

## 8. Collaboration Using SINET3

The virtual laboratory for Japanese fusion research is known as “SNET”. SNET is a closed virtual private network connecting universities, JAEA and NIFS using the L2/L3VPN service on SINET3, which is the nation-wide academic network operated by National Institute of Informatics (NII). SNET consists of three collaboration categories as follows: (1) the LHD remote participation, (2) the remote use of supercomputer, (3) the bilateral collaboration. The first SNET service was the LHD remote participation, which was established using the L3 VPN on SuperSINET at the end of FY2001. The remote use of supercomputer system and the bilateral collaboration that was previously called the all Japan ST research program were added to SNET in FY2005.<sup>1-4)</sup> The bilateral collaboration serves the remote participations of QUEST at Kyushu Univ., GAMMA-10 at Tsukuba Univ., and HYPER-I at NIFS. The L2 VPN is used in order to take the data of QUEST with LABCOM system at NIFS.

The number of sites is on the increase; 24 sites participate to the SNET as shown in Fig. 1. The categories and remote sites connected by L3VPN are as follows: (1) *the LHD remote participation*: Tohoku Univ., JAEA, Univ. of Tokyo, Tokyo Institute of Technology, Nagoya Univ., Kyoto Univ., Kyoto Institute of Technology, Hiroshima Univ. and Kyushu Univ., (2) *the remote use of supercomputer*: JAEA, Nagoya Univ., Kyoto Univ. and Kyushu Univ., (3) *the bilateral collaboration*: Tsukuba Univ. and Hiroshima Univ. The

categories and remote sites connected by L2VPN are as follows: *Bilateral collaboration*: Univ. of Tokyo (Kashiwa campus), Kyoto Institute of Technology and Kyushu Univ.; *Multicast*: Kyushu Univ.; *Hyper-I*: Kyushu Univ.

On March 2011, NII had upgraded SINET3 to SINET4. The SINET node at Uji campus in Kyoto Univ. was shut down at the same time. On October 2010, the access point of SNET remote site at Uji campus was changed to Yoshida campus. The dedicated line between SINET node at Yoshida campus and SNET remote station is served by the campus LAN at Kyoto Univ. (KUINS) with tag VLAN technology. So, Uji campus is connected to SNET with SINET4.

The SINET4 node at NIFS provides one ten-gigabit port for SNET. New 10G L2 switch was installed between SINET4 node and the SNET core switch, which has several gigabit ports. The remote site at Osaka Univ. for Remote use of supercomputer system was shut down on December 2011.

- 1) Tsuda, K., et al., Ann. Rep. NIFS (2006-2007) 402.
- 2) Yamamoto, T., et al., Ann. Rep. NIFS (2007-2008) 389.
- 3) Yamamoto, T., et al., Ann. Rep. NIFS (2008-2009) 333
- 4) Yamamoto, T., et al., Ann. Rep. NIFS (2009-2010) 367

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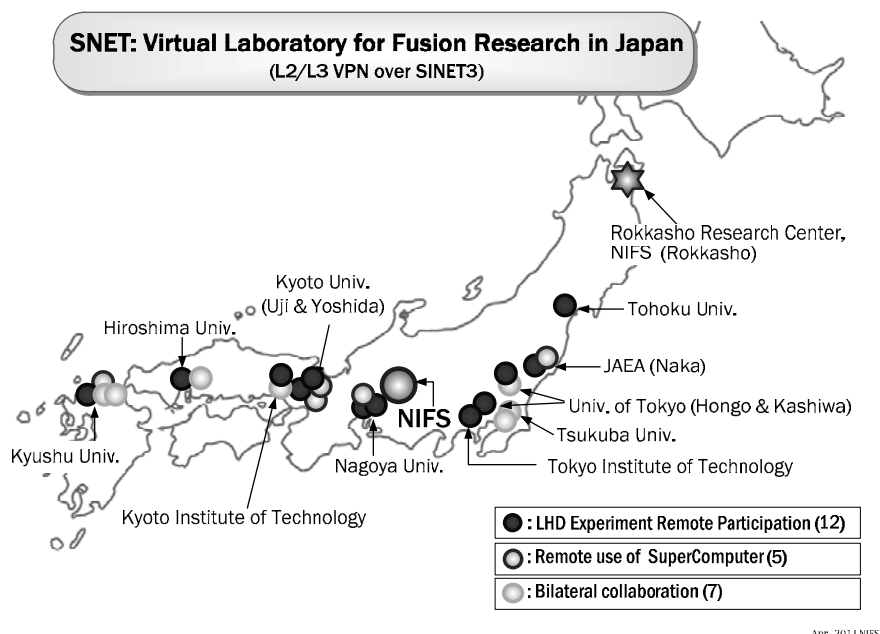


Fig.1 Connection map of SNET