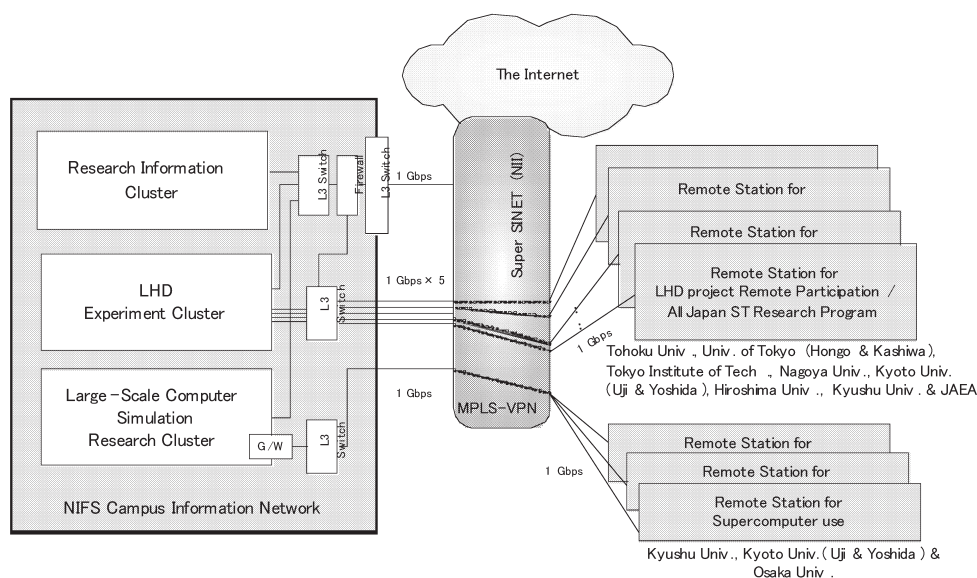(Tsuda, K., Nagayama, Y., Yamamoto, T., Ishiguro, S., Horiuchi, R., Hasegawa, H. (INTEC Solution Power Inc.))

Fig.1: External Connection of SNET